and distribution of micropulsations and a mathematical review of attempts to explain these phenomena in terms of hydromagnetic waves.

L. H. Ahrens's paper concerns the geochemical role of the chemical bond in terms of electronegativity and ionization potentials. In Part I the author deals with the topics of chemical inertness and siderophile tendency, chalcophile–lithophile tendencies, and the significance of varying degrees of covalency on element associations in silicates. Part II will deal with element associations in sulphides; distribution of the elements in the sedimentary cycle, and the formation of metal-organic complexes.

H. Ramberg discusses the chemical thermodynamic approach to mineral studies. Changes in the free energy, enthalpy, and entropy at various temperatures and pressures are considered for several minerals and mineral series. The effects of elastic strain on the free energy of crystalline solids, which are anisotropic with respect to their elastic properties, are considered.

The largest geochemical paper (128 pp.) is an extremely comprehensive and valuable review of the geochemistry of the alkali elements by Heier and Adams. It contains a wealth of tables, distribution histograms and inter-element variation diagrams. T. W. B. and M. B.

BROUWER (A. H.) and BOUMA (A.), editors. *Turbidites.* Amsterdam (Elsevier Publishing Company), 1964. 264 pp. Price: 90*s*.

The rapid growth in importance of the turbidity current hypothesis is reflected in the phenomenal expansion of the relevant literature over the past few years. However, this is the first book to be devoted entirely to that group of sediments whose genesis is ascribed to the action of turbidity events. This volume, the third in an Elsevier series entitled Developments in Sedimentology, is in fact a compilation of some 16 articles, 12 written in English, two in French, and two in German. The latter two groups have summaries and figure-captions in English.

Sandwiched between a brief introduction (Brouwer) and a more lengthy general summary (Bouma), the 14 contributions forming the bulk of this volume are of diverse character. Two are explicitly reviews of the existing literature dealing with the turbidites of specific regions: the United States (McBride) and Britain (Kelling). Eight are essentially local studies of ancient turbidite formations and most of these emphasize some feature of more general application. Perhaps the most novel paper in this category is that by Stanley and Bouma. In an attempt to quantify the complex of parameters utilized in sedimentological and palaeogeographical interpretation these workers have evolved a

punch-card programme for the critical data and describe its application to a Tertiary turbidite sequence in the Maritime Alps.

Two of the remaining papers deal with recent turbidites in the Adriatic (Van Straaten) and the western Mediterranean (Bourcart), while Kuenen furnishes an extended argument for the turbidite origin of modern deep-sea sands and of many ancient sediments. In addition there is a very full bibliography of turbidity currents and turbidites, compiled by Kuenen and Humbert, listing more than 650 references.

Apart from the bibliographical and review content the chief value of this book lies in the diversity of techniques and environments represented in the studies reported. It should prove a valuable reference tool for those whose interests already lie within this field of sedimentology. Moreover the tyro should find it a stimulating but by no means a comprehensive introduction to this intriguing group of sediments. G. K.

EVANS (R. C.). *An introduction to crystal chemistry.* 2nd edn. Cambridge University Press, 1964. 410 pp. Price: 52*s.* 6*d.*

The first edition of this book appeared in 1939 (M.A. 7–311) and for many years it has been a widely used university textbook on crystal chemistry. Its popularity is due largely to a very lucid style of writing, which brings to students everywhere the advantages students at Cambridge have been privileged to sample first-hand at Dr. Evans's lectures. The book is divided into two parts, one on principles and the other illustrating these principles by examples. No subsequent textbooks by other authors have covered so wide a range of examples, including mineralogy, metallurgy, inorganic, and organic chemistry. As the years have passed, however, newer books have been more up to date in their discussion of principles and in their presentation and use of more recent data. It is therefore a pleasure to see a completely new, considerably enlarged edition of this book in which more modern ideas are explained and which takes account of new data.

The revision has been extremely thorough. It is clear that every topic discussed has been considered afresh and improvements have been made wherever possible. Part I has chapters on interatomic binding forces and atomic structures, and on the ionic, covalent, metallic, and van der Waal's bonds. Part II deals mainly with: the elements, simple compounds, complex ionic compounds, compounds containing hydrogen, alloy systems, and organic structures.

Among the completely new features in the second edition are: a section on wave-mechanics and the electron structure of the elements;