SHORT COMMUNICATIONS

Contributions intended for publication under this heading should be expressly so marked; they should not exceed about 1000 *words; they should be forwarded in the usual way to the appropriate Co-editor; they will be published as speedily as possible.*

Acta Cryst. (1987). B**43**, 302

The refinement of the haemagglutinin membrane glycoprotein of influenza virus. Addendum.

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(*Received* 14 *January* 1987)

Abstract

Atomic coordinates and structure factors for this paper have been deposited with the Protein Data Bank, Brookhaven National Laboratory (Reference: 1HMG, R1HMGSF), and are available in machine-readable form from the Protein Data Bank at Brookhaven or one of the affiliated centers at Melbourne or Osaka. The data have also been deposited with the British Library Document Supply Centre as Supplementary Publication No. SUP 37018 (3 microfiche). Free copies may be obtained through The Executive Secretary, International Union of Crystallography, 5 Abbey Square, Chester CH1 2HU, England. At the request of the authors, the list of structure factors will remain privileged until 1 September 1990.

All relevant information is given in the *Abstract.*

Acta Cryst. (1987). B**43**, 302

A revision of van der Waals atomic radii for molecular crystals. Erratum.

By S. C. NYBURG AND C. H. FAERMAN, *Department of Chemistry, University of Toronto, Toronto, Canada M*5*S* 1*A*1

(*Received* 19 *March* 1987)

Abstract

The equation given as a footnote to page 277 of the paper by Nyburg & Faerman [*Acta Cryst.* (1985), B**41**, 274-279] should read $d_{xx} = 2ab[(a^2 \cos^2 \omega + b^2 \sin^2 \omega)^{-1/2}]$.

All relevant information is given in the *Abstract.*

Book Reviews

Works intended for notice in this column should be sent direct to the Book-Review Editor (J. H. Robertson, School of Chemistry, University of Leeds, Leeds LS2 9JT, England). As far as practicable books will be reviewed in a country different from that of publication.

Acta Cryst. (1987). B**43**, 302-303

Mixed crystals. Springer series in solid state sciences, Vol. 33.

By A. I. KITAIGORODSKY. Pp. xiv+388. Berlin: Springer-Verlag, 1984. Price DM 120, US $45.00.

Not all English-speaking scientists concerned with crystal-packing problems are necessarily familiar with the earlier Russian crystallographic literature, but the publication in 1961 of the translation of Kitaigorodsky's *Organic Chemical Crystallography* certainly ensured that the author's name would be known, and that any subsequent book written by him would be read with interest. It has always been instinctive to organic crystallographers that molecules must pack together comfortably; Kitaigorodsky systematized this concept, and laid the foundation for the quantitative studies now known as molecular-packing analysis. If Kitaigorodsky's contribution to the further development of these ideas is less exclusive than his subsequent works tend to claim, this is no more than the license due to a great scientist who is active in many fields. His subsequent *Molecular Crystals and Molecules* was a useful summary but represented no real advance beyond what was well known and was ultimately a little disappointing. What then

0108-7681/87/030302-01$01.50 © 1987 International Union of Crystallography

of this latest work, extending the scope further to *Mixed Crystals*?

As would be expected it is a most competent work, which all with an interest in packing problems will wish to have on their bookshelf. Just when they might use it, or to whom they might recommend it, is another question. There is something in it for everyone, but whether there is enough in it for anyone will be the factor which decides its ultimate value.

The book falls into various sections. The first covering basic theory on phase diagrams, principles of crystal packing, free-energy considerations, X-ray diffraction, will be skipped by the expert and may be a little indigestible for the beginner. The next provides an excellent summary of intermetallic compound types, and then moves on to discussion of solid solutions, where something exciting appears about to emerge, but never quite does. A change then, to disorder and solid solutions in organic crystals, and again a most useful summary of those systems that have been studied experimentally. And finally the theme moves to more familiar topics, molecular complexes, polymers and inevitably to biological macromolecules. A brave thesis to try to tie so much together around the central topic of solid solutions, but it does not quite come off. The central chapters on mixed solid-sate systems *per se* are by far the most interesting and will be those most studied.

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Acta Cryst. (1987). **B43**, 303-304

The metallic and nonmetallic states of matter. Edited by P. P. EDWARDS and C. N. R. RAO. Pp. x+427. London: Taylor & Francis, 1985. Price £40.00.

This is not, as one might imagine from the title, a treatise written by one or two authors, but a collection of 13 reviews dealing with aspects of metal-nonmetal (*M-NM*) transitions, or with various classes of materials in which *M-NM* transitions occur. The volume is ascribed to Sir Nevill Mott, FRS on the occasion of his 80th birthday. It begins with a delightful and readable article of 21 pages by Sir Nevill which discusses the development of the subject; thereafter follow the 13 review chapters that involve 20 authors.

These reviews will no doubt be pure delight to the experts in the field, such as the 20 authors undoubtedly are, because of their detailed coverage of the subject and the copious and up-to-date references (some 34 pages thereof up to 1985); however, the general reader - and I review the book for readers of *Acta Crystallographica* - will probably find much of the book exceedingly tedious.

This is because the 13 chapters are written in 'review' style - and 13 review-style chapters on the same subject are too much for the general reader to stomach. Thus the basic tenets of the subject tend to be treated over and over again from the point of view of the various authors - a reader will even find the same figure given twice in the book, and the same material (*e.g.* $La_{1-x}Sr_xVO_3$) treated more than once in detail in different reviews. The worst of the reviews are little more than a catalogue of what various literature authors have done. Thus one reads a succession of sentences (or better, paragraphs) followed by a list (references) of authors to whom the thoughts or measurements are to be ascribed, whereas the general reader would hope for an authoritative coherent exposition of the subject, as understood by the writers of the chapters, in relation to the class of materials being discussed.

Now *the reviewer* is well aware of the difficulty that this poses for *the writer*, who feels (i) he must be complete in his coverage and (ii) properly ascribe credit where it is due and not present the ideas of others as his own. However, surmounting these difficulties is of the essence in writing successful books and reviews. For example the method of giving references in the text - by authors' names, followed by the year - exacerbates the problem for the general reader. Had the references in the text been given by successive numbers in parentheses, super, they would have intruded to a far less extent on the reading, and the 'catalogue' aspect of a number of the reviews would have been diminished. It is also possible that more editorial control in eliminating repetitions might have helped a general reader.

The second chapter surveys theoretical analyses of features of *M-NM* transitions, considering particularly the 'Mott transition' which is a correlation-induced *M-NM* transition and the 'Anderson transition' which is a disorder-induced *M-NM* transition. The next chapter discusses the Periodic system of the elements and general theories of the metallic and non-metallic states ending with several pages of discussion of the Herzfeld-Goldhammer theory of metallization. Next follow chapters dealing with the *M-NM* transition (i) in expanded metals (*i.e.* fluid metals near the liquid-vapour critical point), particularly discussed are properties of the alkali metals and mercury; (ii) in ammonia and methylamine solutions of the alkali metals; (iii) in metal-metal halide melts. Here the materials discussed are alkali metals in their halides, mercury in its halides, bismuth in its halides and liquid ionic alloys such as the Cs-CsAu system; and (iv) in doped semiconductors such as the Si:P system, $Gd_{3-x}V_xS_4$ and *n*-InSb. Particularly discussed is driving a single experimental sample through the *M-NM* transition by applying either stress or a magnetic field.

Next comes a chapter discussing quasi-one-dimensional organic conductors and conducting polymers. This is followed by an interesting chapter discussing the Mott transition for binary compounds with particular emphasis on NiS_2 and $Ni(S_{1-x}Se_x)_2$. Transitions in selected transition-metal oxides are the subject of the next chapter. This concentrates particularly on oxides derived from V_2O_3 by substitution, and on the transition in Fe_3O_4.

The next two chapters deal with *M-NM* transitions in (i) oxide bronzes and (ii) perovskite oxides. The former considers more crystallographic information than most of the chapters. The thirteenth chapter discusses cerium under high pressure and the final chapter discusses electrons in small metallic particles. Here the concern is with metal clusters in carbonyls, pure-metal aggregates (10-100 Å diameter) and small metallic particles (10^2-10^4 Å diameter) which the reviewer found refreshingly interesting.

Although some of these chapters indicate features of crystallographic interest, by and large they are unlikely to