integer, M = total number of cylindrical layers, N = total number of atoms in each arc.

The second type of stacking is characterized by variability of interlayer spacings having a structure similar to that discussed by Wilson (1962) and studied by Mitra & Bhattacherjee (1969). In this defect model the interlayer distance between successive cylindrical layers will be the radial repeat distance b. If g is the mean fractional change in the interlayer distance in the $\mathbf{b}$ direction and α_c is the probability of such change taking place, then replacing b by $b(1 + g\alpha_c)$, equation (2) can be written when both the faults are present as

$$\begin{aligned} I(hkl_0) = {} & T^2 N \sum_{m=0}^{M-1} \sum_{n=0}^{M-1} J_0 \Bigg[QNh \left(1 - \frac{l_0^2}{r_1^2 h^2}\right)^{1/2} \\ & \times \{[1 + mr_2(1 + g\alpha_c)\varphi]^2 + [1 + nr_2(1 + g\alpha_c)\varphi]^2 \\ & - 2[1 + mr_2(1 + g\alpha_c)\varphi][1 + nr_2(1 + g\alpha_c)\varphi] \\ & \times \cos(W_m - W_n)\varphi/2\}^{1/2} \Bigg] \\ & + T^2 \sum_{m=0}^{M-1} \sum_{n=0}^{M=1} \sum_{q=1}^{N-1} (N-q) \Bigg[J_0 \Bigg(QNh \left(1 - \frac{l_0^2}{r_1^2 h^2}\right)^{1/2} \\ & \times \{[1 + mr_2(1 + g\alpha_c)\varphi]^2 + [1 + nr_2(1 + g\alpha_c)\varphi]^2 \\ & - 2[1 + mr_2(1 + g\alpha_c)\varphi][1 + nr_2(1 + g\alpha_c)\varphi] \\ & \times \cos(2q + W_m - W_n)\varphi/2\}^{1/2} \Bigg) \\ & + J_0 \Bigg(QNh \left(1 - \frac{l_0^2}{r_1^2 h^2}\right)^{1/2} \{[1 + mr_2(1 + g\alpha_c)\varphi]^2 \\ & + [1 + nr_2(1 + g\alpha_c)\varphi]^2 \\ & - 2[1 + mr_2(1 + g\alpha_c)\varphi][1 + nr_2(1 + g\alpha_c)\varphi] \\ & \times \cos(2q - W_m + W_n)\varphi/2\}^{1/2} \Bigg) \Bigg] \end{aligned} \tag{3}$$

where $r_1 = c/a$ and $r_2 = b/a$.

Equation (3) reduces to equation (16) of Mitra & Bhattacherjee (1971) when $W_m = W_n = 0$ and $g = 0$ as expected. Numerical computations for typical cases have been carried out. Fig. 1 illustrates the general pattern of the curves for three cases. Results of the calculations have also been compared with those of Bhattacherjee & Mathur (1974) and Mitra & Bhattacherjee (1971) for cylindrical crystallites without defects. It is observed that the general pattern is more or less of the same form in the three cases, although the comparison of curves 1, 2 and 3 suggests that the relative heights vary with the order of the peak. The heights of the second and third-order peaks of curves 1 and 2, particularly 1, appear to have increased compared with that of curve 3. A more detailed study of the change due to the variation of parameters in the intensity pattern is in progress.

References

Bhattacherjee, S. & Mathur, B. K. (1974). *Indian J. Pure Appl. Phys.* **12**, 230–232.

Mitra, G. B. (1965). *Acta Cryst.* **18**, 464–467.

Mitra, G. B. & Bhattacherjee, S. (1968). *Acta Cryst.* A**24**, 266–269.

Mitra, G. B. & Bhattacherjee, S. (1969). *Am. Mineral.* **54**, 1409.

Mitra, G. B. & Bhattacherjee, S. (1970). *Acta Cryst.* B**26**, 2124–2128.

Mitra, G. B. & Bhattacherjee, S. (1971). *Acta Cryst.* A**27**, 22–28.

Mitra, G. B. & Bhattacherjee, S. (1975). *Acta Cryst.* B**31**, 2851–2857.

Nigam, G. D., Mukherjee, P. S. & Bhattacherjee, S. (1976). *Indian J. Pure Appl. Phys.* **4**, 183–184.

Wilson, A. J. C. (1962). *X-Ray Optics*, pp. 59, 106. London: Methuen.

Acta Cryst. (1978). A**34**, 638–639

The structural classification of crystal point symmetries: *corrigenda et addendum*.

By J. D. H. Donnay, *Department of Geological Sciences, McGill University,* 3450 *University Street, Montreal, PQ, Canada H*3*A* 2*A*7

(*Received* 16 *February* 1978; *accepted* 14 *March* 1978)

In *Internationale Tabellen zur Bestimmung der Kristallstrukturen* (*IT*) [Vol. I. (1935), Berlin: Borntraeger] Carl Hermann followed the Mallard classification into crystal systems. The 'trigonal system' did not enter the *IT* until 1952 – a step backwards.

In the paper that appeared under the above title (Donnay, 1977), please note the following alterations: p. 979, Abstract, line 1: instead of 1935, read 1952; p. 984, References, Friedel (1926), Reprinted: instead of 1974, read 1964; p. 982, *Historical perspective*, after the first paragraph, insert the following *addendum.*

It is noteworthy that Carl Hermann (1898–1961) closely follows Mallard (1879) in his classification into systems, which appears in chapter III of *IT* (1935, pp. 49–63, particularly pp. 54–60). The resulting listing thus agrees with that advocated in this paper (Table 1, column 2) with a single exception: the orthorhombic antihemihedry C_{2v} is given in only one orientation ($mm = mm2$). Hermann's *Hexagonales System* contains the h lattice symmetry and its 15 proper subgroups; his *Rhomboedrisches System* likewise contains the r holohedry with its four proper subgroups, and only crystals with a rhombohedral lattice belong to the rhombohedral system. A step backwards was taken in 1952, when this logical and elegant presentation was dropped from the *IT* (1952) to make room for the ill-conceived 'trigonal system'.

References

DONNAY, J. D. H. (1977). *Acta Cryst.* A**33**, 979–984.

Internationale Tabellen zur Bestimmung der Kristallstrukturen (1935). Vol. I. Berlin: Borntraeger.

International Tables for X-ray Crystallography (1952). Vol. I. Birmingham: Kynoch Press.

MALLARD, E. (1879). *Traité de Cristallographie*, Vol. I. Paris: Dunod.

International Union of Crystallography

Reproduction of IUCr publications

The International Union of Crystallography draws the attention of all crystallographers to the fact that no firm or organization whatever has been given the right to sell photocopies, microforms, or any other form of reproduction of any of the publications of the Union. The Union is considering the viability of marketing microform editions of its publications itself. The rules concerning the photocopying of articles for personal use are given on the inside front cover of each issue of the Journal.

The Union has become aware of some commercial offerings of unauthorized reproductions of its publications. As one important means to combat this, the Union strongly urges all crystallographers not to make use of any such unauthorized activities and to bring them to the Union's attention. The publications of the Union belong to the crystallographic community, as such, and it is therefore in the interest of all crystallographers that infringement of the Union's copyright be discouraged by a total lack of response from all crystallographers.

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.

Rare gas solids. Vol. II. Edited by M. L. KLEIN and J. A. VENABLES. Pp. xiv + 643. London: Academic Press, 1977. Price £26.00, $50.75.

The study of rare gas solids has posed a challenge to experimentalists and theoreticians ever since their existence was firmly established approximately one hundred years ago. The experimental difficulties center around the extreme conditions of low temperature and high pressure (for helium) needed to attain and preserve the solid state in these materials, while the theoretical problems are related to the search for suitable quantitative expressions which can adequately describe the interatomic forces responsible for the formation of crystalline rare gases. Equally perplexing are the questions why only specific crystalline phases are formed by these solids and why solid–solid phase transitions occur [as was discussed in the short review of Volume I of this two-volume book which appeared in *Acta Cryst.* (1977), A**33**, 526]. Volume I is largely confined to the theoreticians' account, while Volume II, in which the pagination follows sequentially that of Volume I, contains the experimentalists' contributions.

This volume consists of ten excellent chapters written by fifteen authors. However, a glaring omission is the absence of a comprehensive chapter devoted to a description of the extensive low-temperature X-ray investigations into the structures of the rare gas solids. These materials have been studied by X-ray diffraction techniques for over 50 years, starting with the study of argon in 1924 and continuing today with measurements taken at 30 mK. Unfortunately, in this book the fragmented description of diffraction studies is scattered throughout several chapters. Three chapters should be of special interest to the readers of this journal: *Crystal Growth* (J. A. Venables and B. L. Smith), *Neutron Scattering* (B. M. Powell and G. Dolling), and *Brillouin Spectroscopy* (B. P. Stoicheff).

The chapter on crystal growth (which also includes a discussion of crystal defects) discusses techniques that have been developed for growing crystals from the vapor and from the liquid (at both low and high pressures). Also included is a description of the influence of crystal imperfections (impurities and structural faults) on experimental measurements.

The first third of the neutron scattering chapter describes the principles and techniques of neutron spectroscopy, while the remainder of the chapter is devoted to a detailed analysis of experimental results and theoretical interpretations of neutron scattering studies of neon, argon, krypton, and xenon.

The chapter on Brillouin spectroscopy is noted for its description of cryostat design and crystal growth.

The tremendous ingenuity displayed in preparing and characterizing suitable single crystals of these materials is only hinted at; but this is sufficient to earn the respect of all experimentalists. For example, in one study, single crystals of