

formation and crystallization. The treatment accorded various aspects is uneven but reflects the authors' long involvement with the application of thermodynamic concepts to the formation and hydration of Portland cements and their environmental and degradative reactions. The tables and appendices give data on cements much of which is not readily accessible elsewhere. The authors have successfully pioneered a thermodynamic approach to those materials, but it is perhaps unfortunate that this exposition is a little out of date with respect to advances in other relevant areas, for example in determinations of phase equilibria in the relevant systems. Despite these shortcomings its exposition of the methodology of thermodynamics deserves widespread readership and its unique contents will ensure that it becomes a standard reference work in the field.

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#### Books Received

*The following books have been received by the Editor. Brief and generally uncritical notices are given of works of marginal crystallographic interest; occasionally a book of fundamental interest is included under this heading because of difficulty in finding a suitable reviewer without great delay.*

**Methods and applications in crystallographic computing.** Papers presented at the International Summer School on Crystallographic Computing held at Kyoto, Japan, 18–27 August 1983. Edited by S. R. HALL and T. ASHIDA. Pp. ix+506. Clarendon Press, Oxford, 1984. Price £25.00. A review of this book, by Peter S. White, has been published in the November 1985 issue of *Acta Crystallographica*, Section A, p. 621.

**Structure determination by X-ray crystallography.** 2nd edition. By M. F. C. LADD and R. A. PALMER. Pp. xxii+502. New York: Plenum, 1985. Price US \$39.50. This book was reviewed, when its first edition appeared in 1977, by G. B. Carpenter [*Acta Cryst.* (1978), B34, 1400]. The second edition does not differ from the first in general character (it still makes use of many examples, treated in close detail, and it still includes some 100 or so problems, and their solutions) but it has been judiciously expanded in selected parts. Thus, direct methods, previously covered in about 15 pages, now run to nearly 40 pages; a new section (10 pages) on Patterson search methods is included, and there are quite a number of new appendices. The nett effect is an increase of about 100 pages (25%). The corresponding increase of the price, \$4.50 (13%), must surely be, in effect, a significant decrease, when eight years of inflation are

considered. While all this is laudable, there will be some disappointment that the opportunity for up-dating was not better used. The four-circle diffractometer, now employed all over the world for hundreds of structures annually, is still confined to an appendix; synchrotron radiation is now mentioned but, despite its superlative value for structure determinations, especially for biological macromolecules, is given less than a page. However, this book is primarily a teaching text, addressed to beginners and raw research students, telling them how-to-do-it. Thankfully, the price is not now as much beyond their purse as it was before.

**Optical mineralogy.** 2nd edition. By D. SHELLEY. Pp. xvii+321. Amsterdam: Elsevier, 1985. Price US \$37.50, Dfl 120.00. This book is the revised, expanded version of the author's original *Manual of Optical Mineralogy*, published ten years ago and reviewed then by G. Hornung [*Acta Cryst.* (1977), A33, 348]. This edition is some 50% larger than the first: more detailed attention is given to underlying theoretical principles; some step-by-step exercises are inserted; and there is a valuable (though highly condensed) new section of small-sized colour plates with commentary, as well as other additions, and updating. The price is still somewhat high.

**Problems in inorganic and structural chemistry.** By T. C. W. MAK, K. Y. HUI, O. W. LAN and W.-K. LI. Pp. viii+278. Hong Kong: The Chinese University Press. (Also available from European Book Services, Flevolaan 36-38, 1380 AC Weesp, The Netherlands.) Price US \$11.50. Not a crystallography related text but an interesting book which could surely be useful in teaching, at honours level, in University chemistry courses. It covers orbitals, molecular geometry, crystal field, vibrational spectroscopy (not NMR), reaction mechanisms and also crystal structure, and it consists not of text but simply problems, and their solutions: about 30–40 in each of the ten chapters.

**Biological regulation and development.** Vol. 3B. **Hormone action.** Edited by R. F. GOLDBERGER and K. R. YAMAMOTO. Pp. xiii+312. New York: Plenum, 1984. Price US \$140.00.

**Phosphorus: an outline of its chemistry, biochemistry and technology,** 3rd ed. By D. E. C. CORBRIDGE. Pp. x+761. Amsterdam: Elsevier, 1985. Price US \$157.50, Dfl 425.00.

**The chemistry of the metal-carbon bond.** Vol. 2. **The nature and cleavage of metal-carbon bonds.** Edited by F. R. HARTLEY and S. PATAI. Pp. xiii+904. Chichester: John Wiley, 1985. Price £155.00.

**The chemistry of the metal-carbon bond.** Vol. 3. **Carbon-carbon bond formation using organometallic compounds.** Edited by F. R. HARTLEY and S. PATAI. Pp. xiv+489. Chichester: John Wiley, 1985. Price £98.00.

**Tunable solid state lasers.** Edited by P. HAMMERLING, A. B. BUDGOR and A. PINTO. Pp. viii+203. Berlin: Springer, 1985. Price DM 83.00.