ance) was published. For many years it remained the only book. In marked contrast to this situation, the past few years have seen the appearance of a large number of texts devoted to this branch of spectroscopy. In my opinion, this has been quite excessive and there has been a great deal of duplication. This has arisen largely from the publicity associated with the technique and from an unnecessary absence of co-operation between publishers. The situation is illustrated by the appearance of two review series (as listed here). Although, in principle, the Academic Press series could incorporate electron spin resonance and therefore cover a wider range than the Pergamon texts, in practice the latter field has (so far) received scant coverage (except in so far as certain basic theory is common to both nuclear and electron resonance). In the light of this, one might imagine that a co-operative production of a single series would adequately cover the subject of nuclear magnetic resonance; compare the situation with the comparatively large field known as "chemical physics" where a single review series has been adequate.

The Pergamon volume comprises five independent "chapters" (of near equal length): "Chemical Shift Calculations", by D. E. O'Reilly; "High Resolution Nuclear Magnetic Resonance in Partially Oriented Molecules", by A. D. Buckingham and K. A. McLauchlan; "Nuclear Magnetic Resonance of Paramagnetic Systems", by E. de Boer and H. van Willigen; "The Calculation of Line Shapes by Density Matrix Methods", by R. M. Lynden-Bell; and "The Cause and Calculation of Proton Chemical Shifts in Non-conjugated Organic Compounds", by R. F. Zürcher. The first four chapters are genuine review articles; the fifth, on the other hand, describes an original and interesting experimental investigation of (*a*) intramolecular factors influencing chemical shifts in rigid cyclic systems, and (*b*) solvent effects. In no sense is there overlap with the first chapter, which deals clearly and systematically with quantum mechanical calculations of chemical shifts, chiefly in small molecules. The second chapter describes the theory, method and results of a recent development, which has given a new boost to the non-analytical side of nuclear magnetic resonance. In the third chapter is presented a mixture of a readable description of typical experimental results for paramagnetic species and a more difficult section on the application of density matrix formalism to electron transfer kinetics. Like the fourth chapter, exclusively devoted to the use of density matrices in magnetic resonance, treatment of this subject will probably be too condensed for most readers. The general production of the book is commendable; each chapter is clearly subdivided and a list of contents is given. It is a pity that modern (SI) units have not been used, for example, Hz rather than c/s, J rather than erg or cal.

The Academic Press publication has four sections: "Sensitivity Enhancement in Magnetic Resonance", by R. R. Ernst; "The Chemical Shift and Other Second-order Magnetic and Electric Properties of Small Molecules", by W. N. Lipscomb; "Theory of the Chemical Shift", by J. I. Musher; and "Nuclear Relaxation in Hydrogen Gas and Liquid", by J. M. Deutch and I. Oppenheim". The first section is considerably longer than the others, occupying about half of the book. This, however, has permitted the author to present a delightfully clear account of his subject. Taking the Pergamon and Academic Press publications together, this article must take first prize for clarity. The second section is principally a description of the calculation of magnetic susceptibilities, shielding coefficients and spin-rotational constants for diatomic molecules using SCFLCAO wavefunctions. The third section develops the theory of chemical shift in an authoritative fashion and indicates in an interesting and critical way how this has been applied. The well known ring-current theory for aromatic systems is strongly criticized and the whole philosophy of calculating chemical shifts is questioned. As with the second section (with which there is no significant overlap), there is a good balance of material between appendices and remaining text. The fourth section is a quantitative treatment of the Oppenheim–Bloom theory of nuclear spin relaxation, particularly as applied to assemblies of hydrogen molecules, with and without inert gas contaminants.

The text by R. H. Bible is aimed at a completely different audience from the other two volumes. Whereas the latter are directed at the magnetic resonance spectroscopist interested in the fundamentals of his subject, the former is intended for the organic chemist wishing to use high resolution nuclear magnetic resonance to analyse his products. The book presents some hundred ^1H spectrograms on left pages. On corresponding right pages are then given (*a*) other known information (including integrated band intensities), and (*b*) a small number of questions to be answered by the reader. The spectra are subdivided into nine sections, at the beginning of each of which is a list of references taken from standard texts. Answers to the problems are presented in some detail towards the end of the book. Cross-referencing and indexing are very good. There are several other texts which adopt this kind of approach to the teaching of applied nuclear magnetic resonance (either in this field alone or together with other branches of spectroscopy).

This book can be recommended to organic chemists wishing to use nuclear magnetic resonance in chemical analysis, but not wishing to delve deeply into theoretical fundamentals.

J. LEE

ORGANOHALOSILANES

Organohalosilanes

Precursors to Silicones. By R. J. H. Voorhoeve. Translated from the Dutch. Pp. xiv + 423. (Amsterdam, London and New York : Elsevier Publishing Company, 1967.) 145*s*.

THERE is a trend to produce larger and larger monographs on smaller and smaller subdivisions of chemistry. Here is a classical example. In 423 pages the author covers, with little deviation, the subject of halogenosilanes. That such a specialist topic justifies a whole book to itself is, however, amply illustrated by the quotation of nearly two and a half thousand literature references in the text.

The bulk of this volume is taken up by a very full discussion of the direct synthesis of the organohalogenosilanes, which are of such immense importance to the silicone and related industries. In addition, adequate accounts are given of what is known of the kinetics and mechanisms of these processes.

A chapter on the physical and chemical properties of organohalogenosilanes forms a commendable résumé of interesting organosilicon compounds obtained by way of these intermediates; and the closing chapters on industrial and analytical aspects of the field are particularly readable and interesting.

While the book is a "must" for organosilicon chemists, it deserves note from a wider body of readers. Thus, for example, organometallic chemists exploring the now rapidly expanding field of metal-to-silicon bonds will find a wealth of useful material here.

The book is virtually devoid of typographical errors; the references are made easy to find by a note at the base of each page; and a very good subject index makes for easy information retrieval.

The author (and translators) are to be complimented on producing such a readable account of such an involved topic.

EDWARD W. ABEL