that a Fe^{2+} pyroxene is formed'. One is surprised at the author's judgement about the general potentiality of the technique for routine determination of accurate Fe^{3+}/Fe^{2+} ratios and again when one reads that a good example of its utility is in showing that manganese nodules contain α-FeOOH or γ-FeOOH, or a mixture of both, or possibly other combinations of ferric oxides or a mixed iron–manganese oxide; one wonders whether a few minutes introspection would not have been a quicker (and cheaper) route to so vague a conclusion. The geochemical section could certainly have been improved by the omission of some of the less relevant passages and some of the wilder flights of optimism. The fact that the author is not on his home ground in mineralogy tends to show through slightly in some of the nomenclature. There are silicate formulae with unbalanced charges on p. 182, and on p. 196, where there also seems to be confusion in the nomenclature of the spectral peaks. However, the number of errors noticed was not excessive and the book will undoubtedly be a useful one.

E. J. W. WHITTAKER

NICKEL (E.). *Grundwissen in Mineralogie.* Teil 2: *Aufbaukursus Kristallographie. Ein Lehr- und Lernbuch auf elementarer Basis für Kristall-, Mineral- und Gesteinskunde.* Thun and Munchen (Ott Verlag), 1973. 301 pp., 141 figs. Price S.Fr. 27.80.

This book is the second part of a three-volume work. The first part (Grundkursus), published in 1971, contains an introduction to crystals and rocks, and the third part, promised for the end of 1973, is concerned with petrography.

This second part is concerned with crystallography and begins with crystal morphology and then deals with lattice symmetry before describing crystal chemistry and crystal optics. The book concludes with a description in simple terms of X-ray crystallography, and includes a short section on electron and neutron diffraction.

The book is well illustrated and German students should find it valuable.

A. C. BISHOP

ANDERSEN (C. A.), editor. *Microprobe Analysis.* London and New York (Wiley–Interscience), 1973. xiv+571 pp., 166 figs. Price £12·50.

The title of this book, *Microprobe Analysis*, is now used generally to denote techniques that depend for their operation on a focused beam of particles or electro-magnetic radiation impinging on a selected region of a solid specimen, and that provide chemical, structural, and other types of information with a resolution usually less than $\sim$100 μm. The well-established technique of electron-probe analysis occupies the major part of this volume (421 pp.), which also includes discussions of the more recently developed and less widely used laser-probe (82 pp.) and ion-probe techniques (46 pp.).