

This book represents an updated and considerably expanded version of the editors' original book, Degradation of Herbicides. It consists of two volumes, the first of which is reviewed here. A total of 17 authors contributed to the nine chapters. Over half of this volume (289 pages) is devoted to the first three chapters which consider the "Phenoxyalkanoic Acids," the "5-Triazines," and the "Substituted Urea and Substituted Ureas. Herbi-
cides," the "Thiocarbamates," the "Chloroacetamides," "Ami-
trol," the "Chlorinated Aliphatic Acids," and the "Dinitroanilines" are discussed in the remaining six chapters.

Each chapter is prefaced by an outline and contains a table list-
ing the names, structural formulae, and properties of the herbicides in question. The subject herbicide of each chapter is addressed with regard to a generalized introduction, degradation, and mode of ac-
tion, and information which became available during the period be-
tween preparation and printing of the book is presented in addenda where appropriate. All tables, structures, pathways, and photo-
graphs are well designed and presented in the technical style to which scientists and researchers are accustomed. This technical style is also evident in the text portion, thereby enhancing the over-
all readability of the book.

References range from number 621 for the "Phenoxyalkanoic Acids" to 42 for the "Chloroacetamides" and are, unfortunately, presented in the short form. This requires less space but provides less information to the user than the format which includes the title of the article. This reviewer prefers full citations.

The two volumes of Herbicides: Chemistry, Degradation, and Mode of Action represent a succinct compilation of information pertaining to specific herbicides and classes of herbicides, and hence, should find their way into many technical and university libraries. Its cost will probably limit its use by individual students not intimately involved in the field, but it should serve as a valuable reference text to those whose interests are strongly herbicide-orientated. WILIAM W. WALKER, Microbiology Section, Gulf Coast Research Laboratory, Ocean Springs, MS 39564.

The Chemistry and Microbiology of Pollution


The avowed purpose of the authors in writing this book was to acquaint undergraduate and postgraduate students with a broad and comprehensive view of the chemistry and microbiology of pollution. Their aim was excellent as this book will provide that particular audience with an overview of the most important prob-
lems that we see today in the fields of degradation and dissipation of pollutants. For the more serious student, postdoctoral students, or research worker, the authors provide a list of recommended readings in the more detailed and concise books which are available.

The specialist, or research scientist, will not find a great deal to help him in his chosen field, but the book will be useful to them in the regard that they may find a broadness of view and interrelationship contained therein that is not normally seen in textbooks. I especial-
ly enjoyed and appreciated the authors failure to "view with alarm" the ubiquitous dispersal and distribution of the various pollutants discussed and their efforts to show that the final degradation prod-
ucts can and do fit into the ultimate scheme of nature.

The book reviews the chemistry and microbiology of pesticides, sewage and fertilizers, hydrocarbons, surfactants, synthetic polym-
ers, metals, and a chapter on miscellaneous pollutants which in-
cludes radioactivity, thermal, and air pollution. In the chapters on pesticides, there are some very general statements that would be ac-
ceptable only in a book of this type such as "Parathion itself is highly toxic to mammals"; but except for a very few of these statements, the chapter was highly readable and interesting. A criticism which may not be pertinent is that the authors failed to mention the newer type of pesticides such as some of the insect growth regulators that they can certainly be forgiven because of their treatment of the more acceptably known pesticides which they do discourse upon. The chapters about surfactants and de-
gradation of synthetic polymers were quite interesting as I have had very little contact with these particular types of pollutants; but, in

my mind, a very definite lack was seen in that there was no discus-
sion of the destruction or degradation by fire. However, I realize that in a book this size, we can't have it all. The authors discussed chemical changes seen in sewage and fertilizer, and did an excellent job of explaining the relationship of the nutrient cycles and interactions and the ecological significance of this mode of decom-
position.

The authors discuss quite adequately the complex problem of degradation of a series of hydrocarbons which would emphasize crude oil spills, and go even further to discuss the ultimate fate of crude oil behavior in the environment, its effects on micro-
organisms, and the treatment of hydrocarbon contamina-
tion of the sea. Their treatment of synthetic polymers is rather light, but their warnings that this problem will become greater and greater as society becomes more civilized is certainly a warning that should be taken very seriously.

This book is well organized, easily readable, and as long as the reader realizes that the superficial treatment of the subject is de-
liberate and is pointed toward a definite audience of the under-
graduate or postgraduate student, he or she can sit back and just enjoy reading it. The subject index is complete, and the references cited will be useful to scientists of many allied disciplines. This re-
viewer appreciated the balanced view of the authors who were neither emotional nor disparaging and would enjoy seeing other broad books covering allied disciplines in this same vein.-HARRY E. SMALLEY, Director, Veterinary Toxicology and Entomology Research Laboratory, ARS, USDA, College Station, TX 77840.

Studies in Biological Control


This book is a synthesis of work done on five separate projects on biological control of pest arthropods (fruitflies, the green peach aphid, rice stem-borers, armored scale insects, and spider mites) under the aegis of the IBP (International Biological Programme). The International Working Party on Biological Control had the re-
sponsibility of the initial selection of the projects and the project coordinators. The projects were selected because they are of basic and practical significance, and they can be studied best through international cooperation. They were conducted in cooperating countries as part of the existing programs with available national funds. The results represent the collaborative effort of entomolo-
gists in 30 some countries over a period of several years.

The book has eight chapters: an introduction (by the chairman of the working party who is also the editor of the book), definition and planning of the project (by the originator of the project as a postdoc in the IBP), individual reports of the five projects (by the in-
dividual coordinators), and concluding remarks.

The definition of biological control used throughout the chapters is "the control of a pest by another biota," although autecological ap-
proaches were mentioned in some of the biocontrol cases.

As a common and main feature, all project reports cover the ecology of the pest group concerned and its natural enemies, and their interactions under different ecological conditions on a global scale. However, they also contain additional emphasis as follows:

1) Fruit flies: Life table studies, marking of oviposition site, response to color stimuli, sexual behavior, and population genetics.
2) Myzus persicae: Genetic methods, and breeding host plants for aphid resistance.
3) Rice stem-borers: Use of selective insecticides, and integra-
tion of crop resistance and cropping systems with natural control.
4) Armored scale insects: Selection and hybridization of para-
sites, and biological control attempts on a global scale.
5) Spider mites: Effects of pesticides on spider mites and their natural enemies.

While the reports mainly cover the above useful factual informa-
tion, to this reviewer, two additional features are also of merit: (i) (i) speculative interpretations on the potential practical usefulness of basic ecological findings, and (ii) the list of nearly 900 references on the subject of biological control, most of them recent, including over 50 generated by the IBP projects.

Students in biological control in general and those working on the five groups in particular should find this volume useful and stimul-
ating. Considering the price, they may have to use the library copy. -H. C. CHIANG, Department of Entomology, Fisheries and Wildlife, University of Minnesota, St. Paul, MN 55108.