

Everyone likes to be able to attach a name to a species seen for the first time. This book will not only enable us to identify any bird observed in the area, it will provide information on behavior, vocalizations, ecology, and distribution. There are also descriptions of most species believed to have become extinct in recent years. Some of the rarer visitors are depicted in black and white drawings. The authors are to be congratulated on producing a valuable guide that meets the highest standards of the library of guides that are covering more and more of the world of birds. The illustrations by H. Douglas Pratt are exceptionally clear and accurate.

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**FUNCTIONAL ANATOMY OF THE VERTEBRATES. An Evolutionary Perspective.**

By Warren F. Walker, Jr. Saunders College Publishing, Philadelphia (Pennsylvania). \$45.00. xv + 781 p.; ill.; glossary-index. ISBN: 0-03-064239-6. 1987.

Warren Walker is well known for his dissection guides to vertebrate structure, manuals that are widely used in undergraduate courses in comparative vertebrate anatomy. In this new work, Walker has written a comprehensive textbook of comparative anatomy, emphasizing the themes (as the title suggests) of function and evolution.

Walker begins with a general chapter on basic concepts in comparative morphology (such as homology, phylogeny, heterochrony, and surface-volume relationships) and then proceeds to briefly review protochordate and vertebrate diversity. The remaining chapters cover the expected areas of vertebrate morphology by system; thus, such topics as the integument, skeleton, muscles, nervous and endocrine systems are treated in turn. I found several features of these systemic sections to be especially good; the chapters on the integument and the body cavities and mesenteries are well done. The book is very nicely illustrated with clear, well-labeled diagrams, and several of the more complex figures of development and circulation are in color.

The evolutionary perspective promised in the title is less well presented. After a concise but useful summary of methods of phylogeny construction in Chapter 1 (in which it is clearly stated that shared, derived characters are the basis for determining genealogical relationship and that "reptiles" are a paraphyletic group), these concepts are not used in the remainder of the book. It would have been nice to have used precise phylogenetic diagrams explicitly in each chapter to show the hierarchical pattern underlying the form and function of each organ system.

The book, while attempting to take a functional

approach, is not nearly as physiological and functional as the books on vertebrate morphology by Kluge et al. and by Hildebrand. Rather, this volume falls closer to the genre defined by the classic, *Vertebrate Body*, by Romer, with significant new functional information added. It may thus fill a need in textbooks of vertebrate morphology by focusing on an analysis of structure, while at the same time presenting selected up-to-date information on organismal function.

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**THE ROLE OF SELENIUM IN NUTRITION.**

By Gerald F. Combs, Jr., and Stephanie B. Combs. Academic Press, Orlando (Florida). \$79.00. xii + 532 p.; ill.; index. ISBN: 0-12-183495-6. 1986.

This book is an extensive, up-to-date review of the scientific literature concerning the role of selenium in both nutrition and health. In eleven chapters are included over 1800 references on this essential trace element up to and including the year 1986.

In Chapter 1, the chemical forms of selenium and a critical review of methods of analysis of selenium in biological fluids are discussed. The next two chapters deal with selenium in rocks and soils and its uptake in plants used as food for animals and man. Extensive lists of selenium content in foods and foodstuffs are tabulated for various countries. The contents range from a low of 7 micrograms/day producing a deficiency to a high of 5000 micrograms/day with toxicity. The factors that affect the bioavailability of selenium, such as chemical form, food matrix and dietary factors, are described for both animals and humans. Tissue concentrations in animals are listed in an extensive table, and the absorption excretion and metabolism of selenium are described in detail along with its biochemical functions. A most interesting section on the interrelationships of selenium and other elements and nutrients is included to illustrate the complexity of the study of nutrition. Chapter 7 describes the selenium deficiency syndromes in laboratory, domestic and livestock animals and is complete with photographs of gross and organ-specific pathologies. The last four chapters deal with selenium in human nutrition and health and describe in detail selenium contents in human tissue, selenium nutritional status of various countries, selenium toxicity, and its beneficial effects on immunity and infection, its carcinogenesis, and its cancer risk.

The authors' style is easy to read and especially welcome in light of the fact that many scientific reviews such as this one are multi-authored and exhibit a plethora of different styles. A delightful and unique plus is the brief historical perspective at the