

Book Reviews

ZOOLOGY

Animal Skulls – A Guide to North American Species

By Mark Elbroch. 2006. Stackpole Books, 5067 Ritter Rd., Mechanicsburg, PA 17055. 727 pages, \$34.65 Paper.

As an instructor of comparative vertebrate anatomy, and a self-proclaimed enthusiast of skulls, I very much looked forward to reading and reviewing this book. I learned a fair amount from this book, mostly regarding animals that don't live in my area, so overall, this book was for me, a valuable read.

There is an enormous amount of material synthesized in this book. There are the expected figures illustrating the skull bones from a number of species; neighbouring figures illustrate the measurements most commonly used. However, the figure for reptiles has several errors, and those for the birds and mammals also have a few...not a good start for fundamental material near the beginning of the book.

Skulls of each species are illustrated in three views within the species accounts. Elsewhere, montages of dorsal views (mammalian and herp crania) and lateral views (mammalian mandibles, birds) are quite useful, and where practical, are illustrated at life-size. Even though the skulls in these montages show less detail than in the species accounts, I've always found this set-up useful (as in the *Golden Field Guide to Birds*, where warblers and sparrows are illustrated in a similar manner).

There are a number of issues that I found annoying. Why, for instance, is the Mantled Howler Monkey described (and illustrated along with two other species of non-human primate)? They are native to Central and South America; Are they feral in North America? We are never told. We are never told of the distributions of any of the animals, a shortcoming if someone is trying to identify a skull they've found based on this book. Secondly, the author is somewhat free with his use of the word *bone*. "Occipital condyles", for instance, are *processes* of bones, not bones unto themselves, though that is how they're treated. In a book that thankfully retains appropriate terminology, this oversight will be undetected by the novice, but irritating to the experienced. I now need to shout..."Molars are not flat!" I have to remind my students of this constantly. In English, we have the two words, "flat" and "broad", and they are not interchangeable. Molars adapted for grind-

ing vegetation are broad...they are anything but flat as erroneously described numerous times in this book. There are a few other annoying errors in this vein. Given the number of prominent, pre-publication reviewers mentioned in the acknowledgements, one must wonder about their diligence to this project.

The title is awkward, *Animal Skulls* (as opposed to part two in the series, *Plant Skulls?*)...and misleading...*a guide to North American Species*: fish are not covered at all, amphibians and reptiles are given a token amount of space (12 species, fewer than 3% of those in North America), birds (71 species, 10% of breeders) are allotted only a fraction of the coverage of mammals (143 species, one-third of known species), this despite the fact that the number of species of birds alone outnumbers those of mammals in North America. I do understand that there is very little variation in skulls amongst warblers or sparrows, for example, and illustrating each species could quickly become redundant. However, the mammalian bias is still overwhelming.

The mammalian dominance in this book is also reflected in the amount of text devoted to each species account – one *line* for each herp, one paragraph for each bird, four or more paragraphs for mammals. About 100 pages of measurement data are provided for mammals (which is wonderful), though none is provided for the others. One is forced to ask, "Why bother with the birds and herps at all?" The same amount of space could have been used to make a more complete book focussing on mammal skulls alone. Then, subsequent volumes addressing other taxa could complete the series.

I particularly liked the early chapters on interpreting form, marks on skulls (from gnaw marks to bullet holes) and preparing skulls. These chapters were informative and well-written. For me, a large part of the worthiness of this book was in these early chapters. That is not to diminish the worthiness of the mammalian species accounts, they too are thorough and instructive.

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