BOOK REVIEWS

Plant Analysis and Fertilizer Problems—Proceedings of the 7th International Colloquium

Fifty papers by authors from 18 countries are included in this paperback, two-volume proceedings of this conference held in Hannover, Federal Republic of Germany in September 1974. The host country contributed 10 papers; followed by nine papers from the USA; four each from England and USSR; three each from Denmark, Israel, Netherland, and Spain; single papers from Belgium, Greece, India, Pakistan, South Africa, and Turkey with a collaborating paper from New Zealand and Poland and also one from Brazil and Paraguay. The papers cover various levels from "cellular" to "system" of plant physiology involving nutrition.

Editorial style is a scientific format with an abstract, introduction, literature review, methods and materials, and results and discussion sections. Generally, the papers are specific research reports, but a small number deal with reviews on the "system" level (e.g. soybean nutrition-USSR).

The major thrust of the Colloquium is plant nutrition concerning the essentials present in the plant food. Two exceptions are Pb as an environmental pollutant and selenium in plants in single papers, respectively. Nitrogen received the most attention with 15 papers devoted to some facet of its involvement in plant functions. Studies on enzymatic N reductase activity are reported in five papers. Studies of the plant biosphere that impinge on nutrition include such reports as soil test extractant chemistry, properties of the plant root, salt levels, influence of virus infections, varietal differences, and physiological stages. Diagnostic indicators of nutrition levels are discussed in terms of sap analysis levels, microscopic and chemical characteristics, and variations of free amino acids.

At the "systems" level provocative considerations of yield-nutrient relationships are discussed in 10 papers and computer simulation related N uptake and growth factors in two papers. Research techniques include the gamut of experimental medium from excised roots to pot cultures (soil, amendments, and solutions) to field studies (annuals and woody perennials). Experimental techniques for four papers involve the stable isotope 15N while three papers involve radio-active isotopes used as tracers.

Objectives for all papers are clearly stated which makes for easy reading. Regionality of experimentation is minimal so the application of research findings and discussion should be of interest to the world's plant and soil scientists. The breadth of topics reported and the practical nature of interpretations and discussion make this a recommended reference for (i) college preparatory science courses and (ii) agrichemical professionals.—T. R. Peck, Agronomy Department, University of Ill., Urbana.

The Urban Organism

This book presents an ecological view of the broad urban environment. Many excellent photographs provide views of the comprehensive separate subjects of discussion. The book is divided into three sections: 1. An Environmental Approach from an Urban Perspective; 2. A Survey of Resources: Regional Case Studies; and 3. Mechanisms of Future Urban Resources. Excellent use is made of the book is involved with broad superficial discussions of various environmental aspects including water, soil, forest, atmospheric energy, mineral, wildlife, fishery, recreation, and open space resources. These discussions are centered around case studies of the Great Lakes St. Lawrence Basin Region, Gulf of St. Lawrence, Rocky Mountain Region, Pacific Northwest, and the Pacific Coast Region. A 16-page nontechnical glossary of terms is included; terms placed in the glossary are intended special slanting type and primarily of the broadest scope. There is also a 6-page bibliography (in addition to reference footnotes) and 15-page index are helpful to the reader.

The author covers a wide range of subjects in his discussions, varying from the Vietnam War (page 78) to Earth Day and Earth Week (page 81) to oil shale (pages 335-340). The soils discussions are very much generalized and simplified, and use a number of obsolete terms like "interization" (page 21) and "D horizon" (page 150). Enthusiastic readers of the Sunday edition of the New York Times are horrified to read that the collective annual cost for the Times disposal in the Times Square is approximately $5.5 million (page 52), and that "a garbage truck" represents "topsoil" being "detoured from the mainstream of productive life support cycles" (page 154). Soil surveyors will be pleased to read of the "regional and local" soil patterns, and pedologists and conservationists will appreciate sentences like "the soil profile serves as an autotrophic" by which the observer can retrace the history of the soil community, in geological beginnings, the contributions of climate, and the influence of flora and fauna over the thousands of years that are ordinarily required to produce only a few inches of topsoil" (page 150).

Some of the implications in the book are tenets. Flow rates, for example, are compared (page 47) between the 400:1 ratio of movement between blood flow in the aorta and capillary networks in mammals and the 120:1 ratio of movement in supersonic transports and pedestrians in a megalopolis. Seeds are considered to be "producers," and rodents, snakes, and hawks are first, second, and third order "consumers," respectively (page 78).

Much of the book deals with floods and floodplains; excellent figures are given for the water cycle (page 108) and the urbanized hydrologic cycle (page 109), and photographs show flood damage (pages 15, 17, 19, 21, 136, 151, 179) and landslides (page 295) and dikes (pages 18, 180). Interesting, though brief, descriptions are given for such diverse topics as the Muskegon Project for waste disposal (pages 117-119), the Mineral King recreation development (pages 418, 423), and the world city or ecumenopolis concepts (pages 437-446). The author has received academic degrees in philosophy, zoology, and environmental planning—and his writing reflects his broad and varied experiences.

This book should be of considerable interest to the general public and to senior high school students. It will be of lesser value to agronomists and college students. The price is reasonable.—Gerald W. Olson, Department of Agronomy, Cornell University, Ithaca, New York.

Water—A Primer

In 1960, the U.S. Geological Survey published the pamphlet "A Primer on Water." This was authored by Luna B. Leopold and Walter B. Langbein. It was a paperback, had 50 pages, 16 illustrations, and included a glossary of hydrologic definitions. It was an information publication for the general reader with some pertinent facts about water and written in a nontechnical language. It probably has been used frequently by elementary and secondary school science classes as source reference. There have been several reprints since the original publication.

Water—A Primer is an expansion of the 1960 pamphlet. It is written primarily for students in the environmental sciences who have a need for a basic knowledge in the elements of hydrology and not for those who are pursuing careers in engineering, meteorology, forestry, or soil science. As stated by the author in the preface, "This short book is designed to cover the general principles of hydrology and the facts concerning water use that must precede any consideration of the efficient and judicious use of the water resources. The environmental effects of resource use can hardly be understood without some background knowledge of the occurrence and movement of water."

The general outline for the original pamphlet and the expanded book is similar in that there are two very similar parts. The first part describes the hydrology, or the science that concerns the relation of water to the earth, and the second part deals with the development of water supplies and the use of water. This book, however, is much more fully illustrated in that there are 44 figures and 9 tables. There is also a glossary that has more terms defined than in the original. An addition is an index which is important for the inquiring student.

As suggested by the author, this book should provide an excellent textbook or reference for college and university courses in the environmental sciences. Because of its readability and nontechnical nature, it would seem to be a valuable reference for the junior and senior high school and public libraries.—Dan Wiensma, Department of Agronomy, Purdue University, West Lafayette, Indiana.