space is devoted to some particulars which will seldom, if ever, be observable by experiment.

It is not until Chapters III and IV that the significance of much of the preceding discussion will become evident to the reader who is not fully conversant with the subject. For many readers the main value of the book will lie in these chapters. In Chapter III, after an introduction to Vibration Infrared and Raman Spectra, an exhaustive and critical review is given of existing data on all molecules up to the twelve-atomic. The unsatisfactory condition of certain analyses is pointed out, and this section should prove stimulating in its suggestions for future work. Chapter IV deals with the Interaction of Rotation and Vibration and is adequately illustrated by representative examples of vibration-rotation spectra. The collections of molecular constants obtained from rotational analyses will be useful for reference. Chapter V, which concludes the book, deals with the applications of molecular spectroscopy and is comparatively brief. It may prove somewhat disappointing to certain readers. Had it been more comprehensive, the need for the book itself would have been more evident.

The scope of the book and its possible relation to future applications of spectroscopy is naturally restricted by the fact that it deals with molecules of a limited size, for which a more or less complete analysis of the spectrum can be anticipated. This is illustrated by the fact that the most significant spectroscopic investigations on intramolecular hydrogen bonding have not been mentioned, and that other qualitative, though important, applications of spectroscopy have not been covered.

It is unfortunate that it was necessary to print this book in a type which is at best too small and, in very considerable sections, so small as to be a very severe strain on the eyes.

Richard M. Badger
Gates and Crellin Laboratories of Chemistry
California Institute of Technology, Pasadena


The uranium atom, possessing as it does extraordinary chemical as well as nuclear properties, is a difficult subject for a book. The usual procedure is to stress either the ordinary chemical properties of such an element or its nuclear or radioactive properties, but not both. The present volume does not deviate in this regard. It is far more concerned with the chemical properties of the element than with the properties of its nuclei, though it pays extended attention to some of the more recent and spectacular results. One finds a considerable increase in emphasis on the atomic energy in contrasting this second edition with the first edition, which is understandable.

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On the whole, this volume is a sort of collection of bits of information about the ordinary chemical and mineralogical properties of uranium compounds, with a considerable amount of rather heterogeneous writing about the more spectacular nuclear properties of the element. The title of the volume is misleading, because little of an authoritative nature is said about atomic power.

W. F. Libby
Institute for Nuclear Studies, University of Chicago

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(Continued from p. 230)

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