

REVIEWS – NY LITTERATUR

ARNOLD H. BOUMA: *Methods for the Study of Sedimentary Structures*. Wiley-Interscience Publishers, New York-London-Sydney-Toronto, 1969. 458 pp., 233 figures, 56 tables. Price N. kr. 177,-.

The study of sedimentary structures has considerably expanded during the last 20–25 years. It started with simple field observation and qualitative description of particular structures, but soon different quantitative methods were introduced. Results obtained from studies of ancient sediments have given information about the sedimentary environment and paleogeography of particular areas. Simultaneously, a study of the sedimentary structures of recent deposits has produced facts supporting interpretations or hypotheses concerning ancient deposits, as well as information enriching our knowledge of the Earth in general. Many methods have been evolved and adopted in the study of sedimentary structures, making observation easier, more precise, detailed and correct. In his book, A. H. Bouma brings together and describes field and laboratory techniques useful to anybody dealing with sediments. This compilation is generously supplemented by the author's comments based on his own experience. Emphasis is given to more significant advances in sedimentary peels, impregnation and radiography methods. The book consists of five chapters; additional, supplementary data are contained in the five appendices.

Chapter one deals with sedimentary peels and methods of peeling. The sedimentary peel consists of an adhesive material, which is applied to a sediment face and is later, when dry, peeled off. Different methods of peeling have been experimented with and adopted; application of a particular method depends mainly on the properties of the rock and on the type of structures with which one is dealing. Peels may be taken from unconsolidated and consolidated sediments; this method is, however, most useful in a study of the former, and most of the peeling techniques are applicable to the unconsolidated deposits.

Methods of impregnating unconsolidated and poorly consolidated sediments are described in the second chapter. The descriptions are accompanied by information on which technique should be adopted, depending on the type of sediment and the results required. Difficulties and advantages of application of the various methods are commented upon. In addition, descriptions are given of the most useful impregnating plastics and their properties.

Radiography and its application to sediments are described in chapter three. The reviewer was left with the impression that this method is the one most familiar to the author, although it is regarded by him as a rather supplementary technique. This chapter gives many practical suggestions and advice concerning the arrangement of an X-ray darkroom, and information about the adopted procedures, apparatus and materials. Remarks on the preferred size and shape of samples are also to be found here. Numerous radiographs of different kinds of rocks are reproduced, and compared with photographs of the same samples. Finally, unsatisfactory results of the application of radiography to sediments and their possible causes are reviewed.

Appendices I, II and III comprise the following supplementary subjects concerning the application of radiographic techniques to the study of sediments: Appendix I, radiography on board ship. Appendix II, comparison of some different types of X-ray film. Appendix III, formulas and directions for making processing liquids for X-ray films.

Chapter four, entitled 'Other methods' is of a supplementary character and consists of descriptions of some of the methods of observation, conservation, and preservation of samples.

Descriptions of laboratory instruments related to techniques described in previous chapters are contained in chapter five. The descriptions are limited, however, to those instruments which are familiar to the author from his own experience.

This last chapter deals mainly with the sampling of unconsolidated sediments, and the manner in which samples should be collected, dried, sliced, and stored. Types of samplers are reviewed, including those operated on board ship from simple grabs to more advanced and complicated types of corers and box samplers. The book includes some conversion data for different units (appendix IV) and, listed in appendix V, addresses of manufacturers producing the chemicals necessary for application of the described techniques.

The book is well written and may be recommended to students of sedimentary rocks, especially of the unconsolidated and poorly consolidated deposits. The purpose of all the described techniques is, firstly, to protect from destruction the structures one tends to study, and, secondly, to render their properties and character clearer for the observer. The student himself, however, when choosing any of described techniques, must have an a priori clear understanding of the aim of his study and of the problem he is attempting to solve.

Anna Siedlecka

TOM. F. W. BARTH: *Feldspars*. – Wiley Interscience Publishers, New York-London-Sydney-Toronto, 1969. 261 pp.

Professor Barth was born on May 18th, 1899, and I received this book for refereeing on his 70th birthday. Though Professor Barth has worked on many aspects of petrology, the feldspars have been his special 'love', and he has contributed significantly to most aspects of the feldspar mineralogy. Thus, there are references to his own papers in all six sections of this book. I do not know how many papers Professor Barth has written on the subject of feldspars or when his first paper was published. In his book he refers to 20 of his own papers, the first one written in 1928 (Über den monoklinen Natronfeldspat. *Z. Krist.* 69) and the last one in 1968 (Additional data for the two-feldspar geothermometer. *Lithos* 1). With this background in mind, it is specially interesting to pick up his book. Knowing Professor Barth's style of writing, I was not surprised to find that the book is well written and organized in a logical way. A number of informative illustrations greatly enhance the text. It is admirable that he has managed to keep the size of the book down to such a reasonable length. This has been achieved through a very concise style, always to the point. Sometimes, because of this, the sentences are too short and choppy. On occasion he assumes a considerable pre-knowledge of the subject matter from the reader if his logic is to be followed. He generally sticks to facts and seldom speculates about anything. This helps to keep the length down, but one occasionally misses his well-known imaginative thinking. Thus, for instance, there is little or no emphasis on the 'role' of feldspars in petrology – as in the origin of granite. Also, though he refers to some of his papers on the 2-feldspar geothermometer, it is in other contexts, and this interesting subject to which he has contributed so much is only indirectly discussed.

In a book of this type it is probably unavoidable that all sides of the problem are not discussed in the same detail. Even accepting this, it was disappointing to me that the 'geochemistry' and 'isotope-chemistry' of feldspars are completely excluded. Otherwise, topics that are only sketchily discussed in the text (for instance, weathering, shock metamorphism) are well referenced. The extremely good documentation and wealth of references are, in fact, amongst the most attractive features of the book (all impor-

tant papers up to 1967 seem to be mentioned). In the text there seems to be considerable emphasis on older literature and less on the newer literature, although it *is* referenced.

The six sections comprise: 1. General mineralogy and classification of the rock-forming feldspars (50 pp.); 2. Survey of pseudosymmetry and twinning (27 pp.); 3. The structure of feldspars (58 pp.); 4. Physical properties of feldspars (41 pp.); 5. Thermodynamic properties of feldspars (49 pp.); 6. Historical notes and old names (11 pp.). I consider too much space was used on section 4 but much too little on section 5. In the latter section, the author presents a large number of phase diagrams (55) without tying them together or discussing their significance.

In summary, this book will serve well as a reference to most problems concerning feldspars. Even though it may not give the answer to the specific problem one is looking for, one will in the majority of cases find references to sources where the pertinent information is presented.

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