BOOK REVIEWS, continued

Chemosurgy—For Better Environment and Profits


The 14 papers in this publication were presented at the 32nd annual conference of the Chemurgy Council on October 22-23, 1970. The Chemurgy Council is an organization dedicated to upgrading agricultural products for nonfood usage through chemical technology. Soil scientists will be most interested in the following chapters:


Thermal Water Horticultural Demonstration Project at Springfield, Oregon, by H. H. Miller, Jr.

Other topics covered include food values from heated waters, waste heat used in controlled environment greenhouses, marine aquaculture using heated effluent water in Japan, biological utilization of food processing wastes, and useful products from reverse osmosis. —RCD

Slide Rule for X-Ray Critical Absorption and Emission Energies

A new pocket-size slide rule that relates X-ray critical absorption in emission energies to atomic numbers and their corresponding elements has been developed by the Qanta/Metrix Corporation. The new slide chart has readings for both K-series and L-series tables including weighted averages. Tables are calculated in KeV and a special slide scale for converting between KeV and Angstroms is also included. Copies are available on letterhead request from Qanta/Metrix Corporation, 120 Industrial Way, San Carlos, California 94070.

Water, Heat, and Crop Growth


This publication was written in partial fulfillment of the degree of doctor of science in agriculture. The author is a member of the scientific staff of the Institute for Land and Water Management Research in Wageningen. In this paper the main attention is given to the effects of physical and environmental conditions on plant development in an area in the northern part of a province in North Holland. The experiment is based on the use of a closed water balance system using non-weightable lysimeters. The principles of the transport of water through the soil via the plant into the atmosphere are treated in one chapter. Subsections in the chapter cover transport of water in the unsaturated zone and transport to the atmosphere. A detailed treatment of heat transfer in the soil is covered in the next chapter. The final chapter is devoted to a synthesis of the combined effects of water and heat seedling emergence and crop production. —RCD

Elementary Soil and Water Engineering, Second Edition


The new revised edition is slightly longer than the original text published in 1957. Both the original and this edition were written primarily for laboratory and classroom instruction at the college level for students in agriculture and related fields. The authors emphasize the engineering phases of soil and water conservation but also attempt to cover some of the agronomic aspects of these problems. Because of the numerous subjects discussed in a relatively brief text, the agronomic implications tend to suffer.

Further use of this text is suggested by the authors for voca-
tional agriculture teachers in high schools, instructors for adult training classes, engineers, county extension directors, contractors, farm managers, and farmers. For meeting the basic needs of these groups I feel that certain sections of the text do an adequate job. However, I would question whether any of the subject matter is covered in sufficient detail to permit non-experienced personnel to adequately perform the engineering requirements of the various practices discussed. As the title states, it is an elementary text.

The book includes subject matter on simple surveying and its application to field problems, in addition to information on design and layout of conservation practices. The 18 chapters cover the relationship of soil and water conservation engineering to broader world problems of food and fiber production; surveying and the use of equipment; elementary hydrology; various aspects of soil erosion and its control; water supply, structures, and storage on the farm; tile and surface drainage; sprinkler and surface irrigation; land clearing and watershed and farm planning. Sample instrument survey notes are given in applicable chapters to illustrate and standardize the recording of data. Also many chapters contain example problems as well as problems to be completed by students.

Recommendations have been updated from the first edition and two new chapters have been added—one on water supply and another on surface irrigation. The chapter on conservation structures now includes irrigation and drainage structures. Most chapters from the first edition have been revised and some rearrangement of subject matter among chapters have been made.

Evaluating this text from the agronomic standpoint I find those chapters dealing with instrumentation and engineering of structures to be of limited value. Treatment of conservation practices are handled primarily from the engineering viewpoint, as would be expected, and as a result are weak in agronomic implications. Soil erosion by water and wind are discussed rather briefly so these techniques do not afford sufficient background for those teachers having these areas as principal subjects in their courses. For the same reason I would be critical of the conservation planning chapter. I did find the chapters on surface and tile drainage to be very helpful as reference material for an undergraduate course in soil conservation and water management. The chapters on surface and sprinkler irrigation, although brief, also will serve as excellent reference material.

As the authors state, this text is especially well adapted for undergraduate students in general agriculture and those in engineering mechanization. Although a large section of the text deals with engineering aspects, certain sections are also valuable as reference material for agronomy majors, particularly those sections dealing with erosion, drainage, and irrigation. As would be expected in an elementary text, sufficient detail of much of the subject matter is not present to provide much depth to the subjects discussed. However, the text is well organized, easily read, and does a very adequate job of treating elementary soil and water engineering.—JERRY H. MANNERINO, Associate Professor of Agronomy, Purdue University, Lafayette, Ind.

Environmental Protection Criteria for Display of Treated Sewage on Forest Lands


This publication covers soil and landscape criteria for selection of forested area suitable for disposal and renovation of sewage effluent and sludge, monitoring sewage disposal project, and management recommendations to accompany soil and landscape criteria. Shorter chapters deal with the composition of effluent and sludge, the effects of sludge and effluent on soil properties, a list of definitions, and literature references. This report attempts to establish criteria levels that minimize maximum hazards to the environment. Users of the report are encouraged to update the criteria as information is collected. —RCD