This book will be of value to anyone in the solid waste management profession. It contains an enormous amount of pertinent information, is very readable, and is a perfect epilogue to the Mobro 4000 garbage barge cruise.—PATRICK B. O'CONNOR, Solid Waste Management Program, Tennessee Valley Authority, 270 Haney Building, Chattanooga, TN 37401.

Soil Organic Matter: Biological and Ecological Effects


Organic matter is one of the key components of soils, and it has been studied extensively. Most of the work, however, is related to the chemistry of this complex soil component. This text provides a basic introduction into the biological aspect of the existence of soil organic matter.

This hardcover book contains 14 chapters. Each chapter starts with an introduction to the subject, integrates the information available in the literature to highlight the important topics, and ends with a conclusion and a list of references. The drawings and tables are well prepared and simple to understand. Specific ecosystems, such as forest, grasslands, agricultural soils, and organic soils are discussed, and basic biological properties, including soil enzymes, humification, and lignin are examined. Major topics include: a study of the nature and sources of soil organic matter, important reactions in major ecosystems, biological mechanisms of soil organic matter transformations, a few major reactions of soil organic matter, impact of organic matter reactions on nutrient cycling, soil structure, trace metal mobility, and current environmental pollution and management problems.

The topics are covered with a gradient of complexity. Under each topic, the basic knowledge is introduced before the current understanding of the subject matter is discussed. Frequently, the information gradient from elementary to complex is steep. At other times, it appears to be rather horizontal. The book lacks the chemical and biochemical reactions needed to understand the complexity of soil organic matter. But, because other sources are available for the reactions involved, this book provides directions for future land use, ecosystem management, and reclamation plans. As such, the book should be useful to those interested in a relatively simple source of information about soil organic matter.—M.A. TABATABAI, Department of Agronomy, Iowa State University, Ames, IA 50011.

Environmental Radioactivity, Third Edition


This book, on its third edition, highlights the sources, emission, behavior, and biological and ecological effects of radioactivity from both natural and anthropogenic sources. As the title implies, the emphasis is on the environmental aspects of radio-nuclides and their eventual effects on biota, particularly humans.

In the book, which is intended to be primarily used as a reference, the author walks the reader through basic knowledge of radioactivity, history of radiation effects, radiation standards, and permissible doses. The author delves into some environmental aspects including transport mechanisms in the atmosphere, transport models, and transfer in the food chain through terrestrial and aquatic pathways. He then deals with the exposure of the public to various sources of radioactivity from both natural and man-made sources, such as reprocessing of spent-fuels (he actually elaborated on the whole nuclear fuel cycle), power reactors, buried (low-level) and stored (high-level) nuclear wastes, fallout from nuclear explosions, and miscellaneous sources that are consumer-related (e.g., timepieces, smoke detectors, etc.). Toward the end, the author enumerates the major nuclear accidents that resulted in contamination of the environment, such as the Three Mile Island in Pennsylvania in 1979 and the Chernobyl accident near Kiev, USSR, in 1986.

He concluded by elucidating on occupational and general population exposure with a dramatic display of estimates for per capita radiation dose from all sources. The text is exceptionally well composed, updated, typeset, and represented by a blend of tabular, pictorial, and graphical information.

In view of our growing concern over exposure to radion in dwellings and nuclear reactor accidents...least to say nuclear warfare...this book should remain a premiere source of information in this area. Although targeted primarily for students, nuclear engineers, health workers, and nuclear power-related personnel, parts of the book might be comprehended by individuals with a high school education.—D.C. ADRIANO, Savannah River Ecology Laboratory, Drawer E, Aiken, SC 29801.

Biological Indicators of Freshwater Pollution and Environmental Management


This book, a part of the Pollution Monitoring Series, would be an excellent reference for anyone working, teaching, or just interested in biological aspects of environmental science. The entire book continually builds a fascinating story beginning with a most interesting elementary history through some rather complete chemical and mathematical coverages of various aspects of environmental parameters of water pollution. The last 57 pages contain a comprehensive list of more than 1000 applicable references, enough to bring even the most advanced researcher reams of valuable citations. The 38-page index lists all of the indicator organisms covered in the discussion.

The text flows smoothly from its introduction on freshwater ecosystems through the various ecological balances. It explains how they coexist and how this balance can be disturbed. Very little need for previous expertise is needed to understand the relationships. Each chapter contains several valuable figures and tables to illustrate the author's main ideas. Some of the tables are quite long, several pages in some instances, but all serve a useful and informative purpose. Many different environmental influences, i.e., suspended particles, man-made wastes, chemi-