BOOK REVIEWS

An Introduction to Clay Colloid Chemistry

This valuable book on clay chemistry contains 11 chapters and five appendices. The chapter titles are:

The 5 appendices cover: (I) References on preparation of clay suspensions. (II) Miscellaneous computed data for montmorillonites (surface area, charge density, particle distances, formula calculations). (III) Electrical double-layer computations. (IV) Van der Waals attraction energy between two unit layers. (V) Clay literature (an excellent list of books, monographs, reviews, symposia, and periodicals).

Topics include microscopic examination, diffraction analysis, flocculation, dispersion, ion exchange, double layers (Sterne, Gouy, Bolt), layer silicate clay mineral structure diagrams, sedimentation, thixotropy, swelling, drilling fluids, paints, papers, compaction, electrokinetics, and ionic activities and suspension effects.

One misses any treatment of the clay colloid chemistry of interstratification (micaceous and interstratified clays) and intergranular clays (hydroxy interlayers in expandable clays).

The soil scientist will want this book on his reference shelf, both for its lucid and authoritative discourse on the subjects treated and because of its valuable outlines of references to the literature.—M. L. Jackson, Univ. of Wisconsin.

Sol, Microflore et Végétation (Soil, Microflora and Vegetation)

The period of highly specialized research during which we are living induces the scientist, and even the laymen, to proceed deeper and deeper in a single line of thought and many may lose their way if no reference is made to the whole of the problem.

The authors of "Soil, Microflora and Vegetation" have condensed a great amount of information which they have set up in the complicated lattice of the biological world.

Scientists engaged in either of the different subjects of vegetation, be it soil science (narrowed specifically to soil physics, soil chemistry, soil biology or soil fertility), plant science, microbiology, may forget or overlook the complex network of the "green world." Bouillard and Moreau's work will help them consider all the phases of this intricate network of beneficial and antagonistic actions which take place at the earth's surface.

The authors make us consider, through a nicely graded presentation, the activities of the soil microflora, either beneficial or antagonistic, their localization in the soil with the soil properties, the microbial associations, rhizohal or mycorrhizal or even parasitic. Higher plants are gradually introduced in this study either as subjects affected by the microbial action or as agents modifying the minute world of the microbes. These aspects of vegetation lead us to the conclusion of the study whereby the authors have focused the whole system of actions and interactions on the production of good crops of higher plants.

The ecological point of view which they have put forward in their gathering of the actual information we have on the living soil will no doubt be an incentive to many workers, as more questions will arise in the reader's mind than answers to be found in the literature citations.

The authors' foreword offers the book to scientists and laymen. It is believed that the latter will probably be lost through the rather technical aspects of some chapters. Even the scientist might here a few specific references to understand eventual phases of the demonstration which may be outside his field of interest.

It is felt that anyone engaged in forestry, soil science, microbiology, agriculture, and ecology should spend the few hours necessary to go through this work which is up-to-date as to the information it gathers and deeply creative by the personal mind of its authors.—Alaric Alauze, Professor of Microbiology, Faculty of Agriculture, Laval University, Quebec, Can.

Transactions of Joint Meeting of Commissions IV & V of the International Society of Soil Science

These transactions are a record of the papers and discussions of the International Soil Conference held at Massey University College of Manawatu, Palmerston North, New Zealand, Nov. 13-22, 1962. It was the first joint meeting of Commissions IV and V of the International Society of Soil Science.

The conference was divided into four sections. Under the section entitled Soil Processes and Soil Fertility, seven reviews and 26 short papers were included on the subject of the interrelationships of soil processes and soil fertility in terms of weathering, nutrient elements, soil organic matter, and soil structure. In Soil Classification and Soil Fertility, 36 papers discuss the survey and classification of soils in various parts of the world, and how these surveys are put to use. Under Soil Fertility and Land Use, five reviews and 14 shorter papers deal with soil of the humid tropics, of the paddy fields, of peat and other wet soils and with the problems of steepland soil, and soil fertility under pasture. A discussion of assessing soil capability for crops and pastures, and forest site capacity, and chemical tests as an aid to increasing productivity are also discussed. The papers presented under the heading Soil Science and Society are concerned largely with soils as related to town and country planning, and soils as they affect human health, particularly dental health.—D.K.

Solid Surfaces and the Gas-Solid Interface

This collection includes the papers presented at the Kendall Award Symposium honoring Stephen Brunauer, Division of Colloid and Surface Chemistry, at the 139th meeting of the American Chemical Society in St. Louis, Mo., March, 1961, and takes its title from the address delivered by Dr. Brunauer. Of the 38 papers contained in the volume, including a foreword by L. E. Copeland and an introductory address by Sir Hugh S. S. Taylor, several pertain specifically to the subject of solid surfaces. Soil scientists, however, might also find the papers dealing with various aspects of adsorption of particular interest. Among the subjects treated in these papers are low energy reference electrodes for investigating adsorption by contact potential measurements, adsorption potentials, adsorbent self-potentials, and thermodynamic equilibria, a general theory of monolayer physical adsorption, heats of immersion in silica-water systems, the density of water absorbed by expanding clays, and a thermodynamic theory of adsorption.—D. K.

Approved Practices in Pasture Management

Written with the understanding that pastures are a crop, this publication is addressed to practicing farmers and others, such as agricultural teachers and students, who would find useful a guide to the establishment, management, and utilization of pastures. It is a clear and well-organized presentation of facts and methods, condensed from research data, bulletins, and articles, put in terms that the ordinary layman can understand and apply. Malcolm H. McVickar is National Manager, Agronomy, Ortho Div., California Chemical Co., while John S. McVickar is the head of the Agricultural Department, Western Illinois University.—D. K.

Land and Water Use
Edited by Wynne Thorne. American Association for the Advancement of Science. 1515 Massachusetts Avenue, N. W., Washington 5, D. C. 364 pp. 1963. $8.00, $7.00 prepaid to AAAS members.

Originally a symposium presented at the Denver meeting of the AAAS, Dec. 27-29, 1961, this book has as its theme, in the words of its editor Wynne Thorne, "... the concept of land and water as related resources." The papers included fall under four general headings: Introduction by Wynne Thorne, The Resource Setting, Criteria and Policies, and Role of