The physics and chemics of biology are extremely simplified, but that is necessary for hosts of students who have never studied physics or chemistry even in high school. The fundamental aspects of the structure, function and life history of organisms constitute major threads for the presentation. The classification of organisms and the major groups of the two kingdoms are given adequate and discriminative space and treatment. The brevity of treatment of such broad topics as variation, evolution, genetics, environmental relations will disappoint specialists in those phases. But the same reaction will follow the examination of the book by special workers in other lines of research. We simply must let ourselves down to the level of the audience which presents itself for instruction in *general* biology. Eight out of every ten of that group have never taken any other course in science. Less than that number will ever take additional courses in the more specialized sciences. The authors of this book seem to have caught the significance of this situation and have tried to select their material and to treat it so as to fit the audience. It is apparently with a keen understanding of the limitations of their audience that the authors assumed this important task. A constant emphasis upon the essential and the usable features of general biology clearly reflects this point of view.

There are several unfortunate blunders and lesser errors in the book. We need not enumerate them here. These may all be corrected in a second printing. We do not favor the inclusion of lists of "selected references," as is generally done after each chapter in the book. Mighty few students even look *at* them, much less look them *up*. In fact little time is available for this extra work. The value of such inclusions is to the teacher only. Few teachers ever use such values. The etymology and definition of many terms and words are given, as a rule, where they are first used. A formal glossary is omitted. Our experience teaches us, however, that numerous students use and benefit from a carefully prepared glossary. The book is well manufactured. The typography is well selected for the student and teacher. Many of the plain figures are new, generally well done and of great value. The colored plates are certainly welcome.

On the whole this book is admirable for a two-semester course. It should go a long way to aid teachers and administrators to solve the difficult problems associated with the presentation of so general a topic in the curriculum of higher education. We are using it with success.

RAYMOND J. POOL

UNIVERSITY OF NEBRASKA

SEDIMENTARY PETROGRAPHY

Manual of Sedimentary Petrography. W. C. KRUMBEIN and F. J. PETTIJOHN. 549 + xiv pp., 265 figs. D. Appleton-Century Company, New York, London, 1938. Price, $6.50.

UNTIL recently, petrographers have neglected the study of the sedimentary rocks, as they were considered uninteresting and it was believed that their study would lead to few results of general interest. However, in the last two decades interest in these rocks has grown rapidly and now sedimentary petrography is an active and well-developed science. It is actively contributing to the precise correlation of strata; to our knowledge of diastrophism, the location and character of old land masses, the source of the materials of the sediments, the former climatic conditions and many other problems.

The excellent book under review shows how far the new science has developed; in some respects its methods are already more quantitative than are those used in the study of the igneous rocks. As stated in the introduction, "The purpose of the book is to present theories and methods of examining sediments, from the field sampling to the final graphic and statistical analysis."

The first part by Krumbein discusses the collection and preparation of samples, the principles, methods and graphic presentation of mechanical analyses, statistical methods as applied to the data of sedimentary rocks and orientation analyses of sediments. The second part by Pettijohn treats of the shape and surface textures of grains; preparation of samples for mineral analyses, such as disaggregation and clarification of grains; separation methods by heavy liquids, the electromagnet and other methods; optical methods; mineral description and determinative tables; mineral frequencies; chemical methods; and the mass properties of sediments, such as color, density and porosity. The final chapter deals with equipment, reference books, etc.

The book is clearly written and well organized; it covers its field admirably and includes the latest developments in a rapidly progressing science. It should become a widely used text and reference book.

ESPER S. LARSEN, JR.

HARVARD UNIVERSITY

SOCIETIES AND MEETINGS

SPECIAL RESEARCH CONFERENCES ON CHEMISTRY

THREE research conferences on chemistry have been organized by Dr. Neil E. Gordon, secretary of the Section on Chemistry, which will be held at Gibson Island, Maryland, between July 10 and July 28, under the auspices of the American Association for the Advancement of Science. These conferences follow a

similar conference held last summer in the same place that proved to be very successful.

In organizing these special research conferences, Dr. Gordon has initiated a kind of meeting that is entirely new and that promises to be effective in promoting the interests of science. For this reason the officers of the association have given this experiment their approval. It is quite possible that there are other kinds of conferences, meetings or field trips that the association might sponsor or in which it might participate to the advantage of science. Like science itself, the association should not be static but always experimenting and alert for new ways of advancing science and our civilization.

The programs of the conferences at Gibson Island are as follows:

RESINOUS POLYMERS

(July 10–14)

L. H. Baekeland, *Honorary Chairman;* Howard L. Bender, *Chairman*

July 10. "Introduction," by L. H. Baekeland, Bakelite Corporation, Bloomfield, N. J.
"The Physical Viewpoint of Resinous Particles as to Size and Linkage," by Howard L. Bender, Bakelite Corporation, Bloomfield, N. J.
Leader of discussion of preceding paper, Tom Midgley, Ethyl Gasoline Corporation, Detroit, Mich.
Dinner at 7:00 P.M. in honor of Dr. Baekeland.

July 11. "The Infusible Resinous State," by R. H. Kienle, The Calco Chemical Company, Inc., Bound Brook, N. J.
"Conditions for Infusibility," by S. S. Kistler, Norton Company, Worcester, Mass.

July 12. "The Resinous Vinyl Compounds," by S. D. Douglas, Carbide and Carbon Chemicals Corporation
"Polystyrene," by Ivy Allen, Bakelite Corporation, Bloomfield, N. J.

July 13. "The Structure of Some Vinyl Polymers," by C. S. Marvel, University of Illinois, Urbana, Ill.
"Spectroscopy and Resin Structure," by R. B. Barnes, American Cyanamid Company, Stamford, Conn.

July 14. "Electronic Structure and the Behavior of Cellulose Compounds," by G. M. Kline, National Bureau of Standards, Washington, D. C.
"Viscosity and Constitution of High Molecular Weight Substances," by P. J. Flory, University of Cincinnati, Cincinnati, Ohio

VITAMINS

(July 17–21)

C. G. King, *Chairman*

July 17. "Problems and Policies in Relation to the Vitamins in the Enforcement of the Federal Food, Drug, and Cosmetic Act," by E. M. Nelson, U. S. Department of Agriculture, Washington, D. C.

July 18. "The Biochemical Reactions of Vitamin C," by C. G. King, University of Pittsburgh, Pittsburgh, Pa.
"Vitamin B_1 (Thiamin) Analysis, Assays and Specific Functions," by R. R. Williams, Bell Telephone Laboratories, New York, N. Y.

July 19. "The Identity and Function of the Newer Members of the Vitamin B Group," by C. A. Elvehjem, University of Wisconsin, Madison, Wisconsin
"The Hydrogen Carrier Function of the Vitamins, Limited to Riboflavin and the Nicotinic Acid Amide Containing Coenzymes," by C. V. Smythe, University of Pennsylvania, Philadelphia, Pa.

July 20. "Vitamin A," by K. Hickman and E. Le B. Gray, Eastman Kodak Company, Rochester, New York
"Physiological Functions of the Vitamin A," by George Wald, Harvard University, Cambridge, Mass.

July 21. "Vitamin D," by C. E. Bills, Mead Johnson and Company

RELATION OF STRUCTURE TO PHYSIOLOGICAL ACTION

(July 24–28)

Walter H. Hartung, *Chairman*

July 24. "Local Anaesthetics," by Arthur J. Hill, Yale University, New Haven, Conn.

July 25. "Sulfanilamide Derivatives," by The Calco Chemical Company, Inc., Bound Brook, N. J.

July 26. "Relationships Between Physiological Action and Constitution in a Series of Morphine Derivatives and Synthetic Analgesics," by Lyndon F. Small and Erich Mosettig, University of Virginia, University, Va.

July 27. "Certain Significant Physico-Chemical Factors in Cell-Drug Reaction," by M. E. Krahl and G. H. A. Clowes, The Lilly Research Laboratories, Indianapolis, Ind.
"Hypnotics," by W. G. Bywater, Parke, Davis and Company, Detroit, Mich.

July 28. "The Carcinogenic Activity, Structure and Chemical Properties of Polynuclear Aromatic Hydrocarbons," by L. F. Fieser, Harvard University, Cambridge, Mass.

The meetings begin at 10 o'clock, with one or two formal papers outlining the fields of research and directing attention to the unsolved problems. Since not more than two papers are given on any one day, it is possible to have the discussion of the papers not limited in any way. The program will also permit time for certain recreational features which the island affords.

Since the accommodations on the island are limited, it is advisable to make reservations in advance. For reservations or further information, application should be made to the secretary, Neil E. Gordon, Central College, Fayette, Mo.

F. R. MOULTON

REPORTS

GRANTS FOR RESEARCH OF THE GEOLOGICAL SOCIETY OF AMERICA

TWENTY-EIGHT grants in support of special research projects were authorized by the council of the Geological Society of America at the April meeting, as follows:

Ralph E. Grim, Illinois State Geological Survey, Urbana. Dr. Grim's well-known exhaustive studies of clays of Illinois have developed a strong interest in the genesis and evolution of the several minerals of the clay groups. In the main, however, materials available to him until now were from the Pennsylvania underclays. With this grant from the society he will have the opportunity to apply his researches to large collections of recent marine clays taken from the floor of the Pacific, $1,800.

Charles A. Anderson, University of California, Berkeley, and Charles W. Merriam, Cornell University, Ithaca, N. Y. Dr. Anderson and Dr. Merriam will spend five to six weeks during the coming summer in the Roberts Mountains, one of the Basin Ranges of western Nevada, rechecking the distribution of Tertiary volcanics and their relationship to the later faulting. An important key to the later structural history of the central Great Basin may be disclosed. Stock-like bodies and sills of alaskite porphyry cutting the Paleozoic formations in the southern portion of the range present a number of interesting problems of petrogenesis to be worked out. $600.

Louis L. Ray, Harvard University, and J. Fred Smith, Jr., Texas Agricultural and Mechanical College. Dr. Ray and Dr. Smith plan to spend ten weeks in the Moreno Valley in the Sangre de Cristo Mountains of northern New Mexico on a study of the tectonic history of the vicinity. This is considered a critical area for the study of the orogenic history of the southern Rocky Mountains. $650.

S. A. Berthiaume, Cornell University, Ithaca, N. Y. Dr. Berthiaume will go to Diamond and White Pine mountains of east-central Nevada to make a detailed study of the late Paleozoic stratigraphy of, and establish a typical section for, that part of the Great Basin. His work will contribute to our knowledge of the late Paleozoic physical conditions, the structure and volcanic history of the Great Basin, and, it is hoped, may disclose an identifiable flora in the white pine shade in which fragmentary plant remains are known. $250.

Ralph W. Chaney, University of California, Berkeley. Dr. Chaney will assemble all the available data on the character and occurrence of late Tertiary vegetation in western America. This is expected to fill out a little-known chapter of floral history. It will have a critical bearing on the interpretation of later Tertiary vertebrates and invertebrates and will assist in the correlation of several of the terrestrial formations of the region. $600.

N. H. Darton, U. S. Geological Survey, Washington. Dr. Darton will continue his field studies of the overlap relations of the Tertiary and Cretaceous formations in eastern Maryland and Virginia. During the course of the study to date several very significant stratigraphic features in the Eocene succession which throw considerable light on the structure and overlap relations have been made manifest. $450.

Victor T. Allen, St. Louis University. Professor Allen will devote several weeks to field work on the west side of the Great Valley of California collecting samples of Eocene white clays and sands. The samples will be studied petrographically, chemically and by x-ray technique, and comparisons will be made with results already in hand from the Ione formation on the east side of the valley. The research is an attempt to answer the question as to whether during the Eocene Sierran minerals were carried across what is now the Great Valley or whether anauxite clays formed at nearly the same time on two widely separated terranes. The results will be a contribution to the physiographic and climatic conditions during the Eocene. $500.

Robert P. Sharp, University of Illinois, Urbana. Dr. Sharp will go to the Ruby-East Humboldt Range of Nevada for two months of field work in completing his study of the boundary structures and Cenozoic history of this Basin Range. The study is expected to contribute to the relations between pre-Tertiary and Basin Range structures. Furthermore, in the southern part of the range the formations are unmetamorphosed, and it will be possible to establish the stratigraphy and thereby contribute to studies in the northern part, where igneous intrusions have cut the formation to pieces. $310.

F. J. Pettijohn, University of Chicago. Professor Pettijohn will continue his study of the lithology and stratigraphy of the early pre-Cambrian sediments in the Thunder Lake region of Ontario. He expects to spend three or four weeks in the field on a special study of the occurrence of calcareous concretions and limy beds and to make special collections for petrographic and chemical analyses. The record of concretions in the early pre-Cambrian is scanty, and Professor Pettijohn plans to contribute data on these to support the doctrine of uniform operation of geological processes throughout geologic time. $175.

Curtis J. Hesse, Texas Agricultural and Mechanical College. Dr. Hesse is to study a collection of fossil vertebrates from the Gulf Coast of Texas. His report on this collection will provide a means of correlating the marine Miocene invertebrates of the Gulf Coast with the fresh-water Tertiary of the mid-continent and allied faunas of Florida. $500.

Henry C. Stetson, Harvard University. Dr. Stetson's work with the Woods Hole Oceanographic Institution during the past two years has included the taking of about fifty cores from the continental slope and in the Atlantic basin by means of the "Piggot gun." The study of the cores is contributing to our knowledge of