Treatment of a subject like this could easily be either too brief and superficial or too exhaustive. The author has shown a nice sense of proportion, and has tried to present a selection of topics and examples, and a style of treatment which will be found particularly appropriate by mineralogists. Among the many references for greater detail is another volume by himself *Spectroscopy, Luminescence and Radiation Centers in Minerals* (Springer, 1979). The present volume does not consider infra-red and Raman spectroscopy which depend upon vibrational modes rather than energy level transitions. Many other aspects of the physics of minerals are not included (e.g. elasticity, electrical conductivities, magnetism) so perhaps a more suitable title to this book would be 'Atomic Physics of Minerals . . . '.

The physical properties of minerals are of course of great interest not only to mineralogists but also increasingly to geophysicists, and to physicists and chemists concerned with solid-state devices (using, for example, lasers and semi conductors) many of which make use of minerals or their synthetic counterparts. The translation of this book, published first in Russian in 1974, will be welcomed by all.

J. Zussman, Manchester

W.E. Tröger, 1979. *Optical Determination of Rock-Forming Minerals — Part I Determinative Tables.* English edition of the fourth German edition by H.U. Bambauer, F. Taborszky and H.D. Trochim. Schweizerbartsche Verlagsbuchhandlung, Stuttgart, 188 pp., DM 48.00, U.S. $ 27.00.

This book is the English translation of the fourth German edition of Tröger's *Optische Bestimmung der gesteinsbildenden Minerale, Teil I: Bestimmungstabellen.* Part II, the descriptive text volume, is only available in German.

These *Determinative Tables* contain data on optical, crystallographic, physical and chemical properties of 293 rock-forming minerals and, besides, additional information on 'distinguishing features of similar minerals' and 'occurrences'. The properties are elucidated by crystal-clear drawings of most of the minerals and by diagrams showing various relations between e.g. optical properties and chemical composition. For determination a reference chart is added in which the minerals are plotted according to their refractive index and birefringence. The book is completed by several diagrams and tables including nomograms for optical measurements, tables of densities and of *d*-spacings, stereograms with plagioclase migration curves and a Michel-Lévy color chart.

Essentially the English edition is an unchanged translation of the German edition. Some corrections and modifications have been made compared with the German edition. For instance, the name 'Grammatit' has been replaced by 'tremolite', and the terms 'low-, medium- and high-grade metamorphic' have been used in stead of 'epi-, meso- and katazonal metamorphic'. Some information in the column 'Occurrences' is updated. The choice for another letter type made many abbreviations redundant and the text in the tables better readable.

Some minor (printing) errors are still there. The optic axial plane of orthopyroxene is (100), not (010) (tables, no. 164, p. 72). In the glaucophane diagram (no. 181—4, p. 94) the points with $n_Y = n_Z$, $2V = 0$ and Zc = minimum must lie on one line with the same chemical composition.

Nevertheless this book, with its crystal-clear drawings, surveyable tables and diagrams, is still very useful for all those who deal with optical determination of minerals.

P.C.C. Sauter, Utrecht

OCEANOGRAPHY

F.T. Banner, M.B. Collins and F.S. Massie (Editors), 1979. *The North-West European Shelf Seas: The Sea Bed and the Sea in Motion 1. Geology and Sedimentology.* Elsevier, Amsterdam, 300 pp., U.S. $ 68.25, Dfl. 140.00.

This book, in A4 format (21 X 30 cm), contains eight chapters which, according to the editors, 'seek to summarise present knowledge of the sea bed and of the movement of the sea waters and sediments on the