chlorine pesticides have become widely disseminated in the environment far from their areas of application.

It is of interest that 18 of the 24 papers on research projects deal primarily with effects on birds—probably because of the particular conservation value. Research that can be related to the accumulation of organochlorine insecticides in food chains is elucidated by B. N. K. Davis and by J. J. Hickey. C. H. Walker describes the way DDT enters the bodies of birds, the means by which its metabolites are formed, and the toxicological significance of these compounds. Toxicological research is presented also (a) on birds by P. L. Ames, R. F. Bernard, G. Grolleau, E. G. Hunt, and M. S. Mulla; (b) on fish by A. V. Holsten and R. E. Warner; and (c) on marine mollusks by P. A. Butler. The effects of pesticides on aquatic ecosystems are reviewed by O. B. Cope. Effects of organochlorine pesticides on birds of prey, pheasants, and hares are discussed by I. Prestt, E. G. Hunt, and B. van Klinger, respectively. Problems of bird mortality at certain dosage rates of phosphanidom are reported by F. Schneider and C. D. Fowle, and K. Borg describes mercury poisoning of a wide range of birds and other animals. T. J. Peterle presents a well-developed case for the use of isotoopes in studying translocation of pesticides in the environment, and discusses methods, equipment, costs, and examples. One example showed appreciable levels of DDT, DDD, and/or its metabolites in aquatic flora and fauna (especially carp) a month or more after treatment of a marsh. Techniques for nonlaboratory evaluation of effects of pesticides on birds are given, with a well-referenced background, by H. Przygoda. Quantitative data on response changes in fish, resulting from low levels of exposure, are reported by R. E. Warner; behavioral parameters were selected, as they are sensitive and represent the integrated result of biochemical and physical responses, and their use causes no harm to the organisms. Rapid quantification of normal and toxicant-induced behavior shows the profound effects of pesticides on aquatic life. J. B. DeWitt, E. G. Hunt, J. Lhoste, F. Schneider, E. E. Turtle, and H. van Genderen discuss the control of pesticide usage, and the way this is effected in their respective countries.

P. A. Butler describes tests devised for evaluating the toxicity of pesticides to various marine organisms, and national systems for monitoring mollusk populations. N. W. Moore outlines the requirements of monitoring systems that will detect changes in pesticide levels, and discusses the need for an international monitoring system. One of the commissions under the International Union for the Conservation of Nature and Natural Resources has established a Committee on the Ecological Effects of Chemical Controls, and J. L. George reports on its role in coordinating international activities.

The papers and discussions show that pesticide residues have been detected in a wide spectrum of physical and biological samples from diverse environments, indicating that contamination is widespread. In some instances, harmful effects on wildlife populations were clearly demonstrated, but, more often, the effects of pesticide residues are still unknown.

Preceding the papers of the volume is a list of names, addresses, and professional affiliations of symposium participants; a preface giving the background and genesis of the symposium; and an introduction that succinctly summarizes the presentations by subject. Appendices provide general opinions and conclusions by participants and notes on organization of the institute. An excellent, well cross-referenced index is divided according to common and scientific names of animals, names of pesticides, and general subject.

This volume will be of interest to those laymen and professionals who share concern over effects of pesticides in our environment. Within the context of growing interest among disciplines in the holistic ecological approach, it will prove an indispensable reference book to a wide spectrum of researchers, especially those in the life sciences, and to program administrators.

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For those who read German this "handbook" indeed offers a most comprehensive treatment painstakingly compiled in the thorough-going German tradition of leaving nothing undone. Dr. Wolfdietrich Eichler of Karl Marx University, Leipzig, has edited this volume, compiled with the aid of 19 colleagues who are authorities in their respective fields (ranging from insecticide chemistry, phytopathology, pharmacology, agronomy, through medicine, etc.) in Germany, Austria, Czechoslovakia, and Hungary.

The book is divided into nine parts: (1) chemistry and application of insecticides, (2) insecticides used to protect plants and materials (stored products, etc.); (3) insecticide use in parasitology and hygiene; (4) analytical, bioassay, and toxicology methods for insecticides (includes use of radioisotopes); (5) biological and physiological questions arising from insecticide use (includes mechanisms of action in plants and animals, therapeutic use of alkylphosphates, etc.), insect resistance; (6) toxicological problems from insecticide use (includes harmful effects on higher plants, effects on microorganisms, effects on fauna other than insects, warm-blooded toxicity, toxicity to fish, nutrition problems from insecticide residues, protection from poisoning in application, antitoxides; (7) appendix, a summary of the insecticide laws and residue tolerances in Europe, U.S.A., and Canada and phytotoxicity of insecticide; (8) bibliography of about 900 references arranged by subject and by author; (9) a combined subject and author index.

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The twenty-five chapters composing this modest-sized general biology book are organized in the classic approach beginning with the chemical basis of life and ending with a discussion of ecosystems. The writing is clear, concise, and in general not burdened with more terms than needed to explain a given concept. The profusion of well-chosen photographs and often uniquely portrayed illustrations makes for a highly informative text. Many of the figures are combinations of photographs and good line-drawings. The use of color includes black, gray, and two shades of blue.

Current biological research trends are reflected in the fact that more than one third of the chapters deal with genetics and ecology. Other than four paragraphs in the text proper, classification is limited to the appendix, where the 30 commonly accepted classification schemes for the animal and plant kingdoms, down to the class level, is presented with accompanying line-drawings showing representatives of each class.

There are few typographical or spelling errors. The frontispiece for each chapter is a pertinent photograph. Unfortunately four of these interesting pictures lack titles. The malaria life-cycle figure would be more use-