Magazine ranks fifth in the number of times it is cited (47 % being self-citation). Reference and review publications covering encyclopedias, dictionaries, handbooks, yearbooks, directories, textbooks and monographs, and review articles are all introduced as secondary sources. Bibliographies, and abstracting and indexing publications are considered in depth, with examples and details of coverage, coverage overlap, and speed of coverage (*Mineralogical Abstracts* is quoted as having 59 % of its abstracts for papers published in the previous year, *Referativnyi zhurnal* (*Geologiya*) 80 %, *Chemical Abstracts* 43 % with 45 % current year). More specialist chapters include those on Stratigraphy and regional geology by W. A. S. Sarjeant and A. P. Harvey, with 63 pages of references to fundamental books, reviews, and bibliographies on regional geology arranged alphabetically by country within each continent. Mineralogy, petrology, geochemistry, and crystallography are covered by Olive R. Bradley, with sections for introductory textbooks, advanced textbooks and reference books, periodicals, and abstracting services. Structural geology and tectonics are dealt with by P. W. G. Tanner, and Applied geology, including metalliferous ore deposits and their exploration, industrial minerals, and engineering geology, is covered by C. H. James. Clay and soil minerals are partly covered under mineralogy but also in the chapter on Soil science by D. A. Jenkins and R. I. J. Tully. Finally, sections on mineralogy, crystallography, petrology, and geochemistry are included in the chapter on the History of geology by D. A. Bassett, and the book concludes with an interesting series of practical exercises.

This will be an invaluable reference work for librarians and all Earth scientists and deserves a place in personal as well as departmental and all sectional and main libraries. R. A. HOWIE

TATSCH (L. H.). *Mineral deposits*. Sudbury, Massachussetts (Tatsch Associates), 1973. iii+264 pp., 8 figs. Price $64.00.

In this unconventional volume the purpose is to analyse the mineral deposits on a global scale in terms of geometrical, mechanical, thermal, and chemical aspects of the Earth's evolution. The starting-point is the occurrence of seismotectonic belts, elongate in form, characterized by varying degrees of tectonic, seismic, and magmatic activity, and the existence of similar belts in various regions of the Earth throughout its 4600 Myr of history. It is claimed that regional metallogenic zones are constituted similarly in all parts of the world, thus gold and copper are associated with eugeosynclines, tin and tungsten with terrigenous miogeosynclines, lead and zinc with geanticlines of limestone. The present circum-Pacific belt can be separated into inner and outer megazones; the former, characterized by Neogene andesites and 'femic' mineralization (Cr, Ni, Cu, Au), originated close to oceanic crust; and the latter, carrying Sn, W, and other 'sialic' mineralization, is related to continental crust. Among other North American examples quoted is a 3500 km long segment of a Pre-Cambrian orogenic belt carrying gold deposits across the Canadian Shield from Great Slave Lake to Eastern Quebec. For South America there are equally clear belts, and this

may also be true in Siberia. However, the examples cited for Europe, Africa, and Australasia are less convincingly continuous. These belts are referred to a remarkable tectonospheric model of the Earth for which it is postulated that there was a primordial Earth of radius about 5400 km, differentiated and fractured into octants by three mutually orthogonal planes. Movement on these planes is supposed to have occurred before an overlying tectonosphere consisting of 'Earth prime' (planetesimal material?) accreted on to the primordial Earth to form a layer about 1000 km thick. The mineralized belts are explained on this model as projections, through the tectonosphere, of the primordial fracture system.

It is claimed that proprietary methods based on the tectonospheric model have enjoyed some success in prospecting. It is difficult, however, to see how these can be based on anything other than the broad concept of metallogenic zones, a concept that, since it was enthusiastically sponsored by the All-Union Geological Institute in Russia two or three decades ago, has been an accepted, though only broadly helpful, part of the background of the search for new ore deposits. The tectonicspheric model of the author offers such serious difficulties in the present state of ideas about the physical nature of the mantle that it does not appear likely to win wide acceptance.

KINGSLEY DUNHAM

RÖSLER (H. J.) and LANGE (H.). *Geochemical tables* (transl. from German by H. Liebscher). Amsterdam, London, and New York (Elsevier Publ. Co.), 1972. 468 pp., 136 figs., 216 tables. Price Dfl. 80.00 ($32.00).

Originally compiled for students at the Freiberg Mining Academy, the translation and wider availability of this collection of fundamental data and references will be welcomed, though there is some overlap with volume I of Wedepohl's *Handbook of Geochemistry* [M.M. **38**–116]. Data on fundamental chemical and physical concepts (structure of atomic nuclei, isotopes, ionization potential, electronegativity, thermodynamics, diadochy, redox potential, etc.) are tabulated and discussed, with references. For geochemical methods, however, each technique is merely listed but given an extensive bibliography. The major and trace-element constituents of eight standard rocks are tabulated, data for four of the rocks (Zentrales geologisches Institut, Berlin) being hitherto unpublished values, and those for G–1 and W–1 being quoted from Fleischer (1965). In this chapter in particular there is evidence that the references are not up to date, even allowing for one- or two-year delay in production: the bibliography on the section on XRF and Electron microprobe analysis, for example, has only three references to work published later than 1967 in this rapidly developing field; DTA references stop at 1966. Other chapters include those on the representation and mathematical processing of geochemical data, distribution of the elements in meteorites and in the Earth, on the geochemistry of magmatic, metamorphic, and sedimentary processes, and of the hydrosphere, atmosphere, and biosphere. The brief chapter on geochemical cycles and geochemistry of individual elements (3 pages) has eight pages of references to the geochemistry of individual elements (mainly to older classical papers but with some modern works). An important chapter on fields