

BOOK REVIEWS

Clay Minerals, by Ernő Nemez. Akademiai Kiado, Budapest, 1981. 547 pages. \$48.00. (Available from Publishing House, Hungarian Academy of Sciences, P.O. Box 36, H-1361, Budapest, Hungary) (in English).

Clay Minerals, by Ernő Nemez, contains the most complete descriptions that this reviewer has seen of the structures and compositions of clay minerals, including the most exotic ones. The volume is extremely comprehensive and essentially free from errors, and the excellent writing shows no adverse signs of translation. In addition to sections on Crystal Structure and Identification, the book has a useful and thought-provoking section on the structural transformations of rock-forming minerals to clays during weathering processes in different chemical environments. The author is clearly a scholar who has a superb grasp of the clay field with respect to breadth and depth. The reader quickly comprehends this fact, and thus feels comfortable about accepting information from areas outside of his own area of expertise. Unfortunately, such confidence can be dangerous because this otherwise excellent book has a single, but serious flaw—it is dated.

A perusal of the voluminous lists of citations at the ends of the chapters shows that perhaps more than 97% of the references predate 1970, and the most recent ones found by this reviewer were published in 1974. For the more fundamental aspects of clay science, the absence of newer material makes little difference, but for certain parts of the field, the lack of such material is disturbing, and the resultant treatment is ob-

solete. For example, the section on diagenesis does not mention the work of J. Hower and his coworkers. D. D. Eberl's work on hydrothermal synthesis is not cited, and the section on X-ray diffraction interpretation of mixed-layered clays is essentially a summary of that given by MacEwan in 1961.

The competition for this book will be *Crystal Structures of Clay Minerals and their X-ray Identification*¹ (G. W. Brindley and G. Brown, editors). The Brindley and Brown volume does not include sections on the geological occurrence and laboratory synthesis of clays, but for subjects that are common between the two books, the more modern treatment by the latter volume makes it the necessary choice.

Clay Minerals, nonetheless, is a useful book because of its encyclopedic character, and the clay specialist will welcome it. It is not suitable, however, for beginning students of clay science who may lack the background necessary to discriminate among concepts that have been radically altered by work since 1974.

R. C. REYNOLDS

¹ Editor's note: See review of this book in *Clays & Clay Minerals* 30, p. 80 (1982).

Karst Bauxites, by György Bárdossey. Elsevier Scientific Publishing Company, Amsterdam, New York, 1982. 440 pages. \$83.00, Dfl. 195.00 (in English).

This English edition of "Karstbauxitok", *Bauxittelepek Karbonátos Közeteken*. (Akademiai Kiado, Budapest, 1977) is not simply a translation, but an update of the text with many references added to 1976 and a few to 1979. The work comprises eight chapters. The author, in the Introduction, sets out his viewpoint, approach, and a definition of the basic terminology, differentiating between terms such as "bauxite" and "bauxite ore", and so lays the basis for the emphasis on scientific factors in an area where techno-economic considerations are usually paramount. The book, as the title states, is, therefore, primarily concerned with bauxite rather than being limited to bauxite ore.

Ch. 1 reviews most of the general bauxite classification schemes, identifying their merits and shortcomings by the experience gained from first-hand study of various bauxite deposits. The author then outlines a unequivocal system based on bed rock lithology to differentiate between laterite bauxites which overlay aluminosilicate rocks, and karstic bauxites which overlay carbonate rocks. The distinction is reflected in such factors as particle size distribution of the material. Unfortunately, some weakness exists in the more detailed aspects of the classification in that some bauxite regions contain both *in situ* residual deposits, locally transported and redeposited deposits (described by the author as 'lateritic') and transported (allochthonous) deposits (Tikhvin type). Ch. 2, Geographic and Stratigraphic Distribution, and Ch. 3, Classification of Karst Bauxite Deposits, provide important information on the locations and geological settings of the bauxite.

Subsequent chapters deal with Lithology, Mineral Composition, and Structural Relationships of Deposits, and the concluding chapter on Genetic Assessment reviews the theories of the genesis of karst deposits, the bauxitization processes, the role of karst in bauxite formation, and plate

tectonics. The treatment of these subjects is good, and we congratulate the author on presenting the material in the final Ch. 8, thereby clearly separating observations from theories and hypotheses, an important distinction, in an area which has, in the past, evoked emotional response. The author's comments (pp. 352–353) on the extension of theories developed to explain the geological features of a single bauxite region into world-wide theories, and the influence of strong scientific personalities in imposing a theory in a country, or indeed internationally, are apt and must always be borne in mind.

The author has compiled the results of a tremendous amount of research, and the result is an up-to-date text in English. The original Hungarian edition marks the end of an era when the Mediterranean and Soviet Karst bauxites were virtually the only ones studied in any detail. On the other hand, the present English edition marks the beginning of an era where the karst deposits in the Caribbean and Pacific are given more than cursory mention. We must consider the relationship of these, and notably, the Pacific deposits with the nearby lateritic bauxite deposits in Australia, Indonesia, and Malaysia. The author has, therefore, done an excellent job of collecting and collating the vast amount of information to facilitate future work in this most important area.

I can only conclude by saying that this is an excellent beginning and we look forward to the near future when a second edition, containing more details on the other deposits and their differences will be identified, and a better understanding of this most important resource gained. The clarity of the English translation, as a whole, deserves commendation. The book is hard cover, well bound, with a sewn binding. The illustrations are clear and the print is easy to read.

V. G. HILL