REVIEWS

Plate Tectonics and Crustal Evolution. By Kent C. Condie. (Pergamon Press, Inc.), 1976, pp. 380. Price: $15·00.

This excellent book covers the fields of geophysics, geology and geochemistry in a systematic manner addressing problems related to the evolution of the Crust over the past 3·5·6 years. It is a good modern text-book of plate tectonics with its implications for magma generation. The role of plate tectonics is examined in the light of geologic evidence and examples of plate reconstruction are discussed.

Chapter 1, "Introduction" is a perspective in which the approach, methods and definitions are given.

Chapter 2, "General features of the Earth" gives the necessary information for understanding Earth processes.

In Chapter 3, and Chapter 4 important information on the mantle and Crust from different sources are given.

A classical view of the geological division of the different parts of the Earth is given in Chapter 5.

The five remaining chapters, sea-floor spreading, magma associations, plate tectonics and continental drift, plate reconstructions, crustal origin and growth, are entirely devoted to explanation of the plate tectonics concept and its implications for the formation and evolution of the crust. At the end of each chapter is given a brief summary enabling a student to grasp the major issues of this complex story.

The whole book is clearly written with lucid style and shows how good a teacher Condie is. The drawings in the book are really masterly and have been well chosen. They have been reprinted without any distortion.

Condie's book, I strongly recommend to all University teachers and students in India without any hesitation eventhough a good deal in the text is devoted to the geology of the United States.

Plate tectonics has revolutionised the concepts in Geology. Kent Condie demonstrates in this book the extraordinary ability to compile, digest and re-tell a good part of the story in an understandable manner which I consider, is a rare gift to authors of books.

G. V. ANANTHA IYER.

Modern Physics and Quantum Mechanics. By Elmer E. Anderson. (The Macmillan Company of India Limited, 4, Community Centre, Naraina Industrial Area Phase I, New Delhi 110 028), 1979. Pp. xi + 430. Price: Rs. 24·75.

This book is not a substitute for some of the excellent books on quantum mechanics known for years to physicists and physical chemists. However, it can provide a bridge between the descriptive course given at the junior undergraduate level and a graduate level course in quantum mechanics for the Ph.D. students. This book may, therefore, serve as a useful text for the students of Physics at the M.Sc. level of the various Indian universities and I.I.Ts. The students of Physical Chemistry will also find this book very useful. I appreciate the initiative taken by the Macmillan Company of India for reprinting the original U.S. edition and selling them for a cheaper price in India.

The book begins with a chapter on the special theory of relativity. This is rarely found in similar books on quantum mechanics. But much of the material in this chapter contributes to the development of quantum mechanics as in the case of the next few chapters. These chapters are well written and readable for the average student. But there are a few things which are puzzling. The author has presented Feynman diagrams in page 100 without acquainting the readers with such diagrams before. In Chapter 8, no physical picture is given of the spin-orbit interaction. In Chapter 10, Hartees method for many-electron atoms is discussed but not the Hartree-Fock method which is commonly used for the treatment of the many-electron atoms and is also included in the physics curriculum for the students for whom such book is intended.

In spite of a few drawbacks, here and there, this book can certainly provide its readers with sufficient insight into the understanding of the physical behaviour of the universe on a microscopic level.

A. K. CHANDRA.

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