invited papers are suitable for a more general audience. In particular, W. A. Fowler's discussion of Rutherford and nuclear cosmochronology provides an excellent review of methods for evaluating the age of the universe, S. Devons considers the limitations and needs in instrumentation for nuclear physics, while papers by H. P. Noyes and R. E. Peierls present a nice summary of some of the current ideas concerning nuclear forces.

The reproduction of discussions that followed the formal papers is an extremely valuable feature of conference proceedings, and it is good to see that they are recorded in this volume. This fact alone would rate the book high on the list for nuclear theorists, and the discussions also provide an excellent opportunity for graduate students to sense something of the excitement and controversy present in this field of physics.

Unfortunately the excessive cost of these proceedings may severely limit their distribution. Graduate students in particular will probably not be able to afford them. I have fond memories of the times when such reports were distributed in mimeographed form, with paper covers, and at a nominal price.

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Contrasting Points of View

Theoretical Inorganic Chemistry. M. Clyde Day and Joel Selbin. Reinhold, New York, 1962. xiv + 413 pp. Illus. $12.

Introduction to Advanced Inorganic Chemistry. Philip John Durrant and Beryl Durrant. Wiley, New York, 1962. xv + 1171 pp. Illus. Plates. $15.50.

During the last decade, most authors of inorganic chemistry texts have attempted to cover both theoretical and descriptive aspects of the subject. M. Clyde Day, Jr. and Joel Selbin (Louisiana State University), who feel that "it is not possible to adequately treat the theoretical side with only a portion of [a] . . . textbook," have written a short and well-conceived book, *Theoretical Inorganic Chemistry*, treating fundamental principles, with only a minimum of descriptive chemistry and intended for an advanced undergraduate or a first-year graduate course. The authors are to be commended for devoting large sections to historical material, not only for humanistic reasons but also to provide a greater appreciation for theoretical concepts. Although the volume is comparable to Gilreath's *Fundamental Concepts of Inorganic Chemistry* (but written on a much higher level), it is unfortunately rendered less useful by the lack of problems or exercises. Nevertheless, instructors of one-semester inorganic courses, in which there is little time for descriptive chemistry, will do well to consider using this text.

On the other hand, when authors decide to include descriptive chemistry, they are faced with so many fascinating and diverse substances and phenomena that the initial and extremely challenging problem is that of selecting, from among these myriad items, those that convey the variety but do not obscure the underlying unity. *Introduction to Advanced Inorganic Chemistry*, a truly encyclopedic work intended to cover "the whole range of the subject up to the point beyond which its study is best followed in monographs and reviews," contains a staggering amount of material, much more than any student can master even in a full-year course. The first third of the book is devoted to the mathematics and physics that are basic to chemistry—for example, wave mechanics and atomic, molecular, and resonance spectra. The treatment is much more thorough than is customary in inorganic texts; in fact, the theoretical section in this volume is longer and more advanced than in Day and Selbin. The Durrants claim that "The mathematical treatment is kept simple," while Day and Selbin admit that their mathematical level "is somewhat higher than is customary in an inorganic textbook." Each reader will have to decide whether the Durrants are using a characteristic British understatement or whether this is a striking illustration of the difference in level of mathematical preparedness expected of English and American students.

The larger part of Durrant and Durrant treats descriptive inorganic chemistry in the light of the theoretical concepts previously discussed. The selection and organization of a tremendous amount of material has been handled in a masterful, systematic, and meticulous fashion. In view of recent accelerated activity in transition metal chemistry, one wishes, however, that the authors had achieved a better balance between transition and nontransition elements.

I do not believe the book will be widely used in this country as a text, but it will take its place as a reference work, complementing Sidgwick's *The Chemical Elements and Their Compounds* (1950), which it resembles in scope and comprehensiveness. Only its modest references and index and its neglect of a few elements (inert gases, Fr, Ra, and At) detract from its value as a reference book.

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Karl Compton Lectures

The Universe. Otto Struve. Massachusetts Institute of Technology Press, Cambridge, 1962. ix + 159 pp. Illus. $4.95.

This attractive little book is based on the Karl Compton lectures in astronomy presented by Otto Struve at Massachusetts Institute of Technology in November 1959. The six main topics covered are the origin and evolution of the solar system (34 pages), stellar evolution (35 pages), discovery and exploration of galaxies (24 pages), radio astronomy (25 pages), binary and variable stars (24 pages), and man and the universe (14 pages). There are 82 figures in the text. The standard of typography and illustration is high.

As usual, Struve's presentation is clear, lively, and interspersed with personal anecdotes and reminiscences. Much of the material has been presented many times in the innumerable books on astronomy that have flooded the market during the past few years; this is probably unavoidable, and it is not a serious defect since the intended audience is junior students and interested persons working in other disciplines.

The three best chapters, it seems to me, are those on the solar system (chapter 1), stellar evolution (chapter 2), and binary and variable stars (chapter 5). Chapter 3, on the discovery and exploration of galaxies, is mainly of historical interest.

In the final chapter, the author may have carried too far his thesis that Sputnik "completely changed the sci-