Chapter 13, which discusses fertilizer application fundamentals, is little different from the earlier edition with the exception of updated references and data. Such topics as fertilizer placement, movement, salt index, root development, time of fertilizer application, nutrient utilization, the use of fluid fertilizers, etc. are discussed.

Chapters 14, 15, and 16 are devoted to soil management, moisture utilization, and the economics of land and fertilizer use. Little change was apparent from the previous edition with the exception, again, of updating to include the latest experimental data. Unfortunately, as with any text dealing with economics, the dollar and cent cost-return figures are valuable only as illustrations. With the constantly changing economic picture, particularly during the mid 1970's, it would have been impossible to include values reasonably accurate for a long period of time. However, the classical relationships between fertilizer cost and crop value are thoroughly discussed and should be of value and interest to most readers.

The final chapter, number 17, is devoted to a discussion of how best to attack a soil fertility problem. Attention is focused on the principle considerations in preparing and carrying out the research project. Factors to consider and available tools for diagnosing and correcting soil fertility or plant nutritional problems in the field are also thoroughly considered.

In summary, the 3rd Edition of Soil Fertility and Fertilizers is one of the best, if not the best, soil fertility reference volume available today. The selected references, chapter summaries, and review questions provided at the ends of each chapter are excellent. Like its predecessors, this book is well written and should find a home in every agronomist's library whether he be a professional agronomist, a farmer, a student, or a layman with only a casual interest in soil fertility and fertilizers. Professor V. Allan Bandel, Department of Agronomy, University of Maryland Agric. Exp. Station, College Park, Maryland.

BOOK REVIEWS, continued

*Microbial Communities in a Forest-Rendzina Ecosystem*  
**The Pattern of Microbial Communities**  

According to the author, the purpose of this book is to contribute to the knowledge of the microbiology and microecology of a forest-rendzina ecosystem. The basis for this book is long-term observations on four selected study sites and laboratory investigations made between 1959 and 1972. Major emphasis were accorded to studies of microbial growth in relation to substrate, qualitative differences in the microscopic populations of soil, plant, and animal habitats, and the structural organization of the soil microbial populations. In addition, investigations were conducted on the role and importance of ecological associations between microorganisms and soil invertebrates, in the dynamics of soil forming processes.

The book is divided into seven chapters. The first two contain general background information necessary to acquaint the reader with the study areas. These descriptions include location maps, climatic data, soil parent material information, and to a certain extent the dominate soil organisms. Soil chemical and physical parameters were also summarized for each study location. Several color prints found at the beginning of the book were of outstanding quality and added significantly to the presentation of the descriptive information.

Chapters three through six constitute the bulk of the book. In my opinion these chapters give the impression of being research reports, rather than book chapters. Each chapter was organized along the lines of an: Introduction, Methods, Results and Discussion and Summary. Generally, there is a lack of continuity among the chapters. The work reported represents a great deal of research effort, but much of it was directed towards a taxonomic study of over 3000 isolates obtained from the study sites. However, it appears much of this kind of information is of limited value, particularly outside of the specific study areas. Furthermore, it is my opinion that this information was not used adequately to develop the main theme of the book which, simply put, involved elucidation of the microbial communities of forest-rendzina ecosystems. Unfortunately, there is no real attempt to synthesize the taxonomic information into a meaningful discussion of patterns in microbial communities nor is there any effort made to understand any unique biochemical properties that might be brought about by the distinct microbial communities present. It is in this respect I find the greatest weakness in the book. There is too little discussion of how various organisms and patterns of organisms fit into the unique situation of the forest-rendzina community. While a great deal of information has been generated about this special community, the synthesis of the information into meaningful concepts is lacking. The seventh and final chapter as an integrating summary of the microbial community in the forest-rendzina ecosystem is the most important; sadly, it is poorly presented.

In general the book is understandable, although some of the text is written in an archaic fashion. Technically, the book is well-edited and the line drawings easily comprehended. Some of the tables are unusually long which leads to some confusion. The paper is of high quality, but there were numerous printing smudges which detracted from the overall book quality. Also, the binding was of low quality. However, the book included a guarantee from the publisher for replacement if the book should have any deficiency or defect which would prohibit the normal use of the book irrespective of the time elapsed from purchase. My overall impression is that this book has value as resource material for libraries, however, I doubt many soil scientists would desire it for their own personal libraries.—A. G. WOLLM, II, Department of Soil Science, North Carolina State University.

*Geomorphology: Geomorphic Processes and Surficial Geology*  

The twofold justification for this excellent book is stated in the Preface: (i) To provide some insight into geomorphic processes, and (ii) to demonstrate their value in (i) studies of landscape genesis and (ii) analysis of environmental problems. The author is a seasoned geologist, geomorphologist, and pedologist. He has drawn on a useful array of professional papers and books. Entries in the bibliography number about 450. He has made good use of publications by himself and his many co-workers. Only about 226 pages of the 226 pages text are without figure or table. There are several figures of a given terrain showing in sequence: (i) drainage net map, (ii) altimetric map, (iii) map of stepped erosion surfaces, and (iv) soil map.

The eleven chapter headings are: Background and Preparation, Weathering and Soil Formation, Runoff and Streams, Aluvial Land Forms, Drainage Nets and Basins, Hillslopes, Erosion Surfaces, Wind and Eolian Landscapes, Shore Processes and Features, Glaciation and Landscapes, and Environmental Change.

This can serve nicely as a textbook in courses in soil science, geology, and physical geography. It can be used as a springboard for soil-landscape research planning.

The approach is quantitative and succinct (in places to a fault). This is a readable book, seemingly elementary, yet packed with information, concepts, techniques, and references.

—FRANCIS D. HOLE, Professor of Soil Science, Department of Soil Science University of Wisconsin-Madison.