Crystallographers can find themselves out of their depth here, since the subject is so distant from the tidy world of crystals, and is so densely crammed with biochemical, bacteriological and genetic paraphernalia. The topic is not irrelevant to us, however, as it is the ‘nights opened up by our science, that is, by protein crystallography, which now render the creation of novel protein molecules a practical reality.

Not that such engineering is in full-scale operation: it is not, yet. But the prospects are already very exciting indeed, and many prominent scientists and some big chemical industries are today seriously involved.

Realizing the potentiality of protein engineering and the importance of interrelating the relevant specialties, the Science and Engineering Research Council set up, in June 1985, a ‘Biotechnology Directorate’ - a sort of club (or ‘invisible college’) composed of academic scientists on the one side and industrial firms on the other. The objective was the promotion of a rapid healthy growth of the new science, through free interchange of information, coordination of effort and mutual assistance. (Industrial membership fees are £30 000 but this is considered good value by the rather select giant companies that have joined.) At the same time, the Royal Society has been using its position to render the creation of novel protein molecules a practical reality.

The next chapter describes methods of investigation: microscopy (diagnostic features with emphasis on inclusions), absorption spectroscopy (visible, UV, IR), fluorescence (UV and X-ray), goniometry (morphological features of synthetic rubies), chemical analysis (trace elements), X-ray and microprobe analysis (inclusions). After these introductory chapters with a total of 38 pages, the main part of the book is divided into two sections. The first section gives a systematic and detailed description of the characteristic features of natural rubies from different localities all over the world. The second section is an excellent review of otherwise not easily accessible data on the properties of synthetic rubies from various manufacturers. With respect to the distinguishing features, the emphasis is on microscopic characteristics of natural and synthetic rubies. These are presented in 174 photographs of typical growth and inclusion patterns.

The list of references (almost 300) which is given at the end of this book will be most useful to any researcher in the field. In conclusion, Naturliche und synthetische Rubine is a very interesting and readable book that will provide those interested in the areas of gem research and gemmology with a great deal of information.

G. BAYER
Institut für Kristallographie und Petrographie
ETH-Zentrum
CH-8092, Zürich
Switzerland


Books Received

The following books have been received by the Editor. Brief and generally uncritical notices are given of works of marginal crystallographic interest; occasionally a book of fundamental interest is included under this heading because of difficulty in finding a suitable reviewer without great delay.


