

New Books

Advances in Pest Control Research, Volume II

R. L. METCALF, Editor, vii + 426 pp. Interscience Publishers, Inc., New York and London, 1958. \$12.50. Reviewed by L. LYKKEN, Shell Chemical Corp., New York, N. Y.

THE second volume of this series, edited by Dr. Metcalf, follows the format of the first; it contains eight new chapters prepared by well-known authorities. As before, each author is a recognized specialist in his field, and the subject matter for each chapter has been "selected from recent significant research trends related to all phases of pest control with emphasis on the fundamental aspects." Thus, Volume II contains additional comprehensive reviews as well as critical evaluations of new concepts and developments in the broad field of pest control research.

Each author has brought the current information in his particular field up to date. In certain instances, the authors have presented their personal, stimulating views which should provide impetus for future research in the fields covered. It is regrettable that all the authors did not use this approach.

Specifically, the topics covered include: fluid kinetics of pesticide applications, innate toxicity of fungicides, advances in seed and soil treatment with insecticides, determination of pesticide residues by isotope dilution, digestion and mothproofing of wool, the relation of chemical structure to activity of 2,4-D-type herbicides and of DDT analogs, and the spread of insecticide resistance in pest species.

The information in Volume II is well presented; numerous structural formulas and illustrations adequately complement the text. Each chapter is preceded by a table of contents (which should be welcomed by most readers) and is accompanied by an extensive list of selected references.

Approximately 100 pages, by R. P. Frazer, are devoted to the fluid kinetics of application of pesticide chemicals. Excellent diagrams of spray nozzles and photographs of liquid sheets and spray patterns are presented. Sufficient detail and design data are contained to provide the agricultural engineer a starting point for further research without reference to other literature.

Two other chapters, one (by R. L. Wain) dealing with the relationship of chemical structure to activity of the 2,4-D-type herbicides and plant growth regulators, and the other (by R. Riemschneider) covering chemical structure and activity of DDT analogs, with special consideration of their spatial structures, are presented in a very thorough and detailed manner. In the introduction of the chapter by R. L. Wain, the history of the development of weed killers and the views of various investigators concerning the mode of action of growth promoting substances in plants are briefly reviewed. In addition various methods of assessing growth-regulating activity are presented. In the chapter by R. Riemschneider, a major portion is devoted to the use of models of DDT analogs as a further criterion for judgment of insecticidal activity of these analogs.

The chapter on the innate toxicity of fungicides, by S. E. A. McCallan and L. P. Miller, includes a discussion of metal ions, sulfur, and organic toxicants. The importance of determining the true toxicity of fungicidal materials on a spore-weight basis is also emphasized.

The advantages and limitations of the isotope dilution technique when employed to separate a pesticide residue from interfering substances, as well as detailed procedures and methods of calculating results, are excellently covered by C. T. Redemann and R. W. Meikle. The chapter on wool digestion and mothproofing, by D. F. Waterhouse, describes the chemistry of wool digestion and the unique ability of certain insects to digest wool and other keratin-containing substances. Discussion of the structure and chemical composition of wool, along with a brief discussion of methods of insect control, methods of assessing mothproofing agents, and past and present mothproofing chemicals, is also included.

Research progress in seed and soil treatment with systemic and nonsystemic insecticides is discussed by H. T. Reynolds. Conventional insecticides are considered only in terms of seed treatment. However, for the systemic insecticides various other methods of application at time of planting are also considered in order to give some idea of the full importance of this group of pesticides.

In the last chapter, A. W. A. Brown gives a very interesting general discussion of the aspects involved in insecticide resistance; he then concludes

with a discussion of resistance in various insect pest species.

Volume II is of the same high caliber as Volume I, and contains very valuable information on pesticidal chemicals. Like the previous volume, it should be successful in stimulating new lines of research, as well as serving as a reference work for the research worker, the teacher, and the student. The editor and authors should be congratulated on their fine contribution to this complex yet practical field of research. Subsequent volumes will be awaited eagerly.

LITERATURE AVAILABLE

Equipment for Process Industries.

Folders on: bin-gate valve that provides accurate flow control (and positive shut-off) of bulk materials from bins and chutes; electric bin vibrator for keeping stubborn bulk materials and bulk parts free flowing; electronically controlled weigh feeder designed for accurate feeding of dry chemicals and other bulk materials; and vibrating feeders with finger-tip control and low maintenance feeding of hard-to-handle bulk materials. Dept. A&F, SYNTRON Co., 1222 Lexington Ave., Homer City, Pa.

Films Available.

Agricultural losses to quack grass and control of this weed explained in film entitled "Quack Grass, The Perennial Guest," produced by The Dow Chemical Co. Sequences filmed in the field show control of this grass in various crops. Available from MODERN TALKING PICTURES SERVICE, 3 E. 54th St., New York 22, N. Y.

The story of trace element molybdenum is portrayed in sound-slide film, a combination of photographs and lively cartoons. Shows how molybdenum works in the systems of plants, and how to treat needy crops with the element. Called "Moly-Gro Means Money," it may be obtained on loan from CLIMAX MOLYBDENUM CO., DIVISION OF AMERICAN METAL CLIMAX, INC., 500 Fifth Ave., New York 36, N. Y.

Sevin on Cotton.

Advantages of Sevin, outlined in folder, include wide-range control, long-residual action, control of resistant insects, improved safety and storage stability. Major pests controlled by this cotton insecticide also listed. Request F-40459 from Dept. A&F, CRAG AGRICULTURAL CHEMICALS, UNION CARBIDE CHEMICALS Co., 30-30 Thompson Ave., Long Island City 1, N. Y.