BOOK REVIEWS

TRACE ANALYSIS


The purpose of the book is to acquaint the biologist, the physiologist, and the chemist with the new as well as the established techniques available for trace analysis, with emphasis on inorganic substances. The book collects in convenient and, for the most part, readable form the basic knowledge about the techniques. Many references to the literature are given. The basic techniques are discussed from the standpoint of theory, application, sensitivity, precision, accuracy, sources of error, advantages, and limitations. Detailed procedures for specific constituents are not given. The book is subdivided into 24 chapters which, together with the appended discussions, represent the combined efforts of 43 individuals. The chapter titles are as follows: (1) chromatography and electrophoresis, (2) ion exchange, (3) extraction, (4) chemical microscopy, (5) spot tests, (6) colorimetry, (7) fluorometry, (8) flame spectrometry, (9) potentiometry, (10) coulometry, (11) polarography and voltammetry, (12) amperometry, (13) emission spectrochemical analysis: basic principles and applications, (14) emission spectrochemical analysis: determination of trace elements in plants and other biological materials, (15) gamma-ray spectroscopy, (16) mass spectroscopy, (17) X-ray spectroscopy, (18) X-ray micrography: analysis of elements by microtechniques utilizing absorption emission and scattering of X-rays, (19) neutron-activation analysis, (20) microbiological techniques: inorganic ions, (21) instrumentation, (22) the interaction of beta particles with matter, (23) trace element sensitivities, (24) comparison of activation analysis with other methods, and (24) separation, concentration, and contamination.—C. A. Black.

MANAGING SOUTHERN SOILS


Managing Southern Soils is one of three books published in the "Southern Farm Series." The words of the author, "This book has been prepared primarily for agricultural students, farmers, and farm leaders who are interested in the management of southern farm soils." It will be used mostly by vocational agricultural students, anyone desiring a broad picture of southern soil management and agriculture will find it interesting.

General descriptions are presented of soils and their characteristics, the physiographic regions of the South, and problems involved in managing soils for conservation and crop production purposes. The complexities of soils and their management are presented in a relatively simple manner. Many excellent pictures are included, providing characteristic observations of southern agriculture.

The wide scope of soil variations, as they affect soil management and cropping, are handled well by devoting chapters to special problems. Examples of two of these are: "Managing Soils for Special Uses" and "Managing Soils in Dry Regions." Other chapters included that will be of special interest to vocational agriculture groups are: "Classifying and Judging Land," "Buying Farm Land," and "A Forward Look.

The various aspects of soil management are effectively covered in different chapters of the book, but organizationally some chapters could have been combined, giving a more comprehensive coverage of the subject. Chapter 2, "Nature and Properties of Soils" is a chapter that could have been more inclusive in covering the physical and chemical properties of soil, because it should have set the stage for the subsequent soil management discussion.

Nevertheless, the author is to be commended on his coverage of the complex subject "Managing Southern Soils."—Robert D. Munson.

CONSERVATION OF NATURAL RESOURCES, 2nd Edition


Nineteen different contributors have combined their talents to prepare a second edition of this book. Five of the 23 chapters were written by Guy-Harold Smith. Eighteen persons prepared the remaining 18 chapters.

The broader aspects of various conservation problems as they are related to the economic utilization of natural resources are presented. The subject matter includes many different disciplines. Problems related to renewable and nonrenewable resources are recognized and the economics of alternative procedures for resource utilization is emphasized in many places.

This book is divided into 8 parts. Part 1 consists of three chapters which provide information on the "History and Development of Conservation in America." "The Public Domain and its Disposal," and the interaction of "Economics and Conservation." Part 2 is devoted quite largely to a discussion of soil resources, irrigation and drainage. The titles of the five chapters in this section are "The Great Soil Groups and Their Utilization," "Soil Conservation," "Irrigation in the United States," "Reclamation of Wet and Overflow Lands," "Grassland Resources," and "The Land We Possess." The titles of the two chapters in part 3 are "Our Forestry Resources" and "The Practice of Forest Conservation." Part 4 is confined principally to a discussion of water resources. The four chapters in this section are "Water Supply for Domestic and Industrial Uses," "Water Power and its Conservation," "Our Waterways and Their Utilization," and "Floods and Flood Control." Part 5 is concerned with mineral resources. The two chapters are "Conservation of Mineral Resources" and "Mineral Fuels." Wildlife conservation is discussed in the second part 6. The titles of these chapters are "Conservation of Wildlife" and "Fisheries for the Future." "Recreational Resources" and the "Conservation of Man" are the titles of the two chapters in part 7. State and local planning, and national planning and the conservation of resources are discussed in part 8.

A history of resource utilization as it applies to renewable or nonrenewable resources is briefly presented in most of the chapters, followed by a discussion of economic factors that have influenced wasteful exploitation and comments concerning procedures that are being used or could be used to solve the various conservation problems.

More than 500 references are footnotes, or at the end of the various chapters. These references include a large number of recent books on various phases of resource conservation.—Horace J. Harper, Oklahoma State University, Stillwater.

ELEMENTARY SOIL AND WATER ENGINEERING


This is an excellent textbook on simple soil and water engineering practices as applied to farm planning. The authors, by their forceful style of writing and their logical presentation of subject matter, give the reader, without previous engineering training, a working knowledge of the more important engineering techniques used in planning and establishing simple engineering practices. The understanding and skill of the student to gather and organize field data is developed by a comprehensive discussion on land surveying, including map making and reading, and field exercises. The principles involved in planning are briefly but clearly presented. The skillful use of tables and nomographs enable the reader to interpret soil, hydrologic, and hydraulic factors for specific problems. The many well-chosen illustrations and pictures acquaint the beginner with practically all of the major soil conservation practices now in use. The book, with its references to source material, can also serve as a practical working guide to anyone interested in soil conservation farm planning.—A. J. Wojta.