considerable interest are those by Rosenfeld (optical model), Breit (nucleon transfer reactions), and Blair (inelastic excitation of collective modes).

The conference discussions appear to be well reported, and there is a fine conference summary by Blair. Professional nuclear physicists will find this volume a necessity.

PAUL GOLDHAMMER
Department of Physics,
University of Nebraska

Hydrobiology

Biology of the Seas of the U.S.S.R. L. Zenkevitch. Translated from the Russian by Sophia Botcharskaya. Interscience (Wiley), New York, 1963. 955 pp. Illus. $25.

Although Russian hydrobiologists established a high degree of competence and began a systematic study of the marine and brackish waters of the seas of their land before the Revolution, and have kept up this tradition to the present day, the vast bulk of the published literature has been inaccessible to most of us outside the Soviet Union. Not only is the language barrier formidable, but many of the journals and monographs are not in our libraries. One suspects that, with the great expansion of work in marine biology, access to this literature may be difficult in the Soviet Union too and that this well may be one of the reasons Zenkevitch undertook this unique summary of the literature. This book is not simply a review of literature; it is a critical, well-balanced analysis of a prodigious quantity of information, and its like is not to be found in any other country. It was originally published in 1947 as volume 2 of *The Fauna and Biological Productivity of the Seas.* A revised edition, *Biologiya Morei SSSR*, was published in the Soviet Union in 1963, the same time that the translation of the English edition was underway. This English version therefore is not an exact translation of the 1963 Russian edition (the arrangement of some parts and the tables and illustrations selected for use are not the same in the two versions), although both volumes have essentially the same scope and coverage.

The book is organized geographically, with accounts given of the northern (the Baltic and Arctic seas, including the Chukchi Sea), the southern (including the Caspian and Aral seas), and the far eastern seas (including the Bering Sea), in that order. Each section begins with a treatment of the general characteristics and the geological history of the area, followed by detailed discussion of the separate seas, with particular reference to quantitative studies. There is a wealth of information on numbers of species and specimens and biomasses of phytoplankton, zooplankton, and benthos for the various regions studied in detail, as well as data on physical and chemical factors. As the author regretfully notes in his preface, many theoretical and general matters relating to marine biology and ecology generally had to be omitted from this version. Also lacking is a discussion of the quantitative methods themselves. All Russian references in the 52-page bibliography have been translated.

This volume is so useful and welcome to English-speaking marine biologists that it seems impolite to complain about the quality of the translation. However, the translator is obviously not versed in the field, and there are spots which are more literal than necessary; indeed they are occasionally obscure. There are not too many typographical errors for a book of this size, and most of them will be obvious to the reader.

JOEL W. HEDGPETH
Pacific Marine Station,
Dillon Beach, California

National Clay Conference

Clays and Clay Minerals. Proceedings of the Tenth National Conference, held at Austin, Texas. Ada Swineford and Paul C. Franks, Eds. Pergamon, London; Macmillan, New York, 1963. xii + 509 pp. Illus. $15.

This excellent volume contains the papers presented at four symposia plus those presented at a general session of the Tenth National Clay Conference in October 1961. The first symposium was concerned with bentonites and Texas uranium deposits. Unfortunately, there is only an abstract of the first paper, which was concerned with Wyoming bentonites. The second paper, by Iiyama and Roy, gives the results of controlled syntheses of mixed-layer minerals; the results indicate that at pressures below 0.5 kb and 1 kb, mixed-layer structures with a random stacking result, whereas, at pressures of 3 kb, highly ordered mixed-layer phases can be obtained. In the third paper Weeks and Eargle consider the mode of origin of uranium deposits in the Southeast Texas Coastal Plain. In the final paper, Konta describes some improvements in his imbibometric method for identifying clay minerals.

Seven papers on the occurrence and origin of vermiculite were presented at the second symposium. Other papers consider the composition of vermiculites, and an excellent paper, by Norrish and Rausell-Colom, presents the results of a low angle x-ray diffraction study of the swelling of montmorillonite and vermiculite.

The third symposium was concerned with clay-organic complexes: the mechanics of the reactions leading to the formation of clay mineral-organic complexes, the structural aspects of the inter-layer complexes, and the hydration and swelling of such complexes.

At the final symposium eight papers on the industrial application of clay mineralogy were presented. They contain excellent summaries of the various industrial uses of kaolinite, montmorillonite, and attapulgite clays. Further, there are specific reports on the use of clay minerals in the ceramics and petroleum industries.

The 13 papers presented at a general session cover topics that range from the radiation damage of kaolinites to the occurrence and origin of the properties of various clay minerals. Finally, in an appendix, there is a history of the National Clay Mineral Conferences and a discussion of the plans that have been developed for future conferences.

RALPH E. GRIM
Department of Geology,
University of Illinois

Engineering

Electronic Instrumentation. Sol D. Prensky. Prentice-Hall, Englewood Cliffs, N.J., 1963. x + 534 pp. Illus. $13.35.

Most of the important instruments used in technical laboratories today are considered in Prensky's very complete, logically presented, qualitative discussion, which those who have a minimum knowledge of electronics will find easy to follow. Thus, the book will serve as an excellent reference source for technicians and possibly could be used as a textbook in technical training courses.