

use of both induced and spontaneous mutant strains of rodents, this compilation of information is both welcome and valuable. I would recommend this book to all laboratory animal program managers, veterinarians and researchers using significant numbers of rodents.

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PARASITIC INFECTIONS OF DOMESTIC ANIMALS: A DIAGNOSTIC MANUAL.

By Johannes Kaufmann. Basel and Boston (Massachusetts): Birkhäuser Verlag. \$69.50. xvi + 423 p; ill.; index. ISBN: 0-8176-5115-2. 1996.

The author has succeeded in the monumental task of producing a diagnostic manual covering the parasites of domestic animals of Africa. The book contains 7 chapters: the first on diagnostic methods for parasites of veterinary importance and the following six on the parasites found in specific livestock. In the first chapter a step-by-step description is given for each diagnostic procedure. A unique feature of this chapter is the section on molecular biological techniques that are gradually coming into use for the diagnosis of parasitic infections. This section does not provide cookbook descriptions, but rather describes the theoretical background behind such techniques as the Southern Blot, PCR and (RAPD)-PCR. Thus the reader is given enough information to understand the basic mechanisms underlying the commercial diagnostic kits that use these techniques, without being overwhelmed with specifics that will most likely change with each new update of the kit.

Each of the chapters on parasites of specific livestock (cattle, sheep and goats, horses and donkeys, dromedaries, swine, and poultry) is subdivided by organ system. The author frequently refers to material in other sections and chapters; fortunately each section is numbered and color-coded, allowing the reader to quickly find the relevant information. Each parasite is described in detail, as are the symptoms it might elicit in a host. The description of each parasite concludes with how a diagnosis can be made, and the therapy and control measures appropriate for the host under discussion. The text is comprehensive and covers all the protozoa, helminths, arthropods, as well as the Rickettsiales that infect domestic livestock (if the author missed a parasite that exists in Africa, I was not aware of it). There are over 700 photographs and diagrams (320 in color) illustrating diagnostic stages, adult parasites, and animals showing clinical signs.

Although this book is designed as a diagnostic manual, its coverage is so extensive that it could serve as a textbook in veterinary parasitology. I

found no inaccuracies, but this first edition still contains many typographical errors. Therefore, the veterinarian should heed the publisher's warning to double-check drug dosages before treating an animal. Because this manual is so easy to use and comprehensive, it should find a place in every veterinary practice in Africa, as well as on the shelf of veterinary parasitologists worldwide.

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THE AMPHIBIANS AND REPTILES OF THE YUCATÁN PENINSULA.

By Julian C Lee. Ithaca (New York): Comstock Publishing Associates (Cornell University Press). \$175.00. xii + 500 p + 40 pl; ill.; subject and taxonomic indexes. ISBN: 0-8014-2450-X. 1996.

This is a first-class professional guide and reference work to the herpetofauna of the Yucatán Peninsula, a region that spans the intersection of southeastern Mexico, northern Guatemala, and Belize. Sixty-five million years ago it was ground zero for a giant asteroid or comet, but today it is a relatively flat area with abundant limestone, a scattering of forest, and a rich herpetofauna (182 known species). Most (90%) of the book is reference material, with the remainder devoted to a description of the region, herpetological history, and an unusual chapter on ethnoherpetology. The latter is appropriate for an area that is so well-known for its native American (Mayan) history.

The species accounts are exceptionally thorough, and the distribution maps show specific localities in addition to presumed ranges. There are 211 color photographs (most by the author) and 189 drawings (all by the author), covering an impressive 97% of the species. Lee is a gifted illustrator; I found the head drawings of snakes to be particularly nice. Dichotomous keys are in English and Spanish. Another unusual but useful section is a detailed gazetteer of place names and their coordinates. Missing is a section on biogeography, which might have speculated on the origin of the Yucatán herpetofauna and its relationship to those of neighboring regions.

This book was intended to be an identification guide for amateur naturalists and professionals, although at 8x11x1 inches, it is not a field guide. Moreover, at such a high price it is unlikely that many persons will be able to afford it. Nonetheless, it is a splendid piece of work that will be an important reference for many years to come.

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PROGRAMS TO ACCOMPANY "ANOLIS LIZARDS OF THE CARIBBEAN: ECOLOGY, EVOLUTION, AND PLATE TECTONICS." *Version 1.0.*

By Jonathan Roughgarden. New York: Oxford University Press. \$25.00 (one 3½" disk). ISBN: 0-19-509755-6. 1996. [Requirements—IBM PC: 80386 processor or higher, DOS 3.3 or Windows 3.0 or higher, 2.7 MB hard disk space, 4 MB RAM. (This volume was reviewed in the September 1996 issue of the QRB (71:430).]

ECHINODERMS THROUGH TIME. *Proceedings of a conference held in Dijon, France, 6–10 September 1993.*

Edited by Bruno David, Alain Guille, Jean-Pierre Féral, and Michel Roux. Rotterdam and Brookfield (Vermont): A. A. Balkema. \$135.00. xxiii + 940 p; ill.; author index. ISBN: 90-5410-514-3. 1994.

This large compendium of short papers and abstracts presented at the Eighth International Echinoderm Conference reflects the state of research on this invertebrate phylum as of late 1993. The 215 entries range from one-page abstracts (93 of these) to longer 1–13 page papers (122 total) organized into general topics, extinct classes, and a chapter apiece for the five living classes. All abstracts and most papers are in English; a few papers are in French with an English abstract. These entries can be divided into 10–12 general topics including: morphology of echinoderms (17 percent), reproduction, development, and larval stages (17 percent), ecology of echinoderms (17 percent), fossil occurrences (13 percent), biochemistry of echinoderms (11 percent), echinoderm faunas and their distribution (7 percent), phylogeny of living and fossil groups (5 percent), predation and parasites on echinoderms (4 percent), skeletal growth (3 percent), plus several additional topics (about 6 percent).

Among the most noteworthy papers are those by Marshall, reviewing the various molecular approaches to produce a consensus phylogeny of living echinoderms; by Mooi, David, and Marchand on homologies in the axial and extraxial echinoderm skeleton and the uniqueness of echinoids; by Pearse and Pearse on cladistic analysis of living echinoderms, with concentricycloids being the sister group of asteroids; by Baumiller on dominance and extinction in three sequential groups of Paleozoic crinoids; by Simms reinterpreting the homology of crinoid thecal plates, based on stem orientation and deriving a new phylogeny; by Gebruk on the distribution and evolution of deep-sea holothurians from shallow Tethyan ancestors; by Haude using constructional morphology to derive the holothurian calcareous ring from first ambulacral plates; by Poulin and Féral on the nondispersal consequences of brood protection in Antarctic

echinoids; and by Telford on graphical simulation of echinoid tests to compare different structural models. Several abstracts (Jefferies on extinct stem groups; Ausich on dominance of Paleozoic crinoids; Smith, Patterson, and Lafay on ophiuroid phylogeny; and Wray on echinoid larval phylogeny) also seem promising, but only a short summary was published here.

Minor problems with this volume include the uneven length and variable type style of the many papers, the proposal of a new species in an abstract (a violation of Zoological Code recommendations), and the volume's high cost. However, because of the wide coverage and many important papers, I would highly recommend this proceedings volume to anyone interested in recent research on echinoderms who can afford it.

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AQUATIC SCIENCES

THE WORLD OF THE ARCTIC WHALES: BELUGAS, BOWHEADS, AND NARWHALS.

By Stefani Paine. San Francisco (California): Sierra Club Books. \$26.00. xii + 116 p; ill.; index. ISBN: 0-87156-378-9. 1995.

Many people, myself included, have a great fascination with Arctic marine mammals. How do these animals survive, much less thrive, in what appears to be such a hostile, forbidding, and unforgiving place? Is food so abundant that it adequately compensates for the extreme cold, howling storms, hundreds of miles of crushing pack ice, limited breathing holes, and fierce predators? *The World of the Arctic Whales*, using an array of eye-catching photographs of belugas, narwhals, bowheads, and native peoples touches on many of these issues for cetaceans. This coffee-table style book is divided into chapters that discuss specific biological traits of whales (such as migration patterns in spring and birth in summer) as they become critically important each year. It concludes with several chapters on whaling, past and present.

This book has much to recommend it: occasionally powerful and descriptive text, evocative pictures, and thought provoking comments. Unfortunately, it also has many problems. It is not crisply written or edited, picture captions are inconsistent and inaccurate, the text often describes something interesting that the picture did not show (and interesting features on some pictures were not discussed), the few maps presented are poorly labeled and did not include directional information men-