large amount of information about this species. Information about the distribution, both geographic and local, feeding habits, migration, and distinctive characteristics of the black brant is combined with an appraisal of its present chances of survival, and with suggestions about better management procedures and techniques to preserve, and to augment, its numbers. The author's approach and point of view are primarily that of a conservationist interested in protecting the species as a game bird for the benefit of those sportsmen who like to hunt it.

The book has a number of pen-and-ink illustrations, by Harold Cramer Smith, which are very variable in quality. Some are pleasant enough, but not in any real sense additions to the text, while others are crude to the point where they could easily prejudice the reader against the book. The duck hawk (?) attacking two black brants (p. 61) is more like a cartoon than a rendition of its subject. The volume has a useful bibliography and is well indexed.

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Archeology in Tropical America

They Found the Buried Cities. Exploration and excavation in the American Tropics. Robert Wauchope. University of Chicago Press, Chicago, 1965. viii + 382 pp. Illus. $7.50.

The author, an archeologist, who is director of the Middle American Research Institute of Tulane University, has as his theme the proposition that a scientist need not be afraid of making his published material interesting. He laments the fact that in recent years most archeologists have become so pedantic that they feel it unprofessional to include in their reports anything personal, emotional, adventurous, or romantic.

This was not true of the early pioneers in Middle American exploration who managed to include in their archeological reports personal adventures, romances, and frustrations, as well as colorful descriptions of the native peoples, natural history, and the generally exotic atmosphere that surrounded travel in the tropics.

The individualists of those days have been replaced by a breed of scientist cast in the academic mold, who feel that their scientific problems should be completely detached from the matrices in which they occur.

In addition to this, it must be admitted that conditions in the American tropics have changed greatly during the past 30 years. Highway construction and air transport have now largely done away with the need for mules and canoes. This means much less intimate contact with the people and country. Newly constructed hotels and motels have virtually eliminated the need for staying in native houses or primitive camps. When camps are established, it is now possible to equip them with refrigerators, comfortable sleeping quarters, and even electric plants. Modern sanitation methods, insect repellants, and miracle drugs have banished the fear of disease. And more stabilized governments in the Latin American countries have practically eliminated the wandering groups of bandits that formerly were a hazard to the explorer in remote places.

However, there still remain many sites to be discovered and worked. The land and the people are interesting, and there are always local politicians and red tape with which one must cope.

In *They Found the Buried Cities*, the author leads off with a 69-page, condensed account of his own experiences, which began in 1932 when as a young man he joined the staff of the Carnegie Institution's camp at Uaxactun. In describing this experience and later work in Guatemala, his vivid writing loses nothing in comparison with that of his predecessors which he so admires.

Not only are his experiences in the bush described in a way that makes the reader feel that he is present, but his personalized accounts of his involvements with social situations, customs, permits, local rivalries, finances, and the like make one realize that conducting an archeological expedition is considerably more than digging in a ruin. Like an iceberg, in scientific work only a fraction appears above the surface.

Following this entertaining introduction are well-chosen selections from the writings of 17 travelers, mostly archeologists, among whom are John L. Stevens, E. G. Squier, Désiré Charnay, Alfred Maudsley, Teobert Maler, and Sylvanus Morley. In these accounts, which are replete with adventure, humor, tragedy, and romance, the character of each writer emerges in clear perspective. At the same time, each of these men was above all a dedicated scientist.

Each of these fascinating excerpts does much to bolster Wauchope's point that scientific value is not necessarily lost in making a report entertaining.

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The Fungi

The Genus Aspergillus. Kenneth B. Raper and Dorothy I. Fennell. With a chapter by Peter K. C. Austwick. Williams and Wilkins, Baltimore, 1965. xii + 686 pp. Illus. $20.

This treatise on the genus *Aspergillus* is the third to appear since 1926. The authors dedicate this volume to the senior author of the previous two, Charles Thom (1872–1956). The work is "designed to provide keys and descriptions for the identification of the *Aspergilli*"; 132 species and 18 varieties are recognized versus 77 species, 8 varieties, and 4 mutations in *A Manual of the Aspergilli* (1945). These taxa are assigned to 18 groups (the authors' category for a subdivision of a genus), of which five are new. The cultural characteristics and morphology of each taxon are described in detail and workable keys provided. Profuse illustrations greatly enhance the utility of the text. Four most useful checklists are included: (i) generic and (ii) specific names applied to *Aspergilli,* (iii) fungi incorrectly designated as *Aspergilli,* and (iv) recognized species and varieties.

Contrary to the rule set forth in the International Code of Botanical Nomenclature, utilization of the generic epithet *Aspergillus* for both the asexual and sexual stages is advocated. Whether "most workers" (= "the majority of mycologists"?) "accept" this procedure or assign those species forming ascocarps to ascomycetous genera [see C. R. Benjamin in *Mycologia* **47**, 699 (1955)] is in question.

The primary objective of this text is to present a comprehensive, yet usable, treatment of the *Aspergilli.* Simultaneously the authors have provided, in the introductory chapters, a wealth of information on special media for

cultivation, environmental factors that influence growth and sporulation, isolation and preservation, natural and induced variation in the genus, and pathogenicity. The chapter on pathogenicity (including toxicosis) to man, mammals, birds, and insects was written by P. K. C. Austwick. The literature prior to 1964 dealing with aflatoxin is thoroughly summarized. Concern about the presence of this carcinogenic antimetabolite in grains and nuts, and feeds and foods (for example, in peanut butter) derived therefrom, has mushroomed since final preparation of the manuscript.

Each of the 18 chapters that treat a recognized group ends with a subchapter usually entitled "Occurrence and significance." Herein the enzymes, organic acids, antibiotics, pigments, and other metabolic products of various species are thoroughly discussed. The natural habitats of species are indicated (for example, coniferous forest soils for *Aspergillus kanagawaensis*); the roles that different species play in the deterioration of foodstuffs and fabrics, in phytopathology, and in important industrial fermentations are reviewed. Genetic studies involving *Aspergilli* (as *A. nidulans*) are summarized. The bibliography and index complete the work.

With the *Manual* both out-of-print and out-of-date, this text becomes an essential source of up-to-date information on the genus *Aspergillus*. Many other genera of the fungi need similar comprehensive treatment.

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Comparative Endocrinology

Animal Hormones. J. Lee and F. G. W. Knowles. Hillary House, New York, 1965. 192 pp. Illus. $3.

This monograph in the Hutchinson University Library Series discusses the hormones of animals, both vertebrate and invertebrate, in a comparative fashion that "is intended to guide the reader rather than to provide him with a comprehensive account." Within the limitations implied by this statement of intent, this book will be useful to the neophyte in comparative endocrinology; I am such a neophyte, and I found the book interesting and informative.

Vertebrate hormones and the structures that secrete them are discussed, with the emphasis on the endocrines of mammals that one expects in view of the clinical and physiological origins of endocrinology. Each of the major endocrine organs is briefly discussed in a separate chapter, in which a description of anatomy and physiology in mammalian forms is followed by a summary of the organ's structure and function in birds, reptiles and amphibians, fishes, and the lower vertebrates. Hormones secreted in nonendocrine structures (for example, secretin) are treated separately. The hormones of invertebrates occupy a rather large portion of the text, allowing discussion in greater depth of the limited knowledge available in this area. Attention is called to the prevalence of neurosecretion of invertebrate hormones, and a summary chapter emphasizes the central importance of neurosecretion in hormonal regulation in vertebrates as well as in invertebrates. The authors point out that "the study of comparative endocrinology suggests that endocrine control may have arisen in the first place by specialization of certain elements of the nervous system."

The type is legible and only a few typographical errors mar the technical excellence of the volume. There is an adequate index but only a brief bibliography. Illustrations are few and limited almost entirely to anatomical drawings. The text is generally well-formulated and lucid, but there are occasional lapses—"the glucocorticoids promote gluconeogenesis, which, briefly, convert proteins and fats into glucose" and "the growth hormone . . . not only controls the rate of growth, but also the metabolism necessary for this growth." That these lapses appear in sections dealing with the biochemistry of hormone effects is significant, as they reflect a general tendency to treat this area very gingerly or to ignore it entirely.

Animal hormones is a large subject, and this is a small book. This leads to a treatment of the subject that will be too superficial for some, although its brevity is an asset in presenting relationships between the hormones of the various animal forms. I recommend the book to those who are interested in a brief introduction to comparative endocrinology.

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Ocean Surfaces

Wind Waves: Their Generation and Propagation on the Ocean Surface. Blair Kinsman. Prentice-Hall, Englewood Cliffs, N.J., 1965. xxiv + 676 pp. Illus. $23.35.

So rapid have developments been in the past 15 years that a truly useful textbook on ocean wind waves would have been in danger of obsolescence before going to press. However, Kinsman has managed to incorporate all but the very latest developments in the rapidly advancing field of wave research in this long awaited book. Students, engineers, and scientists embarking for the first time on oceanographic study, as well as those who have labored in wave research, will be grateful for this admirably comprehensive work. Kinsman maintains a reasonably detached point of view, perhaps because he was one of the few "spectrum analysts" who did not propose an empirical spectrum of his own. Beginning slowly, he carefully develops the necessary background from classical hydrodynamics and small amplitude theory to ocean waves of finite height. For historical completeness and to show developments leading to the present state of linear wave models, a summary of the Sverdrup-Munk wave forecasting theory is included.

More than half the book is required to bring the reader to the point where the natural seaway is described in terms of a random process, and the realization that the energy spectrum is the necessary statistical parameter to replace the specification of an average wave height and poorly defined wave period value. Considerable space is devoted to the work of Pierson and Neumann, and to the stimulus provided to ocean wave forecasting research by their pioneer efforts to develop a wave spectrum approach. A brief but useful review of some recent measurement techniques is presented, and from this point on (chap. 10) the author prepares the reader for the several mechanisms of wave generation proposed by Phillips, Miles, Hasselmann, and McGoldrick. Here, the going gets a bit rough for the average reader, but Kinsman attempts wherever possible to explain the physical principles expressed by the compact mathematical notation. Even though the author does not mention automated wave prediction techniques and presents only cursory discussion of the empirical spec-