Of particular interest to readers of the *Journal of Environmental Quality* may be information and discussions of costs and impacts of four hypothetical pipelines operating in different regions of the United States. For all cases west of the Mississippi River, projected demand for pipeline water, although modest in comparison to irrigation and other uses, still exceeded the legally available supply. Should water be allocated for pipelines, it would not be available for other uses, thereby potentially restricting future industrial, urban, and agricultural development. States generally reserve rights to make water allocations, historically on a "first come, first served" basis. It is pointed out that these procedures would have to be altered somewhat to accommodate the needs of an interstate pipeline. The report is well written and contains much information and data drawn from a number of sources. It serves as an excellent reference for those concerned with problems and policies regarding coal transport. Although considerable information is also presented relative to water resources and needs, energy development, and transportation problems, those concerned with these subjects will find too limited to be of great value. The report does however present much information of interest on these points.—J. F. POWER. *Northern Great Plains Research Center, USDA-SEA, Mandan, ND 58554.*

### Soil and Vegetation Systems


This book is the fourth in a series by Oxford University Press dealing with "Contemporary Problems in Geography." As stated in the preface, "this book is intended for the middle ground higher education reader which assumes a certain basic, elementary knowledge of soil, vegetation, weathering and hydrology." Its stated focus is on nutrient cycling dynamics of soil and vegetation systems. However, the reader soon learns that "in order to limit discussion and simplify the processes considered", nitrogen, carbon, and phosphorus are not dealt with but rather emphasis is on elements like calcium, magnesium, potassium, and silicon. I feel this is regrettable as certainly the nutrients which have been eliminated are the most important in terms of contemporary environmental problems and represent more interesting interactions between soil and vegetation systems.

*Soil and Vegetation Systems* is separated into three sections which are further broken down into chapters. After an introductory section, the five chapters of the second section are devoted to discussing component input, output, and cycling processes of a basic conceptual model (limited in detail) of nutrient movement. Each of these chapters is brief and does not provide either a complete review of available data or adequate consideration of the numerous external and internal factors influencing these component processes. In this respect the reader does need a basic knowledge of soil, vegetation, weathering, and hydrologic processes. With these chapters out of the way, the author then presents two chapters dealing with whole system models of stability and change which are the strength of this book. The models presented are simplistic (they probably adequately represent our knowledge of coupled system function with regard to nutrients) and the examples suffer from the choice of nutrients considered. However, many of the concepts presented could lead to further interesting discussion and these chapters could be used to introduce students to basic system behavior.

In summary, this book deals largely with concepts, ideas, and simple models of nutrient cycling. It should be useful as a supplementary reading in ecosystem analysis courses but the details of component function and influencing factors will have to be gleaned from other sources.—GRAY S. HENDERSON, *Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN 37830.*

### Ecology of Pesticides


This book attempts to provide the chemical principles embodied in analytical procedures used for evaluating environmental pollution. Following an introduction discussing the legal aspects and validity of chemical data, a general treatment is presented on statistics and techniques of sampling and analysis. The importance of sample preservation is discussed. The remaining six chapters are equally divided between discussions of analytical principles and application of these techniques to pollutants in the atmosphere (Chapter 3), water (Chapter 5), and soils, plants, and food (Chapter 7). Procedures are described for the major air pollutants including particulates, CO, SO2, and NOx. The parameters discussed in water quality monitoring are O2, organic C, P, and N. The chapter on soils, plants, and food is very general and contains a discussion of dissolution techniques (e.g., dry ashing, wet ashing) and of procedures for determining Cu and Zn in soil, Pb in leaves, Cd in food, and Hg in fish.

The chapters on analytical principles discuss gravimetric, titrimetric, and absorption methods (Chapter 4); emission spectroscopy, gas chromatography, mass spectrophotometry, and neutron activation (Chapter 6); and preconcentration, masking, and method selection (Chapter 8). All chapters contain schematic diagrams that show the major components of each instrumental method. The appropriate mathematical relationships are presented for procedures based on solubility, acid-base, redox, or light absorption. In some cases, duplication of material occurs where a specific method is discussed in both an application chapter and in another chapter on chemical principles.

The basic goal of this book is to present introductory material on analytical procedures for evaluating pollution. The majority of the figures are well drawn and pertinent to the discussion. The text is well written but its organization may suggest that some procedures are used in only one area. For example, nonaqueous extraction procedures in conjunction with atomic absorption spectrophotometry are discussed in relation to soils, while this technique may also be employed in water analysis. The book does not contain sufficient information to enable the reader to go into a laboratory and perform chemical analysis. The text should be useful as background information for students not having strong chemistry training but desiring a general knowledge of analytical chemistry for environmental studies.—J. E. SOMMERS, *Department of Agronomy, Purdue University, West Lafayette, IN 47907.*

### Pollution Evaluation: The Quantitative Aspects


This book attempts to provide the chemical principles embodied in analytical procedures used for evaluating environmental pollution. Following an introduction discussing the legal aspects and validity of chemical data, a general treatment is presented on statistics and techniques of sampling and analysis. The importance of sample preservation is discussed. The remaining six chapters are equally divided between discussions of analytical principles and application of these techniques to pollutants in the atmosphere (Chapter 3), water (Chapter 5), and soils, plants, and food (Chapter 7). Procedures are described for the major air pollutants including particulates, CO, SO2, and NOx. The parameters discussed in water quality monitoring are O2, organic C, P, and N. The chapter on soils, plants, and food is very general and contains a discussion of dissolution techniques (e.g., dry ashing, wet ashing) and of procedures for determining Cu and Zn in soil, Pb in leaves, Cd in food, and Hg in fish.

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