

UBBELOHDE (A. R.). *Melting and Crystal Structure*. Oxford (University Press), 1965. xi+325 pp. Price: 63s.

Mineralogists and geochemists are usually more concerned with solidification and crystal structure than with melting, but the two approaches meet among the unsolved problems of the structures of liquids. Unfortunately, disappointment awaits any mineral scientist who hopes that this book will help him to take adequate account of that often neglected term in solid-liquid equilibria. Rather it will show him how difficult it is to reach any unified theory of liquids, because of the great differences in the order of importance of different disordering mechanisms in different kinds of substances—inert gases, metals, salts, silicates, long-chain organic compounds, polymers, and so on. The author assembles a large amount of data gathered by many different techniques for many types of material, and presents many theoretical analyses of their behaviour. Unfortunately he has to admit that '... it may even happen that the concepts involved warrant careful consideration, but that the experiments described to test them must be regarded as untrustworthy'.

The book must be regarded, then, as one to stimulate interest and to lead the interested reader to the literature, rather than either to expound a theory or to present reliable data. It is therefore a pity that there seems to be at least one notable gap in the quoted literature (the name of Bernal does not occur in the bibliography), and the index is not really adequate (it is largely directed to phenomena and very little to substances). In view of the difficulties in dealing even with simpler substances in the liquid state, it is perhaps not surprising that the information presented is minimal on the melts of importance in geological systems.

E. J. W. WHITTAKER

VERMA (A. R.) and KRISHNA (P.). *Polymorphism and Polytypism in Crystals*. New York (Wiley), 1966. xix+341 pp. Price: 96s.

This book is the first of a new series of Monographs in Crystallography, and contains a foreword to the series by M. J. Buerger and a foreword to the volume by H. Lipson. The book deals primarily with the phenomena of polytypism in silicon carbide and cadmium iodide, the determination of the polytypic structures of these substances, and with theories of polytypism. Polytypism in other substances is mentioned rather briefly. This main part of the book is preceded by three chapters (20 % of the book) that give an introduction to polymorphism