

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 LS 2 9 JT, England). As far as practicable books will be reviewed in a country different from that of publication.

Writing scientific papers in English. By M. O'CONNOR and F. P. WOODFORD. Pp. vii + 108, Figs. 9. Amsterdam: North-Holland, 1975. Price: £21.00 (about US \$7.95).

This book could have quite an important influence upon the standard of presentation of scientific work. It gives advice about all aspects of writing papers for publication; although it is aimed particularly at foreigners writing in English, most English-speaking writers could learn a great deal from it as well. The fact that it is primarily directed at biologists does not in the least detract from its usefulness to physical scientists, and, if the authors of papers presented to this Journal were to accept the instructions given, the task of the Editors of this Journal would be made much easier. (For example, it is stressed that typing should be double-spaced – a request in our *Notes for Authors* that is largely ignored.)

The chapters are all very useful and could hardly be bettered. Instructions are given clearly and concisely and in unpretentious language. Grammar is treated only briefly, but the points made are those that the authors consider particularly important; we should, however, have welcomed a longer discussion of the use of hyphens, which we think could make some scientific writing a great deal less mystifying than it often is. Since English makes much use of nouns as adjectives, it is often not clear, except to the expert, what group of words is acting as an adjective to qualify a noun later on.

The only doubt that we have about the book is that it seems to make the writing of a paper almost impossibly difficult. The number of steps recommended is large; in an appendix 27 such steps are listed leading to the presentation of a manuscript. A new author may well be led to believe that his work cannot really be worth all this effort!

One chapter, however, that is of undoubted use is that on typing. This will be of great help to any typist who is relatively new to the task of preparing a satisfactory scientific manuscript.

Appendix 5 (*Expressions to avoid*) is well worth while studying. It is particularly interesting to see the words 'anticipate' and 'sophisticated' in the 'avoid' column, as these are so often used in the wrong sense.

On the whole, we think that the book should be used as a reference book rather than as a manual. In other words, we think that an author should prepare his work as he thinks best, turning to the book only when he is not sure what to do. Otherwise, he might find that he has spent so much time thinking about the presentation that he has forgotten about the contents!

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International tables for X-ray crystallography. Vol. IV. Edited by J. A. IBERS and W. C. HAMILTON. Pp. xi + 366, Figs. 10, Tables 39. Birmingham: Kynoch Press, 1974. Price £ 10.

Volume IV of *International Tables* contains updated values for much of the numerical information in Volume III and also extra material concerning certain aspects of crystallography which have been extensively developed since the earlier volumes were published. The choice of the latter topics was partly due to the personal preferences of the editors and although important topics have been omitted, crystallographers will welcome the authoritative treatment of important subjects which is presented in the later sections.

Section 1 contains tables of X-ray wavelengths, one collated according to the atomic number of the elements and a second table collated in increasing wavelength. This section gives a much more extensive tabulation than is found in Volume II.

Section 2 begins with tables of X-ray cross sections and attenuation coefficients. These are followed by tables of X-ray scattering factors. New in this volume are a table of coefficients for an analytical approximation to the scattering factors giving maximum and mean errors, and a table of X-ray scattering factors of unfilled orbitals which may be used for aspherical atoms. The table of dispersion corrections for X-ray scattering factors gives what are apparently more accurate values than in Templeton's tabulation in Volume III, but no indication of accuracy or variation with $\sin \theta$ is given. The electron scattering factor tables are much more extensive than in Volume III, occupying more than one hundred pages.

Section 3 is devoted to diffractometer geometry. A series of excellent sub-sections by the late W. C. Hamilton deals with the mathematical aspects of the calculation of setting angles, the determination of an orientation matrix and measurement procedures.

Section 4 by the same author, gives a table for *R*-factor ratio significance tests and tables for analysing least-squares weights for consistency. The accompanying discussion is very valuable.

Section 5 contains mathematical articles by C. K. Johnson and H. A. Levy on the thermal motion of independent atoms and rigid bodies. The correction of interatomic distances and angles for thermal motion is also covered. A final sub-section deals with the site symmetry restrictions on the coefficients of thermal-motion tensors.

In Section 6, J. Karle discusses the solution of the phase problem by direct methods. Tables for assisting origin specification along with examples of choices of phases for the different space-group types are included. The following two sub-sections include discussions on the normalization of structure factors and phase-determining formulae. The final sub-section discusses the symbolic addition method of application of these formulae in X-ray and neutron diffraction. It is a pity that greater recognition is not given to the computer applications of the formulae that have