mental concepts of 'good' and 'bad' crystals are introduced, the discussion is, unfortunately, sometimes confusing. It is implied (pp. 32, 33) that the disordered atoms within a closed surface surrounding a dislocation line *can* be replaced by 'good' material, although the imperfection is not thereby removed. But if the dislocation remains, so does the bad material near its line, so that the replacement postulated has not, in fact, been carried out. Indeed, it seems to the writer that this replacement cannot be made when the imperfection is a dislocation. All that can be done is to set up a one-to-one correspondence between atoms in an ideal crystal and those of the real crystal in regions where the latter is *good*. The repeated use in Chapter 7 of proper names as adjectives to distinguish different kinds of imperfect dislocation is rather clumsy, especially when they occur in hyphenated pairs. The remainder of Part II, describing applications to grain boundaries, becomes increasingly more difficult, since the reader is being led to the frontier of advance in a selected field. A similar diversity in level of difficulty marks the many stimulating problems scattered throughout the text and collected at the ends of the chapters. This diversity is in some ways an advantage as it makes the book of interest to a wide circle of readers. It also ensures that the conscientious student using the book as a text in a self-taught course, as Dr Read plans, will be well grounded in dislocation theory if he survives all the problems.

Readers will need to bear in mind that in this textbook no particular effort has been made to trace historical origins, so that current references are sometimes incomplete. There is, however, a comprehensive bibliography of general works on dislocation theory at the end of Chapter 1.

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Spezielle Mineralogie auf geochemischer Grundlage. By F. MACHATSCHKI. Pp. vii+378 with 228 figs. Vienna: Springer. 1953. Price S. 215; DM. 36·00; $8·60; S.fr. 37·00; 61*s.* 6*d.*

The genetic approach to mineral classification revealed in this book follows in general pattern that developed in Angel & Scharizer's *Grundriss der Mineralparagenese* (1932)—a pioneer effort to which Machatschki himself pays tribute in his preface.

In the short introduction and in the appendix, the method of treatment of mineral formulae is set out rather on the lines introduced by the author himself in 1932. The coordination of atoms or groups is indicated by superscript numbers, polyatomic anions represented in square brackets and structures based on chains, sheets and networks prefixed by ∞^1, ∞^2 and ∞^3 respectively, the formula itself being followed by an abbreviation indicating the system of crystallization.

These very useful devices serve to present a condensed picture of the chief structural features of minerals. There follows a brief chapter on geochemistry, the first minerals to be described therein being somewhat surprisingly the gases of the atmosphere and water and ice of the hydrosphere.

The scope of the main portions of the book can be summarily indicated by the headings of the chief sections: the primary magmatic minerals roughly in their supposed order of crystallization; the epimagmatic minerals, including the pegmatitic-pneumatolytic and the hydrothermal; the minerals of weathering and sedimentation including clays, lateritic products, evaporites and organic minerals; and following thereon the minerals of metamorphism.

A special section (74 pp.) is devoted to the ore minerals.

It is evident that difficulties would be met in following such a scheme to its logical conclusion, and the author deliberately departs from it on occasion without, however, seriously detracting from the unity of his approach.

In the section on ore minerals the geochemistry of the single elements concerned is presented as an introduction to the description of the individual minerals, a scheme which might well have been attempted in some other sections of the book, as, for example, in the treatment of the pegmatitic-pneumatolytic minerals.

In the appendix a crystallochemical mineral system is set out in tabular form, minerals being classified in orders and families, the formulae of the species being indicated in the manner already set out in the introduction and supplemented by other pertinent data.

A few errors in the text have been indicated in a sheet of corrigenda supplied with the book. A number remain which have escaped attention. A few minerals have been allotted erroneous formulae, as in the case of sapphirine, kornerupine and ideal nepheline, and the localities of some rarer minerals are not always correctly indicated.

In all, Professor Machatschki has produced in this book a live and stimulating mineralogical classification and description on genetic lines; it provides a worthy successor to the volume of Angel & Scharizer, incorporating the more important advances of the intervening years, and should be welcomed by mineralogists and petrologists alike.

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Organic Crystals and Molecules. By J. M. ROBERTSON. Pp. xi+340 with 132 figs. Ithaca: Cornell University Press; London: Geoffrey Cumberlege. 1953. Price $5·00; 32*s.* 6*d.*

This book is based on a course of lectures given at Cornell University in the autumn of 1951 during tenure of the George Fisher Baker Non-resident Lectureship in Chemistry.

The first two chapters give an account of the geometry and symmetry of crystals, based on the historical development of this field. The theory of X-ray diffraction is dealt with in the next chapters and includes Fourier methods, the phase problem, and the refinement of atomic parameters.

The second part of the book—the analysis of some organic molecular structures—covers in its successive chapters: early X-ray work; the structures of condensed-ring hydrocarbons—which show such striking agreement between observed and quantum mechanical values of their bond lengths; molecular arrangement and hydrogen-bonded structures; complex structures; macromolecules