diversity. But I would accompany the recommendation with a warning: the volume is sloppily edited and some of the information is unreliable.

JESSICA FORREST, *Biology, University of Ottawa, Ottawa, Ontario, Canada*

HOW SNAKES WORK: STRUCTURE, FUNCTION, AND BEHAVIOR OF THE WORLD'S SNAKES.

By Harvey B. Lillywhite. Oxford and New York: Oxford University Press. $49.95. xiii + 241 p.; ill.; index. ISBN: 978-0-19-538037-8. 2014.

There is a particular satisfaction in reading a well-crafted, richly detailed scientific textbook written by an expert with an obvious passion for his or her subject—a person who has clearly spent a lifetime immersed in an arcane field, and has the fortuitous ability to draw others in with skillful prose. Harvey B. Lillywhite has produced an exemplar of such a volume.

Snakes are an ideal group for examining interesting evolutionary adaptations. Their unique limbless body form dictates that when they move, grow, and reproduce, they often do so in ways that are fundamentally different from other vertebrates. However, because one of these evolved mechanisms includes a highly toxic bite, they also have a long coevolutionary history with primates, who seem to universally regard snakes and snake-like animals with fascination and fear. Thus, perhaps more than other lineages, snakes have long been objects of interest for both the general public and scientists such as Lillywhite.

The author may not be unique in his fascination, but he is decidedly so in his expertise. Lillywhite has spent a long career investigating in detail the physiology, morphology, and behavior of snakes, and he is ideally positioned to explain to the world how these animals work. He begins with a surprisingly knotty problem: what is a snake? The group does have some unique derived attributes, but they probably are not what you think. This discussion on classification leads nicely to an up-to-date summary of the evolutionary history and systematics of the clade.

The subsequent chapters of the book are all organized around basic functions of animal life: feeding, moving, temperature regulation, sensory perception, and mating, among others. Each chapter is a logically arranged explanation of how snakes tackle these problems, with an emphasis on the unique adaptations that have evolved within the group. Anyone seeking to understand the spectacular and unusual range of physiological and morphological attributes of snakes will be rewarded by a concise but comprehensive review of what we know, and how we know it. Of course, the volume cannot cover all aspects of ophidian biology, and readers should be alerted to the emphases of the book by the subtitle. This is a publication largely about mechanistic details of the morphology and physiology of snakes. These discussions take place in the broader context of ecology and evolution, but Lillywhite does not review recent research in snake ecology and evolution in the same detail as he does functional morphology and physiological ecology.

This book is not only ideal as an aid to scientists already working in the field, perfect for keeping abreast of recent findings, but is also well suited for interested general readers, amateur enthusiasts, or beginning students. In fact, the next time a bright young undergraduate comes into my laboratory seeking to begin a career researching snakes, this will the volume that I give them. It is a perfect balance of accessible and informative: the ideal book to rapidly draw an outsider into the wonderful world of snakes.

RULON W. CLARK, *Biology, San Diego State University, San Diego, California*

AVIAN IMMUNOLOGY. *Second Edition.*

Edited by Karel A. Schat, Bernd Kaspers, and Pete Kaiser. Academic Press. Amsterdam (The Netherlands) and Boston (Massachusetts): Elsevier. $159.95. xvi + 439 p.; ill.; index. ISBN: 978-0-12-396965-1. 2014.

PENGUINS: THE ULTIMATE GUIDE.

By Tui De Roy, Mark Jones, and Julie Cornthwaite. Princeton (New Jersey): Princeton University Press. $35.00. 240 p.; ill.; index. ISBN: 978-0-691-16299-7. 2013.

This is an exceptionally well-presented book with contributions from three major authors and 15 collaborating authors. The three major authors are professional photographers with considerable experience sailing through polar regions. They have accomplished these photographic journeys on large tour ships as well as small boats. Most notable was their two-month-long circumnavigation of the Antarctic on a Russian icebreaker, and using their own small sailboat they sailed to the Bounty Islands. The latter are found in a region of extremely rough seas, and must have tested the dedication of the authors to their subject.

The book is organized into three major parts. The first, Life Between Two Worlds, by De Roy, includes well-written prose with many fine metaphors. She describes her passion for all 18 species, and illustrated with some of the best in penguin photography. In fact, there are so many photographs that they sometimes become a distraction to her lyrical writings. Smoothly inserted into her stories are many interesting facts such as the diver-