

# New Books . . .

## Pesticides in Tropical Agriculture

ADVANCES IN CHEMISTRY SERIES NO. 13, 102 pages. AMERICAN CHEMICAL SOCIETY, 1155 16th St., N. W., Washington, D. C., 1955. \$2.50. Reviewed by L. G. COX, United Fruit Co., Boston, Mass.

This publication is a collection of papers comprising a symposium on the present state and future of pesticides in tropical agriculture presented before the Division of Agricultural and Food Chemistry at the 126th meeting of the AMERICAN CHEMICAL SOCIETY, New York, N. Y., September 1954.

The authors, recognized authorities in their specific field, have presented what appears to be the nearest approach available to a handbook on control in the tropics of insects, fungi, bacteria, and weeds in relation to the basic food crops used for local consumption such as rice and beans and those agricultural products of world commerce including rice, cotton, bananas, coffee, cacao, sugar cane, rubber, citrus, and livestock.

This book should be required reading for those interested in the developmental branch of the agricultural chemical industry, and for those in various foreign technical assistance programs aimed at developing either an expanded market for agricultural chemicals or further development of our tropical agricultural resources. A great deal of practical thought and advice is given to the factors responsible for the present rather limited use of pesticides in the tropics and the need for further research and extension-type education right in the countries concerned. Advice and recommendations of foreign sales experts based on temperate zone experience cannot be expected to produce results or build confidence in any product no matter how good.

It is pointed out that there are certain basic differences between tropical crops and those of the temperate zone with respect to pest control. As a rough approximation, biological activity, as well as weathering of pesticide deposits, proceeds at twice the rate observed in the temperate zone. Rates and cycles of application of various pest control chemicals found adequate for temperate zone crops do not apply to tropical conditions, as some chemical companies and technical experts have already found to their sorrow. There is no "rest" or dormant period for most tropical plants or their pests, and, therefore, the rate of adaptation of both insects and fungi to new control agents is more rapid and the balance of nature is often more readily

disturbed by the destruction of beneficial predators and parasites.

Some information is given with regard to the potential demand of various tropical crops for pesticides. With regard to sugar cane, approximately 8 million of the 15 million acres in world production could make extensive use of various materials each year as follows:

Type	Pounds Required
Herbicides	3,000,000
Fungicides	2,000,000
Insecticides	10,000,000
Rodenticides	100,000
Bactericides (sugar mills)	1,000,000

Finally, emphasis is placed on the fact that maximum production of food and fiber in the tropics cannot be dependent on chemical control alone. Proper care must be made of planting dates to avoid certain peaks in insect and fungus populations, timing of insecticide applications must be carefully considered to avoid destruction of beneficial insects, plant breeding for resistant varieties must be expanded, and in certain instances cultural procedures such as flood fallowing of banana and sugar cane lands in combination with pesticide treatment can be highly effective in insect and disease control.

## Manual of Fertilizer Manufacture

VINCENT SAUCHELLI, Davison Chemical Company, Baltimore, Maryland, Second Edition, 1954, \$4.50. Reviewed by G. L. BRIDGER, Department of Chemical and Mining Engineering, Iowa State College, Ames, Iowa.

The second edition of this manual, like the first, was "prepared for the instruction of candidates chosen for training in supervisory positions in fertilizer plants and for the not too well technically trained who want to know more about fertilizer manufacturing procedures." The reader is warned by the author that the book is not a textbook but a practical handbook.

Despite these admonitions the book contains a wealth of practical and technical information that will be of interest and usefulness not only to fertilizer operating personnel, but also to chemists and engineers who are interested in research, development, plant and process design, and many other aspects of the fertilizer industry. It will be a useful supplement to texts and reference books which emphasize the theoretical and fundamental sides of fertilizer technology more than the practical side.

The second edition has been consid-

erably enlarged, containing 179 pages as compared with 126 pages for the first edition. A new first chapter surveys briefly the past and future of the fertilizer industry. The chapters on manufacturing processes have been expanded, particularly those on ammoniation and phosphate fertilizer processes. The chapter on manufacture of mixed fertilizers contains new sections on surfactants, accident prevention, and plant organization and development. There is a new chapter on chemical control and sampling.

The book is very readable and the author's style is excellent. The make-up of the entire second edition is much improved over the first edition, particularly with regard to organization, indexing, and typography.

## Advances in Food Research, Volume V

Edited by E. M. MRAK and G. F. STEWART. Academic Press 1954. \$11.50. Reviewed by JOHN N. NAIR, Thos. Lipton Co., Hoboken, N. J.

This latest volume in a series designed to present scientific progress in foods and nutrition maintains the high standard of excellence established in earlier issues. In the most lengthy of seven topical discussions the authors deal with statistical designs and techniques in the light of their use in food research. A number of illustrations of the application of statistical treatment to experimental food processing are used and its extension to panel and consumer taste evaluations is urged. Other authoritative reviews summarize present knowledge concerning oxidative rancidity and discoloration in meat, the sugar-bisulfite reaction and its relationship to food problems, pre-treatment and preservation of fruit and vegetable products with sulfur dioxide and sulfites, flavonoid compounds in foods, the color problem in foods, and the organic constituents of wine. A 45-page bibliography of references on this last topic adds greatly to its value.

Like previous volumes this one is well-indexed by author and subject. It is indispensable to those who would keep current with technical developments in the food field and advances in nutritional science.

## Correction

The Vitamins; Vol. III, by Sebrell and Harris is available for \$15 from the Academic Press, Inc. The review of this book (AG AND FOOD, page 163, Feb. 1955) was incorrect in reporting the price as \$16.50.