

The subject is treated in six chapters. The first three (nearly half the book) deal with the basic concepts of X-ray diffraction. The fourth and fifth chapters deal with the diffuse scattering of X-rays as observed in molecular crystals, and the relation of this to elastic constants and molecular forces. (Studies of this kind have also been carried out on mineral specimens including diamond, halides, and sulphides as well as metals.) The last chapter is concerned with the temperature dependence of diffuse scattering, and also discusses the special effects that appear at the transition temperature of a continuous (displacive) transformation.

Optical analogies of X-ray diffraction have been used for crystal structure determination, including some studies of disorder. The authors of the present work have been the leading practitioners of this method in its application to the study of thermal disorder. This approach to the problem therefore features prominently in their book, but not by any means to the exclusion of mathematical treatment.

The text of the book, including a useful reference list and index, is well produced as are also the figures. Crystallographers will be glad to have it and will no doubt look forward to the appearance of others in this series.

J. ZUSSMAN

HANSFORD (S. HOWARD). *Chinese Carved Jades*. London (Faber and Faber), 1968, 131 ff., 6 figs., 8 coloured pls., 96 half-tone pls. Price 105s.

This book is a successor to the same author's *Chinese Jade Carving*, published in 1950 and for long out of print; it is, however, a new book and not a revised edition of the earlier one. The introductory chapter includes a useful account of recent developments in museums and archaeological work in Taiwan and in mainland China. The second chapter deals with the jade minerals, their properties, identification, and world distribution, and concludes with a description (including the economic and political history) of the source-areas of the jade materials that were used in China. Mineralogists, as well as more general readers, will find this somewhat involved chapter difficult to follow, but ample references to geological reports and other books and documents are given. At least part of the difficulty is due to the uncertain identification of some of the carved objects that are critical to the interpretation of the origin of the material; much wider use of modern non-destructive methods of identification and characterization of carved jade and 'pseudo-jade' objects is needed. Chapter 3 describes the methods used for carving jade, and the remaining three chapters are concerned with the art and archaeology of jade. The book makes no claim to be a comprehensive treatise or catalogue; rather it is a study, by an acknowledged expert, of a material that has in its time been valued above all others, and of the art-form to which it gave expression. The book is well illustrated, and the eight colour plates in particular are of fine quality.

B. C. M. BUTLER

MEEN (V. B.) and TUSHINGHAM (A. D.). *Crown Jewels of Iran*. Toronto (University of Toronto Press), 1968, viii+159 pp., 10 figs., 78 coloured pls. Price \$20.00.

This book records in a series of magnificent colour photographs what is probably the most dazzling collection of gemstones and jewellery known in the world. The collec-

tion contains more than half the world's known cut diamonds of more than 100 carats, scores of emeralds more than 2 in. across, and a unique assemblage of rubies. Two of the most fascinating plates are of a tray of unmounted polished emeralds up to 188 carats laconically labelled Case 30, no. 24, and of the 18-in.-diameter Great Globe said to contain 51 000 gems, the oceans being represented by emeralds and the land by rubies and red spinels. The photographs of the incomparable Nadir Shah jiqā set with six matched emeralds, and of a stem-cup composed almost entirely of rectangular step-cut rubies graduated in size and set within vertical gold ribs, demonstrate the beauty and craftsmanship which is evident throughout the collection. The text represents the results of the first scientific and gemmological study of these treasures.

R. A. HOWIE

GILLOTT (J. E.). *Clay in Engineering Geology*. Amsterdam (Elsevier), 1968, xv+296 pp., 118 figs., 18 tables. Price 155s.

This book will be helpful to civil engineers and geologists concerned with soil mechanics. The former will find particularly useful a summary of the 'state-of-the-art' concerning the physical chemistry of clays and the various methods now used to carry out mineralogical and physical analyses of clays. The latter will find more interest in the chapters on strength and rheology of clays and their engineering significance. This bringing together of civil engineering and geology is relevant and important and Dr. Gillott is to be congratulated on the fine book he has produced.

A true marriage is easier said than done, however, and it would have been more satisfying if the two sides could have been more closely fused together, rather than kept in separate compartments. Even cross-referencing within the book (except via the index) is minimal. Thus the Atterberg tests mentioned under engineering classification should surely be linked with how they are performed (Chapter 12), with plasticity and rheology (Chapter 7), and with the nature of water around the clay mineral (Chapter 6).

The bibliography is good, especially in obscure publications, but on slope stability surely something more recent than Taylor (1948) is required to be used with the results from the sophisticated shear tests with pore-pressure measurements described later. The illustrations are excellent and well chosen.

J. K. T. L. NASH