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Book Review

Comparative Inorganic Chemistry, by Bernard Moody, 3rd edn., Copp Clark Pitman Ltd., Mississauga, Ont., L4W 4P7, 1991. Price $51.95. ISBN 0-7131-3679-0.

The primary purpose of this book, as stated in the preface, is to assist students preparing for Advanced Level Examinations of the General Certificate of Education. This objective is supported by the inclusion of a collection of questions gathered from examination boards throughout the United Kingdom and Northern Ireland. The text is also well suited for an introductory course in inorganic chemistry.

The opening chapter presents a brief account of the development of fundamental ideas in chemistry through the 19th century. This serves as an excellent illustration of the scientific method in practice. The chapter that follows continues along the same theme, illustrating how trends in experimental data lead to the proposal of the periodic table and the prediction of elements unknown at that time. It also demonstrates how concepts which are sometimes taken to be absolutes must occasionally be revised in the face of new evidence.

The next few chapters follow a format similar to that of many other texts of the same ilk with discussions of periodic trends, atomic orbitals, quantum numbers, valency, bonding, oxidation, reduction, and electrochemical processes.

The three chapters which succeed this preliminary material outline the principles by which a number of elements may be extracted from their ores as well as the uses of these elements. Discussions of the industrial processes for many of these extraction procedures are presented in detail and are accompanied by schematics.

A complete chapter is dedicated to alloys. Aspects of the needs for alloys as well as some properties of commonly employed alloys are discussed. Another three chapters examine a variety of industrial processes. The first discusses processes based on air, water, petroleum, and coal, the next outlines the industrial production of sulphuric acid, and the third deals with the alkali industry. In each of these chapters, as well as in many other locations in the book, the environmental consequences of the production and/or use of many compounds are presented. Hazards associated with the generation of nuclear power and the processing of spent fuel are also discussed in the text. Statistics are presented to illustrate the extent of the dangers, but, in addition, efforts which are being implemented to remedy the problems are also presented.

The remainder of the book consists of several chapters of descriptive

chemistry. These chapters concentrate on the more important elements of each family, but lesser elements are also discussed when useful for illustration. Both qualitative and quantitative tests are scattered throughout this section.

Overall I found this book to be interesting and well organized. The extensive use of illustrations as well as the highlighting of keywords and phrases by italics makes this text a very practical one for students.

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