points. In that case the presumably desired purpose of bringing the author and the interested reader together is more likely to be served by publication of each individual article in an appropriate journal.

The contributions under review are of high quality and deserve to be read; but few readers will be interested in more than one or two of them. Unfortunately, between the hard covers of a vaguely, yet misleadingly, titled volume, each is likely to be missed by many of the workers most capable of benefiting from it.

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Pest-Control Method

Principles of Insect Chemosterilization. GERMAIN C. LABRECQUE and CARROLL N. SMITH, Eds. Appleton-Century-Crofts, New York, 1968. xii + 354 pp., illus. $16.

The concern that has been felt in recent years over the increasing incidence of insect resistance to insecticides and the possible hazards to man and wildlife associated with residues of some of the more persistent conventional pesticides has stimulated investigations into alternative methods of insect control. One of the methods which has met with some degree of success is that of inducing sterility in the pest population by means of either radiation or chemicals. Sterilization is of particular practical interest because it has the potential to counteract what is without doubt one of the major factors responsible for the success of our insect pests, namely, their awesome reproductive capacity.

Consisting of an introduction and six chapters by leading authorities in the field, this book covers comprehensively for the first time all major aspects of insect chemosterilization in a manner which is well coordinated, with a minimum of overlap and repetition.

A brief introduction (Lindquist) is followed by a discussion of the potential role of sterilization in pest control (Knipling) by either the mass release of sterile insects into a natural population or direct sterilization of the population itself. By referring to a number of simple mathematical models the author clearly emphasizes the theoretical advantages of sterilization over conventional chemical control and establishes basic criteria for the optimal utilization of the sterility technique in a number of practical situations.

The chapter on the techniques employed in the laboratory screening and evaluation of possible chemosterilants (LaBrecque) should prove a most useful source of reference to those directly involved in this kind of work. Included here is a comprehensive table of compounds reported to affect the reproductive capacity of many species of insects and mites.

In the course of development of new chemosterilants, compounds that have shown promise in initial laboratory screening tests must be evaluated under field conditions. Chemosterilant field studies with a number of insect species are covered in a later chapter (Weidhaas) which would have been more in context had it directly followed that on laboratory procedures. An interesting section of this chapter discusses the potential role of chemosterilants as biological tools which can be usefully employed in biological and ecological studies of insect populations.

Although the specific mechanism of action of chemosterilants remains largely unknown, much information exists concerning the results of cytogenetic and cellular interaction with the chemical. A chapter (LaChance, North, Klassen) discusses the various types of insect sterility that may result from these interactions and points out that, in addition to the cytogenetic damage to germ cells that results in dominant lethal mutations, aspermia, sperm inactivation, and infecundity, the chemical may also have important and more general somatic effects.

The chemistry and biochemistry of the chemosterilants themselves are presented in a chapter consisting of a series of sections concerned with specific compounds representing each of the major groups (Turner). Each section gives details of structure, physical properties, and methods of determination and purification of individual compounds in a form that will make the chapter invaluable for rapid reference. The sections devoted to the biochemical aspects of each chemosterilant are particularly interesting, for the author has drawn heavily on literature from the field of mammalian chemotherapy, where chemosterilants have been intensively studied as a result of their carcinostatic properties. Much of this information has not been previously published in a context of insect chemosterilization and its inclusion here might result in a useful cross-fertilization of ideas.

Although our present knowledge of the toxicological aspects—namely, mammalian symptomatology, metabolism, and chronic and acute toxicity—of chemosterilants leaves much to be desired, all available information is well summarized (Hayes) with direct reference to specific compounds.

This book can be highly recommended for all those interested in problems of pest control. A number of errors were noted which do not appear in the list of errata, but these do not generally detract from the overall value of the book, which will undoubtedly prove a major reference source in this important area of endeavor.

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A Metalloid Element

The Chemistry of Boron and Its Compounds. EARL L. MUETTERTIES, Ed. Wiley, New York, 1967. xvi + 699 pp., illus. $27.50.

The substantial growth in knowledge about the element boron and its compounds which occurred during the 1950's is now being reflected by the appearance of a number of books in the field. Certainly this book will stand as one of the major contributions. The full scope of the chemistry of boron has become fully apparent only within the last decade. The diversity of problems of chemical interest provided by this single element and the thorough and extensive coverage of the field by the present work make it possible to say with assurance that the book contains something of interest to every chemist. Topics covered range from the most fundamental structural problems to the applications of boron chemistry to organic synthesis. Each topic is treated by an acknowledged expert, and the resulting coverage is in general thorough and excellent.

The principal drawback to the present volume is one common to most collections of chapters written by different authors. For example, the termination date for coverage of the literature varies significantly from chapter to chapter. As a case in point, it is

reported that the first draft of chapter 3 was completed in early 1963. Furthermore, there is relatively little connection provided between rather closely similar topics that happen to fall into the provinces of different authors. Thus on page 274 Hawthorne discusses in considerable detail the *bis* ligand derivatives of decaborane, including mention of phosphines as ligands, yet the topic is treated again by Parshall on page 630 as a portion of the chapter on boron-phosphorus compounds. This unnecessary duplication is not extensive, however, and in any event has the advantage of enabling those interested in only a single aspect of the chemistry to find an overall review in a single chapter.

In the first chapter Muetterties provides a short overview of much of the material in the book and a brief view of a number of physical principles relative to bonding, reactivity, and structure. Chapter 2, on elementary boron and compounds of high boron content, is in some respects both the best and the most disappointing chapter in the book. The structure of elementary boron has probably caused as much confusion as any other single structural problem. This arises as a result of the existence of a substantial number of polymorphic forms, and the problem is made more complex by the ease with which small quantities of other elements are introduced into boron-rich structures. Hoard and Hughes are unquestionably the best-qualified individuals in the world to discuss the detailed structural problems presented by boron, and their chapter is a remarkably skillful and penetrating analysis of a difficult problem. By winding their way through the forest of reports and eliminating the true from the false the authors have created a trail that others will be able to follow. Unfortunately, one continually finds roadblocks which force one to refer to future sections for further comments or analysis of a present problem. A companion "skeleton key" would be most useful; it will take a number of readings for the average reader to begin to grasp the material presented.

Chapter 3, by Ross and Edwards, surveys the structural chemistry of borates. In chapter 4, Bell, Edwards, and Jones treat the structure and activity of boric acid. In chapter 5, Hawthorne reviews the rapidly developing boron hydride field. The complex structural information is presented with numerous well-prepared drawings. The rather short and inadequate treatment of carboranes (only eight pages) certainly does not do justice to this important and rapidly expanding field. It is perhaps too much to have attempted further expansion of this chapter, which already consumes nearly 100 pages, but a separate chapter devoted to the subject would have been most welcome. In chapter 6, Urry presents a thorough treatment of the boron halides, which includes over 200 useful literature references.

The close parallel between boron-nitrogen compounds and their isoelectronic carbon analogues has attracted the attention of a large number of chemists. Niedenzu and Dawson have collected 376 references and give a concise review of the field in chapter 7. Lappert in chapter 8 reviews some of the aspects of boron-carbon compounds. A number of useful tables of properties are presented, but perhaps the most stimulating sections deal with the question of B-C π bonding and with aromaticity in some heterocyclic systems. The fact that the chapter gives some 1200 references is a good measure of the interest and activity in the field. The final two chapters, by Parshall and Muetterties, respectively, survey briefly the compounds with phosphorus and with sulfur and selenium. Both chapters bring out many relatively little-known facts and make interesting reading.

As with most books on special topics, the price of this book is most unwelcome, and few but the enthusiasts will have the book on their personal library shelves. It becomes all the more important that it be found in chemical libraries.

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Defense Department Ethnography

Southeast Asian Tribes, Minorities, and Nations. PETER KUNSTADTER, Ed. Published for the Princeton Center of International Studies by Princeton University Press, Princeton, N.J., 1967. 2 vols. xxii + 902 pp., illus. $22.50.

What we have here is neither a guidebook nor a gazetteer but a series of rather simple-minded reflections on the consequences of government "aid" for "tribal" minorities located in various parts of Southeast Asia from Assam eastwards. There are in all 21 separate essays by diverse authors, with supplementary comments by the editor. The main emphasis is on areas that have of late been of military interest to the U.S. government — Burma, Yunnan, Thailand, Laos, Vietnam. Cambodia and the Malay Peninsula are excluded, though there are two out-of-context papers on Malaysian Borneo, presumably because at the relevant date SEATO was offering a military confrontation to Indonesia along the borders of Sarawak. The general level of discussion is that of low-grade ethnography touched up with some highly optimistic assessments of the activities of various American and local government-sponsored agencies.

This "development" orientation stems from the fact that most of the papers originated in a conference financed by the U.S. Department of Defense in the summer of 1965, and it is quite clear that political rather than academic considerations influenced both the selection of authors and the choice of topics. For example, chapter 8, "U.S. aid to hill tribe refugees in Laos," which refers to events in 1963–1965, has the pathetic flavor of innocence which anthropologists have learned to associate with the most naive sort of missionary. At the other extreme, chapter 18, "The Strategic Hamlet Program in Kien Hoa Province, South Vietnam: A case study of counter-insurgency," is frank and realistic but in present circumstances can only be reckoned as macabre. Most of the papers, it is true, have a more ethnographic slant than this, but the fact that the editor tells us that Mote's paper on north Thailand Yunnanese was based on "approximately eight days" of field research gives some measure of their general quality.

In this sort of context the more experienced professionals seem to have found themselves embarrassed, and very few of the anthropologists have made any serious attempt to increase the sum of human knowledge. Indeed, the majority of the essays read as if they had been written up in the course of a couple of afternoons with a view to justifying an air fare. The principal exception here is Lehman's contribution, which is a valuable sociological analysis of the generation of ethnic self-consciousness in its Burma context. McAlister's paper on the distribution