in mushroom. Repeatedly, mushroom was identified as a primary pathway for Cs intake by wildlife and humans. The book also contains useful discussions of counter-measures and reveals a few points of interest to those involved in nuclear waste disposal. It is very clear that generalizations are dangerous. Even the similarity of K and Cs was shown to cause both synergistic and antagonistic effects, depending on local conditions.

This book is very important, and probably humbling, for anyone considering reactor failure accidents. Although not intended as such, it could be an effective teaching reference for radioecologists, and perhaps as a result of this book we will begin to train a few more! I would also recommend it to specialists in waste management who need to evaluate nonagricultural scenarios.—STEPHEN C. SHEPPARD, Environmental Science Branch, AECL Research, Pinawa, Manitoba, Canada ROE 1L0.

Soil Productivity and Pollution


Increasing pressure on arable land resources has led to the development of farming practices, which, on the one hand, have brought about increased production, but on the other may lead to deleterious environmental degradation, especially by chemical pollution. This volume is a collection of 13 papers presented at a Royal Society discussion meeting held in London on 7 and 8 Mar. 1990, dealing with some key chemical, physical, and biological processes involved in modern agriculture, and some simulation models used to predict soil productivity and fate of agricultural chemicals.

The introductory paper consists of a brief but comprehensive review of the whole field. The papers that follow are organized into three groups: (i) fundamental processes (covering solute leaching, diffusion of inorganic solutes, soil competition, and crop growth); (ii) fate of organic materials in soil (covering long-term organic C and N turnover, degradation of organic compounds, predictions of pesticide behavior on the basis of their properties, and probability modeling of pesticide fate using distributions of soil properties and boundary conditions); and (iii) land utilization (regional land resources inventory and evaluation, modeling nitrate from agriculture into public water supplies, and two case histories—a land capability model and an application of the EPIC model).

A feature of this volume is the inclusion of discussions that followed the original presentation of each paper, together with references to literature quoted in these discussions. The questions raised usually pinpointed areas of controversy or uncertainty and provide the reader with a balanced view of the topic. The authors, obviously carefully selected for their experience, could not possibly give a complete review of each wide topic in the space available; what they succeeded in doing was describing particular cases or aspects and evaluating these in terms of our current understanding of basic processes.—JOHN L. HUTSON, Department of Soil, Crop and Atmospheric Sciences, Cornell University, Ithaca, NY 14853.


The objective of this book is to present basic facts about the natural and human environments and what is happening to them. Informatively and beautifully edited, this book contains 42 short chapters on a wide range of natural and human environmental topics such as human numbers, human health, deserts and desertification, tropical deforestation, the greenhouse effect, nuclear energy, biological diversity and genetic resources, migration of animals, pollution of the seas, and the spread of agrichemicals. Every chapter has at least one two-page, easy to read, colored chart (in 8.5 by 11 inch format) illustrating the most recent data pertaining to the chapter’s topic. For example, the chapter on human numbers contains four different colored charts: (i) a color-coded world map indicating the population growth rates of each country, (ii) a color-coded world map providing infant mortality rates for each country, (iii) a chart showing the 10 countries with the greatest actual increase in population numbers, and (iv) a chart showing the growth of world population from 1950 and projected to the year 2100. All of the other 41 chapters follow a similar format. The information presented is easily accessible and understandable to those even with no previous background in a subject. Because of the attractiveness of color charts and the easily readable short narratives that accompany the charts, I found myself actively studying the materials in each of the chapters, even though much of the information was outside my area of research. This book would be an excellent addition to the personal library of anyone wanting information on many of the major natural and environmental issues of today and would also be of help in putting much experimental data into a broader, worldwide context.

In addition to the 42 short chapters, there are also two pages of unit conversion factors and a six-page bibliography of selected major international reports from which much of the data presented were obtained. The data are drawn particularly from reports by the United Nations, the World Bank, the World Resources Institute, the Worldwatch Institute, the Organization for Economic Cooperation and Development, The International Institute for Environment and Development, The World Conservation Union, and the World Wildlife Fund.

Although solutions are proposed for some of the environmental problems proposed, polemic is avoided. The focus of presenting basic information related to natural and human environmental issues is maintained. This book will appeal to a wide audience and most people will find at least a few chapters that contain data of interest to them.—WARREN DICK, Department of Agronomy, Ohio Agricultural Research and Development Center, Wooster, OH 44691.

Principles and Practice of Chromatography


The term “chromatography” has changed significantly since it was introduced by Tswett about 100 years ago. This term initially was used to describe separation of bands of plant pigments extracted from green leaves with petroleum ether on calcium carbonate packed in a glass column. Tswett