

been updated to include the results of laboratory investigations at higher pressures and revised earth-models based upon such work. Chapters 4 and 5 (Thermodynamics and Crystal Chemistry; Magmatism and Igneous Rocks) contain minor modifications. Chapter 6 on sedimentary geochemistry commences with a brief new section on soil geochemistry; there are some slight changes in the section on oxidation-reduction potentials (including a revised SiO_2 solubility diagram), and an additional table of major and minor element abundances in sediments. A new table of element abundances in sea-water, their principal species, and residence times has been added to the chapter on the Hydrosphere (Chapter 7). At the same time, however, a useful table on the geochemical balance of the elements in the oceans has, unfortunately, been omitted in this edition. Chapter 8 on the Atmosphere is little altered; Chapter 9 on the Biosphere contains a new section on the concentration of the rarer elements in biogenic deposits and a slightly enlarged section on the geochemical cycle of carbon. Chapter 10 dealing with *Metamorphism and Metamorphic Cycles* is virtually unchanged and Chapter 11 on the Geochemical Cycle contains a section on isotopic fractionation expanded to include sulphur isotopes. The Appendix consists of tables of atomic weights and ionic radii; a Geological Time Scale; a table of estimated annual world consumption of the elements and the price of the latter in U.S. dollars per ton; and some questions and problems.

T. W. B.

ALBERTUS MAGNUS. *Book of Minerals*, translated by DOROTHY WYKOFF. Oxford (Clarendon), 1967, xlii+309 pp. and 2 plates. Price 84s.

Albertus Magnus, patron saint of scientists, published a series of commentaries on the works of Aristotle, mainly those concerning natural science. Albert could find no Aristotelian treatise on minerals and filled this gap by his own researches, basing the work on Aristotle's principles. The date of this particular work is uncertain and the translator suggests that it was probably completed by 1263. She has provided a lengthy introduction covering the life of Albert, his writings in general and the *Book of Minerals* in particular.

Those mineralogists who have an interest in the origins of their science will find much to intrigue them here. Each chapter has been given an explanatory introduction by the translator, for without this much of the direct translation would be difficult to follow. Copious footnotes are also provided to aid the reader. There are also five

appendixes, a bibliography, and an adequate index. If all such translations were so well presented, scientists might well start taking an interest in the history of their own subjects!

J. W. B.

WEIBEL (M.) *A guide to the minerals of Switzerland*. London (Interscience). xi+123 pp., 3 figs., 27 plates, 15 maps. Price 45s.

The title of this book should not mislead the ardent collector into believing that it will lead him to a wealth of collectable minerals. The book does, however, give a splendid account of the occurrence of minerals in the Alps and notes the rock types with which they are associated. A list is also given of the location of museums in which the finer specimens already collected may be seen.

The occurrence of the minerals in the so-called Alpine Clefs is described and those of the Central Massif of Aar and Gotthard are cited as typical examples. Some pointers to the appearance of potentially rewarding clefs are given such as the marginal leaching in fissures and the presence of splits and offsets in rock faces.

Individual minerals are described and their occurrence, form, and rock association are given in excellent tables: the colour plates of minerals are superb.

Considerable space is given to describing the regional occurrence of mineral associations. Regional maps show possible mineral collecting routes, most of them only for experienced climbers and walkers with great stamina.

Suggestions are made for planning excursions to collect minerals but the following paragraph would seem to daunt the potential collector. 'All the renowned localities are combed out so thoroughly that the probability of coming across a virgin cleft is very small for the inexperienced tourist.'

The information concerning regulations for mineral collecting and the need, in many cases, for permits to collect them leaves one with the feeling that this exciting Aladdin's cave excellently described, and beautifully illustrated in the book, is closed to all but a favoured few.

B. S.