

determine the symmetry of the individual layers of some smectites and that the same technique shows that turbostratic disorder in smectites arises from rotation of layers around an axis normal to the layer rather than from random lateral displacements of successive layers. This information could not be obtained by X-ray diffraction or by any other method.

Naturally the book is not without faults. The subject index is inadequate, occupying less than one page and containing only 53 entries. The mineral index is also unhelpful being no more than a catalogue of the page numbers on which each mineral name is found. There is, for example, no reference to 'selected area diffraction' although the subject is mentioned briefly in Chapter 1, dealt with fully in Chapter 2 and examples of its application to individual minerals are found in almost every other chapter. Similarly, a reader wishing to find micrographs illustrating the morphology of a particular mineral would have to search through the appropriate chapter. In a book of this kind, likely to be used widely as a reference manual, a much more detailed index would have been invaluable.

Some misprints have also been noted. On page 337 $Pc2_1/n$ is printed instead of $Pc2_1n$ as a possible space group for $FeAlO_3$, on page 331 $P2/c$ appears instead of $P2_1/c$ as the space group for bayerite and on page 356 the caption to the rather lattice image of pyrophyllite gives 4.75 \AA as the spacing of the fringes whereas the text and lettering on the figure both have 4.57 \AA .

These omissions and errors however, do little to detract from the excellence of the book. It is clearly printed on high quality paper and copiously illustrated with about 350 half-tone figures of micrographs and diffraction patterns supplemented by about 60 line-drawings. The editor has clearly fulfilled his aim to explain the significance of electron micrographs and electron diffraction patterns of clays in terms of their crystal structures and properties. This book will be invaluable to those who use electron microscopes to study clays and could be consulted with advantage by mineralogists interested in clays or in the electron-optical examination of minerals.

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PHILLIPS (F. C.). *The use of stereographic projections in structural geology* (Third Edition). London (Edward Arnold), 1971. vi+90 pp., 91 figs. Price £2.20 (boards), £1.10 (paper).

In this third edition of what is in effect the only standard work on the use of stereographic projections, the author claims that his principal aim is to bring the work up to date. Some fifteen per cent of the extensive references are post-1960, the date of the second edition.

Although a description of the 'continuous dipmeter' has been added, the author has omitted some of the more important advances in stereographic usage such as a more accurate method of contouring as used by Flinn (*Journ. Geol.*, **66**, 526-59, 1958) and the plots of the intensities of light seen in conoscopic microscope images of Rath (*M.M.* **38**-535). This volume, however, at the modest price of £1.10 in paperback form, seems assured of a wide sale to students of structural geology. J. W. O.