

New Books

Soil Chemical Analysis

M. L. JACKSON, Prentice Hall, Inc., New York. \$9.00. Reviewed by W. H. MACINTIRE.

THIS TEXT of 498 pages, in 18 chapters, is essentially for the guidance and development of the student. It covers a wide field of selected analytical procedures and sampling for soils and plants.

The initial 27 pages are devoted to the mechanics of sampling. Then come successive highly directive chapters on determination of hydrogen activity, exchangeable cations, potassium, phosphorus, nitrogen, organic matter, soluble salt mineral colloids, rapid tests, boron, collectively iron-manganese-copper-zinc-molybdenum-cobalt, polarographic analysis, absorption, spectrophotometry, and emission spectrophotometry. The concluding four chapters are of particular interest as describing adaptations of those fundamental modes of attack and implementation of the specific analytical techniques.

The author dedicates his treatise as a guide and compendium of information to the student in soil chemistry, while facilitating matters for the teacher. He has exhibited meticulous care in the directives for analytical technics; similar care is essential in many of the prescribed determinations. In certain cases, however, the directions could have been given with brevity, without impairment of precision, as for example in the "neutralizing equivalence of agricultural limestone." Lacking there is information as to the differential properties of the two types of limestone as additives to soils and fertilizers; and as to the value of magnesium as a preventive of "sand drown" and "reciprocal repression" between the calcium and magnesium, when these elements are alkaline additives in the soil.

In his treatment of the function of limestone incorporations, the author overlooks the importance of calcium-silicate slags and the fact that they are capable of imparting to carbonated water, and to soil leachings, calcium bicarbonate concentrations thrice those obtainable from calcium carbonate in any form. Missing also are directions for analysis to determine the extent of the fixations that additive calcium and magnesia undergo into exchangeable and non-exchangeable forms.

The decidedly greater fixation ca-

capacity from alkaline forms of magnesium, and its immediate and transient toxic effects should be a challenge to the student.

The reviewer considers silica in hydrous state as being of potential value in soil systems; but no provision for its determination is included in the text.

A regrettable omission is the lack of recognition of procedures to determine variances in the solubilities of different additive fluorides in soil systems, and of the role of fluorine carried by inputs of phosphatic materials, and when washed from a "polluted" atmosphere.

But as an over-all evaluation, the distinctive book deserves a meritorious rating, with certainty that it will be of great value to serious students of soil chemistry and to teachers of that science. The author thus attains his announced objectives.

LITERATURE AVAILABLE

Antioxidants. Detailed descriptions of antioxidant chemicals and their application in foods and animal feeds. Laboratory data provided on physical and chemical properties, as well as effectiveness of the antioxidants. Copy of booklet, "Catalin Antioxidants," obtainable from Dept. A&F, CATALIN CORP. OF AMERICA, 1 Park Ave., New York, N. Y.

Atomic Energy. Booklet entitled "The New Force of Atomic Energy—Its Development and Use" is designed to give a better understanding of atomic energy and its peacetime potential in the fields of industry and agriculture. May be obtained from Assistant to Manager for Public Education, SAVANNAH RIVER OPERATIONS OFFICE, U. S. ATOMIC ENERGY COMMISSION, P. O. Box A, Aiken, S. C.

Catalog. Prices and specifications on rare sugars, amino acids, laboratory reagents, and biochemicals given in 32-page catalog. Dept. A&F, PFANSTIEHL LABORATORIES, INC., 104 Lake View Ave., Waukegan, Ill.

Ethyl Formate. Five-page data sheet on ethyl formate (used as a fumigant, flavor ingredient, and chemical intermediate) outlines physical properties, specification limits, shipping data, and compositions of constant boiling mixtures. Write to Dept. A&F, UNION CARBIDE CHEMICALS CO., 30 E. 42nd St., New York 17, N. Y.

Fatty Acids. Revised brochure covers specifications and characteristics of fatty acid products: Emersol stearic and oleic acids, and Hyfac hydrogenated fatty acids and glycerides (vegetable and animal). Ask for "Specifications and Characteristics of Fatty Acids," Dept. A&F-5, EMERY INDUSTRIES, INC., Carew Tower, Cincinnati 2, Ohio.

Laboratory Glassware. A total of 377 glass items, including everything from adapters to stopcocks, illustrated in new catalog. Prices shown. Catalog 89A58, Dept. A&F, FISCHER & PORTER Co., 835 Jacksonville Rd., Hatboro, Pa. (In Canada: FISCHER & PORTER LTD., 2700 Jane St., Toronto 15, Ontario.)

Lime and Fertilizer Spreaders. Combination lime and fertilizer spreaders are positive-feed, and self-unloading. They handle either dry or stockpiled fertilizer. Data sheet available from Dept. A&F-A25-2, HIGHWAY EQUIPMENT Co., 616 D Ave. N.W., Cedar Rapids, Iowa.

Soil Moisture Meter. Brochure explains what the moisture meter is, how it works, and its basic purpose, namely, to indicate rapidly and accurately the amount of moisture available in a given section of soil. Dept. A&F, SOILTEST, INC., 4711 W. North Ave., Chicago 39, Ill.

Water Softeners. Automatic water softeners, capable of softening water at service flow rates of 52 gal./min., suitable for installation for farms, dairies, and laboratories. Write on company letterhead for catalog section 270/17-20, Dept. A&F, THE F. E. MYERS & BRO. Co., Ashland, Ohio.

Weed and Brush Control. Two folders include ready reference charts covering specific weed and brush control problems, type of herbicide and quantity of solution required, and application tips. Copies of "Fence Rider Guide" and "Crop Rider Guide" available from Dept. A&F, DIAMOND ALKALI Co., 300 Union Commerce Bldg., Cleveland 14, Ohio.

Weed Control. Illustrated brochure describes various applications of herbicide, Eptam, and on what crops it can be used advantageously. Also includes information on most efficient application methods. Dept. A&F, STAUFFER CHEMICAL Co., 380 Madison Ave., New York 17, N. Y.