Individual Onsite Wastewater Systems

Edited by Nina L. McClelland, Ann Arbor Science Publishers, Inc., P.O. Box 1425, Ann Arbor, MI 48106. 1979. 303 pages. $24.50.

The book contains 28 papers presented at the Fifth National Conference on Individual Onsite Wastewater Systems at Ann Arbor, Michigan, sponsored by the National Sanitation Foundation. The theme of the conference was “Wastewater Alternatives for Rural and Semirural Areas.” It provides up-to-date information on different aspects of onsite waste water treatment systems including: policies and regulations, role of various agencies, discussion of various alternative systems and state and local experiences with these alternatives, grants and funding for alternatives, and status of manuals in preparation for onsite waste water treatment systems.

Some technical reports on the performance of alternative systems include detailed determination of various parameters of water quality and are well referenced, while others are brief and contain general observations only. A paucity of technical data on soil and effluent properties in relation to evaluation of the alternatives reduces the usefulness of the book for the scientific community interested in site and waste water treatment system relationships. However, various reports contain up-to-date information on administrative policies and regulatory procedures for waste water services in rural areas involved in implementation of the Clean Water Act of 1977. Thus, the book should be useful to consulting engineers, planners, and local and state officials concerned with implementation of alternative onsite waste water treatment systems that are both cost effective and commensurate with provisions of the Clean Water Act.

Although the book carries out the stated objective of the series of these conferences “to disseminate timely information on alternative systems and provide a forum for exchange of information among the various disciplines concerned with effective utilization,” the wide range of topics presented in the book could be better organized.—B. L. SAWHNEY, Department of Soil and Water, The Connecticut Agricultural Experiment Station, New Haven, CT 06504.

The Use and Significance of Pesticides in the Environment


This extraordinary book attempts to collect and analyze the knowledge available on the benefits and environmental impact of pesticides. The authors, an entomologist and weed scientist, respectively, have succeeded remarkably well. They have developed an orderly, detailed outline of the subject and did the research necessary to do a documented systematic analysis of each topic—there are almost 1,000 references in the bibliography. They give the facts; there is none of the simplistic and unresearched generalization so common in writing on this subject.

The first chapter is an excellent retrospective on the rise and fall of pesticides as “miracle chemicals,” and the profound impact of modern synthetic pesticides on human health and nutrition. The second chapter gives an outline of the environmental debate. Four chapters then detail why and how pesticides are used in disease vector control, agriculture, forestry, and in the home. These chapters are the best summary I have seen on the diversity and sophistication of pest control technology; this technology is seen as man’s response to the adaptive exploitation of our modifications of the environment by pests.

A chapter on how new pesticides are developed leads to six chapters on the chemicals themselves: the history, chemistry, toxicology and application of fungicides, herbicides, insecticides, rodenticides, piscicides, and avicides are described. A vast amount of detailed information on properties of individual pesticides is summarized in tables, and the diversity of pesticides is again brought out. Four chapters overview the source, levels, and fate of pesticide residues in soil, water, air, and food, and these chapters also rely on many original tables constructed by the authors using data from many sources. The final five chapters review pesticide impact on some specific nontarget organisms (birds and mammals, including man), look at the use and misuse of the concept of bioaccumulation, discuss the rationale and history of regulatory legislation, and conclude with a short epilogue pleading for a temperate approach to the debate.

In spite of the technical complexity of the subject, the book should have a very wide audience, including students, specialists who need a source book on areas in the topic outside their immediate interests, and hopefully, anyone concerned with the impact of pesticides on the environment. It can be read by someone without technical background but it will not be easy going; The information density of the book is very high. In places (particularly when the authors are reviewing history or discussing case histories of particular controversies) the writing is vivid and entertaining, but there are also places where the authors try to cram an especially technical subject into a few sentences (e.g., the discussion of the insect nervous system on page 157 or herbicide modes of entry into plants on page 91). There are minor inaccuracies in the book, but there seem small and are probably inevitable in a work of this scope.

I strongly recommend this book. The authors have rendered a great service in the cause of truthful inquiry, and their book should be in the library of every person who has an interest in the subject.—R. D. WAUCHOPE, USDA-SEA-AR, Southern Weed Science Laboratory, Stoneville, MS 38776.

A Perspective of Environmental Pollution

M. W. Holdgate. Cambridge University Press, 32 East 57th Street, New York, NY 10022. 1979. x + 278 p. $35.00.

A pollutant is “something in the wrong place at the wrong time in the wrong quantity.” With the qualification that a pollutant originates somehow from man’s activity, this definition forms the background for considering pathways, effects, monitoring, and control of environmental pollution. The definition depends on value judgments, thus placing pollution problems in a larger context. Although values and specific concerns may change, the basic theme of this book should remain valid. Its tone is optimistic, based on Holdgate’s belief that most serious environmental problems have been identified, that they can be controlled, and that new problems will be identified early enough to take effective actions.

Holdgate writes from experience as Director of the Central Unit on Environmental Pollution in the United Kingdom Department of the Environment, and Director of the Institute of Terrestrial Ecology of the Natural Environment Research Council. He quantitatively describes specific cases of air and water pollution. He points out that dose-effect relationships were developed for dealing with radioactive materials in the environment. Similar concepts are now useful with other pollutants. Holdgate develops these concepts very logically to form a basis for assessing damages from various air and water pollutants and benefits from controlling them. His discussion of the design and operation of monitoring systems, stressing the importance of statistical and scientific validity of such systems, is especially good. There is, however, no explicit consideration of nonpoint sources of pollution.

A special feature of the book is Holdgate’s discussion of international problems arising from different attitudes and priorities regarding pollution. There are no international standards for pollutants, only guidelines for radiation, nitrate, sulfur dioxide, and smoke. In a few cases, regional standards between nations have been agreed upon. The importance of international consideration of pollution problems will undoubtedly increase.

This book will interest those concerned with environmental policy questions. It could be useful reading for advanced undergraduate or graduate courses in environmental pollution. The book is clearly written and does not require advanced mathematical, chemical, or biological knowledge to be understood. A detailed index and recent technical references are included.—RONALD G. MENZEL, USDA, SEA, Southern Plains Watershed and Water Quality Laboratory, Durant, OK 74701.