
BOOK REVIEWS

Environment of the Cape Thompson Region, Alaska. *N. J. Wilimovsky and J. N. Wolfe*, eds. U.S. Atomic Energy Com., Washington, 1966. xvi+1250 p. illus.+6 pl. Available as PNE-481 from Clearinghouse for Federal Scientific and Technical Information, National Bureau of Standards, U.S. Dept. of Commerce, Springfield, Virginia 22151. \$9.25.

In 1958, the U.S. Atomic Energy Commission, attempting to develop peaceful uses for nuclear explosives, proposed to excavate experimentally a harbor along the western Alaskan coast just south of Cape Thompson, a hundred miles north of the Arctic Circle. This project, Project Chariot, was to involve detailed ecological surveys of the area, both before and after detonation, but no explosion was made, so no post-detonation data are available. The vast array of pre-detonation material, however, comprises a volume almost three inches thick.

It is impossible to adequately review such a volume. Over 70 scientists from a variety of federal, state, and educational organizations have contributed 42 scientific reports, which are listed under eight major topics, including: the physical and biotic aspects of the land, of the coast, and of the sea, and surveys of the people and of the area's radioactivity. Six large maps covering the geography, geology, engineering geology, soils, vegetation, and radioactivity of the area are in the back pocket.

Basically, this 38-square-mile area, underlain by Paleozoic-Mesozoic sedimentary rocks and characterized by 46 different soils and by permafrost to depths of 100 feet, is tundra. Vegetation is primarily sedges, grasses, heathers, mosses, and lichens, with their distributions closely related to topography, drainage, and soils. Animals include zooplankton and larger forms: birds, fresh-water and salt-water fish, caribou, and several marine mammals. Throughout all the individual papers, the strong interdependence of all the various physical and biotic systems is clearly evident.

This volume is unique both in the completeness of its ecological survey of one small area in coastal Alaska and, more important, the example it gives of the great value of integrated ecological analysis by a team of competent inter-communicating specialists.

JANE L. FORSYTH

Bedrock Geology of Wayne County, Ohio. *H. Gray Multer*. Report of Investigations No. 61, Ohio Geological Survey, 1207 Grandview Ave., Columbus, Ohio 43212, 1967. Folded colored map with text on sheet. \$1.13.

This map shows the distribution of the bedrock formations of both Mississippian and Pennsylvanian age. In addition, a stratigraphic column, a cross section, and a discussion of the mineral resources are given. Oil and gas are produced from four separate horizons. Shale, limestone, coal, salt, sand, and gravel are currently produced and there are reserves of sandstone.

OHIO GEOLOGICAL SURVEY

THE OHIO JOURNAL OF SCIENCE 67(5): 318, September, 1967.

Biosynthesis of Small Molecules. *George M. Cohen.* Modern Perspectives in Biology, Harper & Row, New York, Evanston and London, (paper), 1967. vii+108 p. \$5.95.

This book is divided into ten chapters, one dealing with Methodology, two with the biosynthesis of amino acids, and five with biosynthesis of nucleotides, deoxynucleotides and their bases, fatty acids, polysaccharides, sugars in photosynthesis, and vitamins and coenzymes. The last two chapters are devoted to regulation of biosynthesis.

In the introduction, the author defends his restriction of material to that from studies of bacteria. Here he also deals with the problem that reactions yielding "high energy" compounds needed to derive biosynthetic reactions also yield the carbon precursors of biosynthesis, and comments that, while arbitrary separation of these facets may be done for convenience of presentation, it has no basis in the economy of the cell.

Within this framework, the author has put together an excellent summary of the current knowledge of biosynthesis of small molecules and of the principles of regulation of the pathways and methods of investigation used. Because it is a summary, this volume will be of most use to biologists who are only generally interested in biochemistry. There is also excellent access to detail through the references cited at the end of each chapter. The chapters are well stocked with structural formulae which show the transformations occurring during biosynthesis. There are a few typographical errors; for example, on p. 16, proline is shown with a double bond, and, on the top of p. 49, the formyl group is missing from 5-formamido-4-imidazole carboxamide ribotide. It is also excessive to imply that pyridoxal-phosphate-mediated decarboxylation of amino acids is freely reversible (fig. 2-2 on p. 14). These however detract little from the presentation.

The value of this little book will be considerably enhanced if companion volumes in this series are produced which deal with the fate of these small molecules in the cell, the production of higher energy compounds, and the regulation of these reactions and enzymes. However, these companion volumes would lead to a fairly expensive series of books if the current price is a guide.

DONALD K. DOUGALL

Wildlife Biology. *Raymond F. Dasmann.* John Wiley & Sons, Inc., New York, 1964. 231 p. \$5.95.

Designed as a text for an undergraduate course in wildlife management, this book presents basic ecologic concepts, mainly terrestrial, applicable to management problems, rather than techniques or administrative principles. Dasmann, who teaches at Humboldt State College and formerly taught at the University of California, has drawn heavily from material presented in his classes at both of these California institutions; Chapter II uses California as an example to demonstrate a typical history of the development of wildlife conservation problems. Other topics considered in the 10 chapters are: wildlife habitat, wildlife population characteristics, wildlife territory and migration, and dynamics and regulation of wildlife populations. The ecology presented in this book is sound and perceptive, and the application of ecologic principles to management problems is effective.

The text is clear and well written. Although prepared as a textbook, anyone with an educated interest in wildlife would find it interesting, informative, and easy reading. The illustrations are good; the pictures at each chapter heading (mostly by Jim Yoachim) are outstanding. References are listed by chapter at the end of the book.

This is a fine, informative book for either the professional concerned with ecology or wildlife management or for the informed layman interested in the wildlife of our state and national parks and forests. It is most of all, says the author, quoting Aldo Leopold, a book "for those who cannot live without live things."

JANE L. FORSYTH

Bedrock Geology of the South Bloomingville Quadrangle, Hocking and Vinton Counties, Ohio. *Richard M. DeLong.* Report of Investigations No. 63, Ohio Geological Survey, 1207 Grandview Ave., Columbus, Ohio 43212, 1967. Folded colored map with text and photos on sheet. \$1.13.

The are of the South Bloomingville quadrangle lies in the rugged unglaciated hills of southeastern Ohio. Canyons and cliffs carved by streams in the coarse Mississippian sandstone provide the scenic features of the Hocking Hills state parks. The southeastern part of the quadrangle is underlain by Pennsylvanian strata, including some coal beds. Gas is the principal mineral resource. This report consists of a colored geologic map (scale 1:24,000), with a stratigraphic column, a cross section, and a discussion of the mineral resources on one side of the sheet. On the other side are colored photographs of scences in the Hocking Hills state parks, a geologic history of the area, and a section on man's use of the land.

OHIO GEOLOGICAL SURVEY

Milk Production in Developing Countries. *Robert Orr Whyte.* Frederick A. Praeger, New York, 1967. 240 p. \$10.00.

The author has long been intimately involved with many agricultural problems in developing countries, but his bibliography reveals a bias towards animal feeds and dairying. Consequently, he is well equipped to write this semi-technical volume dealing with the problems and prospects of dairying in tropical and sub-tropical countries. Whyte recognizes physical, cultural, and economic handicaps which limit animal protein production and hamper overall development. Environmental problems relating human, plant, and animal ecology are emphasized, as illustrated by the chapters, "Plant Growth and Environment" and "Animal Husbandry and Environment," but topics such as "Economics of Milk Production" provide added breadth. The longest chapter deals with twenty-five country case studies which illustrate the problems. His selection of areas discussed should be representative of the chosen regions: Mediterranean and Near East, Monsoon Asia, Caribbean and Latin America, and Africa South of the Sahara; however, the author admits that the choice of countries was governed primarily by accessible data. Hence, many disappointing omissions were made.

The book's capstone might appear to be the terminal chapter, "Survey, Analysis, and Action," but these few pages seem anti-climactic, following the more interesting regional representations. This book would have been greatly enhanced by increased use of illustrations. Only nine figures were included. The footnoting system referring to numbered selections from the bibliography was probably an economy for the printer, but it becomes a frustration for the reader. This volume will be valuable to all with a general interest in tropical development.

GEORGE P. PATTEN

The Changing Concepts of Modern Science. *Hugh Grayson-Smith.* Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1967. xv+624 p. \$9.50.

This book by Professor Emeritus Grayson-Smith was developed from a series of lectures on physical science given over a period of several years at the University of Alberta. As stated in the preface of the book, "the course was designed for students majoring in the humanities and social sciences, and for students in education."

The thirty five chapters of the book are divided into seven parts, the first five covering the fields of astronomy, physics, chemistry, and geology. In part six—"The changing cosmos"—the author presents theories and concepts of both inorganic and organic evolution, and in part seven he summarizes concepts of "modern physics" of the twentieth century as opposed to the "mechanistic approach" or the "classical physics" of the eighteenth and nineteenth centuries.

This is a fine textbook that presents the physical sciences at a higher level than that of high school science courses. It will serve as a very adequate physical science textbook for the type of college course for which it is designed. It will also be useful as a reference about modern physical sciences.

T. J. JOHNSON

Water Inventory of the Hocking River Basin, Shade River and Leading Creek Basins, and adjacent Ohio River tributary areas. Ohio Water Plan Inventory, Report No. 19, Ohio Dept. of Nat. Res., Div. of Water, Columbus, Ohio. 96 p+vi. 1966. \$4.00.

This publication is one in the Ohio Water Plan Inventory series of Ohio's Division of Water. Like others in this series, this thick wire-bound book contains a very complete survey of all aspects of the water resources and associated considerations of the Hocking River basin area, which lies mostly in the hilly, unglaciated area of southeastern Ohio, stretching from west of Lancaster southeast through Athens to the Ohio River.

The book is divided into six sections, which deal with: (1) the historical, economic, and geological setting of the area; (2) the water supply, its sources (wells and streams) and its quality (influenced by natural chemicals and man-produced pollution); (3) water use, i.e. sources, demands, and future plans for each municipal and rural demand; (4) the problem of floods and flood control; (5) watershed management, mainly a consideration of the general soils areas present and the recommended soil conservation measures; and (6) a consideration of the future. The report is very complete and contains much valuable material, which is well organized in the text, and in charts and tables, material which will be of great value to the scientist, sociologist, and regional planner.

This particular report deals with water problems, mainly droughts and floods, along the Hocking valley, especially those destructive floods produced in Athens by the unfortunate location of high-value Ohio University buildings on the floodplain. Recommended flood control measures include the relocation, straightening, and enlarging of the river channel at Athens and the construction of a number of dams, largest of which will be Logan Dam in Clear Creek valley, one of Ohio's most beautiful deep wooded gorges. Sites are also given for other, smaller dams, multi-purpose dams designed to provide flood protection, water supply, and the recreational sites which are presented as the major financial resource of the Hocking River basin in the future.

JANE L. FORSYTH