books concerning the vibrational analysis of inorganic compounds were judged. Thus, the appearance of this fourth edition (yes, it really is nine years since the third edition was published) is a welcome addition to the library shelves. Of course, all the regular features are there: the opening section remains the definitive treatment of the theory of normal vibrations, the second section describes the vibrational analysis and spectra of simple inorganic compounds of stoicheiometry XY_n ($n = 2$, 3, 4, 5, 6, 7 or 8) and X_2Y_m ($m = 4$, 6, 7, 8, 9 or 10), and the third concentrates on the vibrational spectra of complexes of a wide range of common ligands (including ammines, amines, pyridines, bipyridines, porphyrins, water, alcohols, carboxylic acids, amino acids, carbonates, 1,3-diketonates, cyanides, CO, NO, N_2, O_2, hydrides, phosphines and Group 16 donor ligands) and metal–metal bonded species. The (rather short) organometallic section (only 36 pages) is surprisingly little changed since the third edition, and contains only a handful of post-1980 references. The new and final section is devoted to bioinorganic compounds, but this again is brief (35 pages), citing only 96 references. Indeed, with the exception of this last interesting and useful section and the new cover, one could be forgiven for believing that this volume has not evolved significantly since the previous edition. There are undoubtedly new references (particularly in the section on coordination compounds), but the overall impression is of déjà vu.

I'm afraid that this edition is rather disappointing; maybe it's because one's expectations are so high. The experience of reading this book may be compared with meeting an old friend from your undergraduate days, ten years on: you look forward to the meeting, and indeed enjoy the first hour of reminiscence, but by the end of the evening you are wondering why he hasn't matured, grown and changed with the times. Nakamoto now appears decidedly old-fashioned, and some of the sparkle has gone. The new edition (with the exception of the last section) is updated rather than rethought and developed. It is still valuable, but no longer invaluable. The recent book by Weidlein, Müller and Dehnicke ("Schwingungsfrequenzen II: Nebengruppenelemente", Georg Thieme Verlag, Stuttgart, 1986) will, I am sure, become more dog-eared than the new edition of Nakamoto (albeit serving a very different purpose). Nakamoto remains very good value for money, exceptionally well written, and an excellent text for graduate students. However, Lever's recent edition of "Inorganic Electronic Spectroscopy" (Elsevier, Amsterdam, 1984) has shown the pinnacle to which follow-up editions can aspire; it was more of a companion volume than an update. I hope that the fifth edition of Nakamoto will reach similar heights but, even if the fourth edition is a little disappointing, it must still be considered as the standard book upon vibrational analysis for inorganic chemists.

School of Chemistry and Molecular Sciences,
University of Sussex, Brighton BN1 9QJ (Great Britain)

KENNETH R. SEDDON

Structural Chemistry of Boron and Silicon. Springer, Berlin, Heidelberg, 1986, 195 pages. DM 118.00. ISBN 3-540-15811-1.

The main chapter (91 pages) in this monograph (Volume 131 of the series *Topics*

in Current Chemistry) is on "Molecular and Electronic Structure of Penta- and Hexa-coordinate Silicon Compounds", by St. N. Tandura, N.V. Alekseev, and M.G. Voronkov, and a good one it is. There have been so many (largely repetitive) reviews on aspects of extra-coordinate silicon compounds, especially silatranes and related species, in recent years that yet another might seem unwelcome, but this one is unusually well organized. It adopts a refreshing, somewhat selective, approach in which more general features and concepts are sought, but a massive amount of factual information is also presented, in tabular form, in a fairly small amount of space.

After an interesting introduction, including a brief discussion of the theoretical aspects of an increase in the coordination number at silicon, five- and six-coordinate silicon compounds are discussed under the headings stereochemistry, stereodynamics, quantum-chemical calculations, X-ray and electron diffraction data, and NMR data. Literature coverage in the main text extends to the end of 1983, but there is an additional list of relevant 1984 and 1985 references, bringing the total number of references to 1008. For those interested in this field, this could well be the best source to look to first for information and guidance.

Another chapter (37 pages), by K. Niedenzu and S. Trofimenko, is on "Pyrazole Derivatives of Boron", and is a well-presented comprehensive survey which will be of particular value to boron chemists but also of some interest to a range of other organometallic chemists in view of the ready formation of complexes containing $[RB(py^*)_3]^-$ ions (where py^* denotes a pyrazolyl group, often substituted) linked to a main group or transition metal.

The remaining chapter (60 pages) consists of a "Survey of Structural Types of Borates and Polyborates", by G. Heller. It is very largely a comprehensive list, with references (totalling 568), of all the known relevant species, from the simplest such as $B(OH)_4^-$ to higher borates such as $[B_{10}O_{30}]^{30-}$ and $[B_{19}O_{31}]^{5-}$.

Overall this is a worthy addition to a well-regarded series, and can be warmly recommended.

School of Chemistry and Molecular Sciences,
University of Sussex, Brighton BN1 9QJ (Great Britain)

COLIN EABORN