

volumes above any other popular book and above many conventional texts as being suitable for anyone, from high-school age onward, who wants to understand those parts of science where man's heaviest intellectual artillery is being deployed.

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Biological and Chemical Control of Plant and Animal Pests. A symposium. L. P. Reitz, Ed. AAAS Publication No. 61. American Association for the Advancement of Science, Washington, D.C., 1960. xii + 273 pp. Illus. \$5 (cash price to members); \$5.75.

Pesticide Handbook, 1960. Donald E. H. Frear, Ed. College Science Publishers, State College, Pa., ed. 12, 1960. 265 pp. Illus. Paper, \$1.75; cloth, \$3.25.

Chemical and Natural Control of Pests. E. R. de Ong. Reinhold, New York; Chapman and Hall, London, 1960. viii + 244 pp. Illus. \$8.75.

The AAAS publication, a group of 19 papers presented at a symposium arranged by the section on Agriculture at the Indianapolis meeting of the AAAS (1957), is a powerful counterpoise to some of the inaccurate thinking which has found expression here and abroad on the subject of chemicals in our food. One might hope that the fuzzy thinking of the alarmists does have a useful by-product if it indeed stimulates scientists working in the field of pesticides and biological control of pests to become more articulate, as reflected in these papers. Another by-product is a more vigorous exploitation of the biological control of pests that attack our plants and animals.

The first five papers are grouped in part 1 under the heading "The public's stake in pest control." M. R. Clarkson, J. R. Hansbrough, and J. A. Beal (U.S. Department of Agriculture), E. H. Fisher (University of Wisconsin), and B. L. Oser (Food and Drug Research Laboratories) present a well-rounded picture of the need for pesticides, together with some outstanding examples of their use and regulation by the Department of Agriculture and the Food and Drug Administration.

The four papers in part 2 are grouped

under the heading "Recent advances in chemical control." G. L. McNew (Boyce Thompson Institute for Plant Research) outlines progress made with the newer fungicides and antibiotics in controlling plant diseases. R. H. Beatty (AmChem Products) gives a brief history of 2,4-D and its extraordinary usefulness, and he also discusses some of the newer herbicides. J. E. Casida (University of Wisconsin) describes the behavior of some of the systemic insecticides for use on plants and animals. F. O. Gossett (Eli Lilly and Company) gives an account of the anthelmintics and other chemicals used to combat internal parasites of domestic animals.

The final 10 papers are grouped in part 3 under the heading "Biological control of pests." These are separate contributions by W. C. Snyder, C. A. Fleischner, and E. H. Stanford (University of California); J. D. Briggs (Illinois Natural History Survey); E. F. Knipling and N. F. Waters (U.S. Department of Agriculture); J. D. Rodriguez (University of Kentucky); A. D. Pickett (Canada Department of Agriculture); J. R. Shay (Purdue University); and R. H. Painter (Kansas State University). A broad range of topics is covered here, from antagonism as a plant disease control principle to the use of pathogens, parasites, and predators for controlling pests; the use of atomic radiation to sterilize male screw-worm flies, which results in their annihilation; the breeding of disease-resistant crops and animals; the effect of nutritional changes in the host and the host's reaction to parasites; disease resistance in animals; and the effect of pest control practices on biological balance in apple orchards. I recommend these papers to those who would strive for a balanced outlook on pest control and eradication. It is quite evident that (i) chemicals are extremely useful and necessary for pest control; (ii) the use of chemicals is being properly regulated; (iii) there is active exploration of biological control in its many aspects; (iv) there are new methods, such as male sterilization by gamma radiation, which will have important consequences in the future; and (v) the way is open for the combined action of both chemical and biological control methods to enable man to decrease the stupendous toll exacted by plant and animal pests and parasites.

The articles in parts 2 and 3 contain many useful references; there is a subject index. This volume is a worth while

and very interesting book to have on one's shelf.

If one has occasion to look up the trade names of pesticide formulations or what they contain and who sells them, the *Pesticide Handbook* is the standard reference on the subject. Frear lists 7851 formulations and gives the contents according to their labels. A list by active ingredients is tied in through a number system with the formulations presently on the market in the United States. There is also a useful list defining the registered pesticides and their legal tolerances on certain raw agricultural commodities.

Chemical and Natural Control of Pests, if judged by its title, should cover a wide scope, but actually it is largely oriented toward insecticides and their recommended uses. Unfortunately, it requires the reader to know which insecticides recommended for use are no longer manufactured or readily available and which ones are no longer of much use against a given species because of insect resistance. The pesticides listed in the appendix have not been brought up to date with respect to the common names or the trade names. In several instances, the names used in the text cannot be found in the appendix. Despite these shortcomings, the book contains much useful information.

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A Revision of the Species of *Schizonycha* Dejean (Col.:Melolonthidae) from Southern Africa. *Bulletin of the British Museum (Natural History), Entomology*, vol. 9, No. 2, pp. 63-218. R. D. Pope. British Museum (Natural History), London, 1960. Illus. + plates. 50s.

This is a most welcome, much needed revision of work on the species of the scarab beetles of the very large and difficult genus *Schizonycha* inhabiting southern Africa. Over 300 species of *Schizonycha* have been described, and all but eight are African. This part, the first step of a proposed revision covering the entire genus, includes the natural faunistic unit found south of a line across the continent along the border between Angola and Southwest Africa and continuing eastward along the Zambezi River. Very few species