express opinion on unresolved problems; as a result, the reader may find it disappointing in parts to have his interest aroused only to find that several references must be followed up to obtain more information. This is not a criticism. It is a statement intended to emphasize to would-be purchasers that this text is a first-class reference and source book of information, and not an easy-to-read text presenting all factual, experimental, theoretical, or technical detail.

Again, because of the completeness of coverage in the text, a fully comprehensive index would have been difficult to compile. The relatively short index of ten or eleven pages is therefore somewhat limited in scope, but this is compensated for by clear and specific chapter headings, each with a well defined and easily scanned list of sub-topics. Generally, therefore, the location of information relevant to a particular point can be found quite quickly.

The fifteen chapters cover the following main areas: Introductory material and textures; Chemical constitution; Theory of the liquid-crystalline state; Magnetic and electric field effects; Studies using X-ray, neutron, and other forms of radiation; Optical properties; Thermodynamic properties; Liquid crystals in GLC; NMR and ESR studies; Lyotropic mesomorphism; Living systems; Polymers; Technical applications. An additional listing of reviews, books and symposia is also of value.

Whilst not a beginner's text, it is difficult to see how any individual or group of individuals carrying out research on or using liquid crystals can now afford not to have access to this most valuable contribution to the list of books on liquid crystals. Though young research workers often choose to ignore the early literature on a subject, those who are more experienced know the folly of this. This *Handbook of Liquid Crystals* therefore represents something of an investment, since it will not date in its function of providing an excellent source of references up to about 1977.

In the latter respect, this review would not be complete without reference to the fact that the handbook is written with wisdom in relation to the early literature on the subject. This stems from Professor Kelker's long-standing studies of, and interest in, the history of liquid crystals, and it is relevant that the dust cover portrays electric-field effects in a cholesteric liquid crystal – of great importance to present-day technology – as observed by Lehmann in 1889!

Finally, the publishers have done a good job on the presentation of the book. The paper is of good quality, the print style is clear, figures and diagrams are excellent, and the binding should stand-up to the handling a reference text must endure.

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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.

The nature of the surface chemical bond. Edited by T. N. RHODIN and G. ERTL. Pp. xii + 405, Figs. 105, Tables 22. Amsterdam, New York, Oxford: North-Holland Publishing Company, 1979. Price US $58·50, Dfl 120·00. A review of this book, by H. Beens, has been published in the November issue of *Acta Crystallographica*, Section A, page 1093.

Electron and magnetization densities in molecules and crystals. Edited by P. BECKER. Pp. xiii + 904. New York, London: Plenum Press, 1980. Price US $75.00. A review of this book, by D. Feil, has been published in the November issue of *Acta Crystallographica*, Section A, page 1092.

Organometallic chemistry reviews: annual surveys: silicon, germanium, tin, lead. Edited by D. SEYFERTH and R. B. KING. Pp. 614. Amsterdam: Elsevier, 1980. Price US $119.00, Dfl 245.00.

Phosphorus: an outline of its chemistry, biochemistry and technology (2nd ed.). By D. E. C. CORBRIDGE. Pp. x + 560. Amsterdam: Elsevier, 1980. Price US $95.00, Dfl 195.00. Next to carbon, hydrogen, oxygen and nitrogen, phosphorus is perhaps the most interesting of all the elements, in regard to the chemistry of life. It is also an element of great importance technologically and industrially. This book now in its second edition, is a fairly concise, yet remarkably comprehensive and well-referenced survey of all aspects of the chemistry of phosphorus. The techniques of X-ray diffraction do enter into this subject but are summarized here in a single page.

Petrology and genesis of leucite-bearing rocks. By A.-K. GUPTA and K. YAGI. Pp. xv + 252. Berlin, Heidelberg, New York: Springer, 1980. Price DM 69.50, US $41.00.