informality. Rigour is conspicuous by its absence, both in the use of mathematical notation and in imprecise usage of words. Very many of the diagrams are reproduced from elsewhere, and they are not always quite apposite to the points in the text that they are intended to illustrate. There is perhaps an unrepresentatively high density of errors on the 14 pages devoted to the silicates, of which 2 are taken up with a diagram of the various pyroxenoid chains and another with incorrect diagrams of talc and muscovite structures. The description of the composition of 'a sample of the mineral hornblende' is quite literally incredible.

A lecturer in the process of revising his lectures could well profit from a critical reading of the book, but in the hands of a student it could encourage woolly thinking and sloppy writing.

E. J. W. WHITTAKER

WOOSTER (W. A.). *Tensors and group theory for the physical properties of crystals.* Oxford (Clarendon Press), 1973. 344 pp., 141 figs. Price £7·00.

This book introduces the use of tensors and group theory in the interpretation of the macroscopic properties of single crystals. It does not deal with the applications of tensor notation to crystal chemistry, or to the properties of mineral aggregates, or the uses of group theory in such areas as the interpretation of crystal field spectra, in which the concern is with local (site) symmetry rather than macroscopic (crystal) symmetry. Within these limitations it is a very readable introduction to these mathematical techniques, which might usefully be employed in teaching crystal physics. A student of average ability, educated to University entrance level in mathematics, and prepared to read the text carefully and try the examples given, should have little difficulty in understanding and applying the contents.

Part 1 of the book is concerned with the application of tensors to the 'static' properties of crystals, and includes discussions of thermal expansion and glide twinning, stress and strain tensors, piezoelectricity, elastic properties, transmission of elastic waves, and photoelasticity. The coverage necessarily overlaps that in Nye's work (*The Physical Properties of Crystals*, Oxford, 1957) but is less comprehensive, Wooster taking 8 pages to cover stress and strain tensors where Nye takes 25.

Part 2 deals with the applications of group theory to the 'dynamic' properties of crystals, including wave vectors, Brillouin zones, molecular vibrations, and associated infrared and Raman spectra.

There are useful appendices including character tables and stereograms for the 32 point groups, and an adequate index. The book is well printed, and reasonably priced. It can be recommended as an essential purchase for libraries serving mineralogists, as a useful addition to the personal libraries of mineralogists concerned with crystal physics, and as a textbook for introductory courses in crystal physics.

R. G. J. STRENS