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Book Reviews

Works intended for notice in this column should be sent direct to the Book-Review Editor (R. O. Gould, Department of Chemistry, University of Edinburgh, West Mains Road, Edinburgh EH9 3JJ, Scotland). As far as practicable books will be reviewed in a country different from that of publication.

Acta Cryst. (1988). B44, 88

Protein engineering. Edited by D. L. OXENDER and C. F. FOX. Pp. xvii+365. New York: Alan R. Liss, 1987. Price £22.00.

Crystallography is today a source of data for many other sciences, the science of protein structure being a notable example. For anyone interested in the wealth of detail of the structure of proteins, as it is currently known, this is a superb text, full of information, excellently set out. Protein engineering – the book's title – is not the sole subject matter of the book: it deals with protein structure quite thoroughly, and only after that with protein engineering as it is now developing, based on that foundation of detailed structural understanding.

This is a multi-author production: 100 authors, to be exact; and it is an almost wholly American treatise, since only four of the authors are from outside the US (they are British). The average length of each contribution is hardly more than ten pages, so none of them are very comprehensive; nonetheless, the coherence of the subject matter throughout the book is impressive and the range of topics is not only extensive but is systematically and elegantly handled. The presentation is well conceived. Initial essays outline methods for the determination of protein structure (including 20 pages on the use of NMR); then follow contributions on the underlying principles such as the effects of hydrophobic interactions, folding, stability and so on; and this then leads to the section on the deliberate modification of proteins. At the end of the book, a collection of over 30 colour plates, including stereo-pictures, serves both to clarify points made in the text and to add examples from several very recently determined protein structures.

X-ray crystallographic results are present at every turn, as one would expect. The specific procedures of the crystallographic method, and its theory, are laid out in highly abbreviated but very readable form in ten pages, written by W. A. Hendrickson.

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The magic of minerals. By O. MEDENBACH and H. WILK. Pp. 205. Berlin: Springer-Verlag, 1986. Price DM 98.00.

The English edition of the German book *Zanberwelt der Mineralien* (published in 1977) is a superb product of Springer Verlag's excellent production standards. For a mineralogist there are exceptional reproductions of museum-quality specimens, with clear morphology, a similarly high quality of reproduction of colours (which is very difficult) and a normal text, suitable for such an artistic book, addressed not only to scientific people but also to those interested in general knowledge. Turning every page of the book gives one a new excitement; a rhombohedral glassy-lustre crystal of rose rhodochrosite, of 34 × 39 mm, reproduced on a full page of the book (300 × 270 mm, involving a ×16 magnification), shows very rare good morphology of a Colorado specimen; quartz on marble (40 × 46 mm original size); smoky, amethyst, or rose quartz; the exceptional amethyst rosette (90 × 103 mm original size); or the crystal-clear sceptre quartz present a series of beautiful natural crystals of trigonal specimens. Calcite, ankerite, aragonite, nice twins of gypsum; the colours and form of cuprite, with small crystals of malachite, or overgrowth; the rare pyrite on calcite, or the exceptional crystals of apophyllite; and so on, surprising every time, as one encounters each photograph. Olaf Medenbach has portrayed special specimens and produced exceptional photographs, following Hauy's description of crystals as 'the flowers of the mineral kingdom' – because of the beauty and colouration of many of their clusters.

The text of the book is divided into two parts: a general mineralogy, and a specific description for every one of the mineral species illustrated on the adjacent pages. The general mineralogy, accurate and well written, gives the crystalline nature of matter, the structure of minerals, the symmetry of the external forms and physical properties, the occurrence and origin and the mineral names. The latter is a simple classification of the minerals. The specific descriptions of the mineral species reflect a clearly gemmological and historical influence. They are in good harmony with the aesthetic quality of the photographs and the minerals described are limited to the ones reproduced.

Finally, it seems imperative to draw attention to the exceptional photography of diamond, showing the trigonal markings and the rounded corners of the octahedron ... together with tourmaline, emerald, morganite, topaz ... all gem specimens!

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