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

of mountain minorities in Vietnam and their role in the Viet Minh war of independence against the French is also a work of real scholarship which still has great relevance even in the political and military context of 1968. But in general there must be very few kinds of reader who could discover in these pages the kind of information they might be looking for.

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Zootoxicology

Venomous Animals and Their Venoms. Vol. 1, Venomous Vertebrates. WOLFGANG BÜCHERL, ELEANOR E. BUCKLEY, and VENANCIO DEULOFEU, Eds. Academic Press, New York, 1968. xxiv + 707 pp., illus. $24.

Venomous Animals and Their Venoms is to be a three-volume publication. A comprehensive work on venoms, especially one in English, is long past due. The last extensive publication in any language was the two-volume *Animaux Venimaux et Venins* by Marie Phisalix, which appeared in 1922. Unfortunately, the new three-volume publication apparently will not be as extensive, and some groups important to the venomologist, the general zoologist, and the physician will be omitted.

The opening sentence of the introduction to volume 1 states that "the so-called venomous animals described in these volumes possess at least one or more venom glands and mechanisms for excretion or extrusion of the venom, as well as apparatus with which to inflict wounds." This last stipulation is somewhat misleading, since the table of contents for volume 2 includes papers on venomous toads and other amphibians.

Volume 1 consists of 20 chapters. The first three give excellent coverage of venomous mammals, including the platypus (Australian duckbill), *Ornithorhynchus anatinus,* and the insectivores. The discussion of the latter includes not only the shrews (genera *Neomys* and *Blarina*) but also the squirrel-sized forms of the genus *Solenodon.* The remaining 17 chapters give partial coverage of venomous snakes. Of these, chapters 4 through 9 give "general information" on evolution, venom extraction from Brazilian snakes, and comparative biochemistry of snake venoms. Chapter 10 gives very general information on the methods of classification of venomous snakes. This chapter has excellent line drawings of snake skulls and other anatomical features, but none of the structures are labeled and thus the illustrations contribute little to furthering the editors' stated purpose of producing a book useful to students and laymen as well as to those with professional interest in the subject. This omission also makes the key on page 311 of little value to any but the specialist. Chapter 11 discusses the venomous sea snakes but lacks a key to the species and illustrations of the venom apparatus. Venomous snakes of Central and South Africa are covered by chapters 12 through 17, and the remaining three chapters are devoted to those of East Asia, India, Malaya, and Indonesia.

This volume will serve as an excellent point of departure for the novice in venomology. It will be of largely academic interest to physicians and veterinarians of the United States and Canada. Physicians are forewarned that discussions of "cryotherapy" in several places throughout the volume are actually only considerations of "hypothermia," which per se can be harmful when used in conjunction with venenation by venoms that are capable of producing local histolysis such as those of pit vipers and some spiders. Their special attention is directed to chapter 20, "Symptomatology, pathology and treatment of land snake bite in India and Southeast Asia." In this chapter H. A. Reid fortunately points out important therapeutic principles that have wide application.

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Semiconductors

Electrochemistry of Semiconductors. VIKTOR A. MYAMLIN and YURII V. PLESKOV. Translated from the Russian edition (Moscow, 1965). Plenum, New York, 1967. xxiv + 430 pp., illus. $19.50.

This book reports an abundance of experimental results and is very thoroughly referenced to both the Russian and English literature up to 1965, when the original Russian edition was written. In addition, to update the American edition through 1965 the authors have added an appendix commenting on the state of the electrochemistry of semiconductors, and to each chapter they have appended a considerable listing of additional literature.

The authors close the preface to the English edition expressing the hope that the text will promote scientific exchange in the field of electrochemistry of semiconductors. The book should serve this end among workers already involved in this specialty, but unfortunately it cannot be regarded as an attractive vehicle for one intending to enter the field with a conventional electrochemistry or solid state background. A number of crucial errors, feeble definitions of some important terms, and nonsequential developments militate against the use of this work as an introductory text. Too brief an index also limits the value of the book as a reference work, but a detailed table of contents partially compensates for this weakness.

Measurement techniques, theory, and experimental results which help define and explain the often complex role of the semiconductor in semiconductor-electrolyte cells are examined in the first three chapters. The participation of minority carriers, carrier lifetime effects, and the existence of a space charge region in the semiconductor at the electrolyte-semiconductor interface are evidenced as accounting for the sharp distinction between this area of study and the realm of metal electrolysis.

Although most of the work described is concerned with germanium and silicon, several III–V compounds, CdS, and ZnO are also represented. Most of the definitive techniques described involve either the manipulation of minority carrier concentrations or potential distributions in the semiconductors. Among the methods described are those involving photostimulation, minority carrier injection by nearby rectifying contacts or components of the electrolyte, pulse signal, and a-c techniques. The results of these are presented and analyzed in some detail.

The concluding two chapters deal with the corrosion of semiconductors and the practical application of electrochemical methods to the analysis of semiconducting materials and the preparation of semiconductor surfaces.

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