Microbial Aspects of the Deterioration of Materials


This book is a compilation of papers covering methods and techniques for recognizing and evaluating microbial deterioration of a variety of materials and isolating the responsible microorganisms. Individual chapters cover the microbial deterioration of a wide range of materials including wood, metals, aircraft fuels, petroleum products, pipe wrappings and coatings, wool, rubber, tobacco, pharmaceutical products, and footwear. The content of each chapter had originally been presented by the authors at a demonstration meeting of the Society for Applied Microbiology held in London, England in October 1973. The necessity for initially preparing the chapter contents for a demonstration to the conference participants is probably responsible for the excellent organization, readability, and illustrations found within the book.

It is this reviewer's opinion that this book will be of limited value to those individuals who regularly read or contribute to the Journal of Environmental Quality. Although some of the chapters deal with individual microorganisms or groups of microorganisms found in soil or aquatic environments, the processes and degradative activities described are on the periphery of the normal research interests of environmental, soil, or aquatic microbiologists. The books primary value will be as a techniques handbook for individuals working directly in the area of biodeterioration.—R. H. MILLER, Department of Agronomy, The Ohio State University, Columbus, OH 43210.

Structure and Function of Tundra Ecosystems


This book, like many lately, is a compilation of papers presented at an IBP meeting. In this case, the meeting was the Fifth International Meeting on Biological Productivity of Tundra, held at Abisko, Sweden in April 1974. This volume is one of two resulting from the meeting. Here, papers "...summarising the functional characteristics of the individual sites within the Tundra Biome" are presented. The other volume will examine between-site comparisons.

This volume is doubly difficult to review. First, because it is a collection of papers, the reviewer is faced with making sensible, unified comments regarding a work that by its construction has diversity. Second, the volume is a summary of structural and functional characteristics of various sites. Reading it is similar to reading a catalog, where specifications for an item are listed with some commentary. Unless you are interested in a specific item, reading catalogs isn't all that much fun. The same is true here. As one mentally visits tundra sites from near sea level to alpine and from Arctic to Antarctic, the specifications tend to merge and only bits of commentary remain to help retain perspective.

The editors and individual authors should be complimented, however. The book hangs together well, even though a range of nationalities and training is represented. Part of the unity is achieved by using a similar outline for all papers, including such topics as environmental conditions, primary production, herbivores, carnivores, decomposition and soil processes, interaction between aquatic and terrestrial ecosystems, and overview of the ecosystem and man's influence upon it. Other topics such as energy flow and nutrient cycling are included, depending on the work done at individual sites. The volume is only a list of places and page numbers for a specific topic it must be searched for in each chapter. The coming volume of intersite comparisons will hopefully alleviate this problem.

The comments thus far refer to 15 of the 16 chapters in the book. The final chapter describes a computer simulation of carbon flux in tundra, using data from Barrow. In location, this chapter may be designed to unify what was done not; instead it stands alone. In addition, describing a quantitative model with words is nearly as great as initially developing the quantitative model from words.

The volume is softbound, with a picturesque printing. The type face, figures, and printing are crisply easy to read. There are a minimum of typographical errors. My notes mention only two; one is a typographical error. The impression that more coherent data are available for tundra sites than for a series of sites in what is considered to be the over-studied temperate zone.

This book is a good investment for a library. As one perusing papers or others comparing ecosystems should. Unless you are really involved in tundra work, whether it is worth a permanent spot on your shelf.

GRIGAL, Department of Soil Science and Crop Protection, University of Minnesota, St. Paul, MN 55108.

Proceedings of the First International Congress on Ecology: Structure, Functioning and Management of Ecosystems

By A. J. Cavé, Congress Secretary, Centre for Agriculture Publishing and Documentation, Wageningen, The Netherlands. 1975. 414 pages. $20.00 paper bound.

The First International Congress of Ecology was held in The Hague, The Netherlands, 8-14 Sept., 1974. The congress was to bring together ecologists from many natural and manmade ecosystems and disciplines such as limnology, botany, zoology, atmospheric influence by human and other activities, and with strategies for management of natural and manmade ecosystems. The congress was organized by the Association for Ecology (INTECOL), Division of Environmental Biology of the International Union of Biological Sciences (IUBS). The principal goal was to provide a stage for the exchange of ideas and understanding and close cooperation among the different disciplines represented at the meetings.

These proceedings consist of a preface, presentations of papers and index. The program was divided into the main sessions of B and E (no A and D). The contributions to the A session dealt with the basic concepts and techniques of energy flow, productivity, diversity, stability, and the influence of human and other activities, with the management of natural and manmade ecosystems. The conference was to achieve a more complete understanding of the processes and interactions upon which ecosystems depend; to explore the possibility for human intervention in ecosystem structure and functioning; and to evaluate the impact that human activities are likely to have on the stability and productivity of ecosystems.

The papers were grouped into four sessions: session A (A, B, and E) and E (no D). The contributions to the A sessions investigated dealing with unifying concepts in energy flow, productivity, diversity, stability, and the influence of human and other activities, and the management of natural and manmade ecosystems. The contributions to the E sessions were presented in this session. The conference attempted to present an overview of research results and recommendations for thousand research projects of the International Biodiversity Programme. In fact, these sessions were organized by the Division of Environmental Biology of the International Union of Biological Sciences (IUBS).