The Structural Chemistry of Phosphorus; by D.E.C. Corbridge, Elsevier, Amsterdam-London-New York, 1974, xiii + 542 pages, Dfl. 250.00, US$ 96.20.

Even at to-day's inflated prices, this is a very expensive book and as such is clearly intended mainly as a library reference work. The book is an extension and up-date of the author's earlier review on the same subject (Topics in Phosphorus Chemistry, 3 (1966) 57) and consists essentially of a comprehensive compilation of X-ray structure determination of phosphorus compounds. It includes 2649 references to the original literature. Unfortunately no completion date is given for the literature survey, an important and all-too-frequent omission in reviews of this type, but study of the bibliography suggests it is complete for 1972 with a few references from early 1973. The author has retained the style of an extended review and in fact much of the material and many of the figures are taken almost unchanged from the earlier article. The emphasis is on classification and tabulation and there is very little attempt to present discussion or theoretical interpretation. An example here is the complete omission from the chapter on coordination complexes, of any discussion of *trans*-influence effects on metal—phosphorus bond lengths. This, despite the inclusion of a five page tabulation of M—P bond lengths!

The coverage of the book is very similar to that of the earlier review with seven chapters on purely inorganic aspects of phosphorus chemistry (the element, phosphides, chalcogenides, phosphates, oxyacids, hydrides, nitrides, halides, etc), two chapters on organophosphorus compounds (esters and substituted phosphates) and single chapters on coordination complexes, phosphonitrilics, isomerism and optical activity, ring molecules, and cage structures. The material is well organised and it is relatively easy to locate specific information. There are many valuable tabulations of structural data of which Appendix I is likely to prove the most useful, it being a referenced list (with unit cell and space group parameters) of all the crystal structures described. Although some references to structural results obtained by methods other than X-ray are included in the book, the coverage is often not sufficiently comprehensive to be very useful. For example, the table of ^{31}P chemical shifts contains only 40 entries. These are not referenced and none of them are coordination complexes. There is no coupling constant data in the book.

In summary, this is a good source book of references to crystal structures of phosphorus compounds and probably should find a place in most libraries. One wonders, however, whether an up-date of the author's 1966 review could not have been achieved at considerably less expense by means of another review article.

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