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**Notes for authors: anisotropic parameters.** By D. W. J. CRUICKSHANK, *Chemistry Department, University of Glasgow, Glasgow, W. 2, Scotland*

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The January 1965 issue of *Acta Crystallographica* contains an admirable list of *Notes for Authors* (p. 134), but nothing is said about the tabulation of the parameters occurring in the anisotropic exponential. Many structure analyses are still being reported with tables of the  $\beta_{ij}$  occurring in the term

$$\exp(-\beta_{11}h^2 + 2\beta_{12}hk + \dots).$$

There are two quantities which are much more informative than the  $\beta_{ij}$ ; either the  $B_{ij}$  analogous to the isotropic Debye  $B$ , or preferably the mean-square-amplitude tensor  $U_{ij}$ . The relations are

$$\beta_{12} = 2\pi^2 U_{12} a^* b^* = B_{12} a^* b^* / 4.$$

A table of the  $\beta_{ij}$  gives no immediate idea either of the

magnitude of the motion (and/or disorder) or of the degree of anisotropy.

It is no defence of the practice of publishing the  $\beta_{ij}$  to say that they may be meaningless because of the possibility of gross systematic errors in the  $|F_o|$ . If the  $\beta_{ij}$  really are meaningless they should not be published at all. Of course, it is not uncommon for there to be some proper doubt about their precise values and in such a case a cautionary remark will be needed in the text of a paper. Such a remark will serve equally well with a table of the  $U_{ij}$ . Indeed, indications of any unreliability in the anisotropic parameters are more likely to be given by the  $U_{ij}$  than by the  $\beta_{ij}$ .

Care is also needed about the factor of 2 in the cross-terms. Sometimes it is not clear in the sense of the above definitions whether tables contain  $\beta_{12}$  or  $2\beta_{12}$ , or  $U_{12}$  or  $2U_{12}$ .

## Notes and News

*Announcements and other items of crystallographic interest will be published under this heading at the discretion of the Editorial Board. The notes (in duplicate) should be sent to the General Secretary of the International Union of Crystallography (D. W. Smits, Rekencentrum der Rijksuniversiteit, Grote Appelstraat 11, Groningen, The Netherlands). Publication of an item in a particular issue cannot be guaranteed unless the draft is received 8 weeks before the date of publication.*

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## Book Reviews

*Works intended for notice in this column should be sent direct to the Editor (A. J. C. Wilson, Department of Physics, Georgia Institute of Technology, Atlanta, Georgia 30332, U. S. A.). As far as practicable books will be reviewed in a country different from that of publication.*

**Snow crystals.** By W. A. BENTLEY and W. J. HUMPHREYS. New York, Dover Publications Inc. 1962. \$3.00.

The original edition of this book was published by McGraw-Hill Book Co. in 1931 and has long been out of print. It consists largely of reproductions of photographs of snow crystals taken by W. A. Bentley, an enthusiastic amateur observer, at his home in Jericho, Vermont. The selection of the crystals to be included was made by W. J. Humphreys,

the meteorologist and author of the book *Physics of the Air*, who also wrote a short introduction explaining how the photographs were taken and discussing what was then known about the crystallography of ice. This is now out of date, though many of the problems raised that were thought to have been solved somewhat later have now been reopened by more recent work, but the main value of the book clearly lies in the large number of beautiful photographs of snow crystals, well over 2,000 of them, and the