

**Review of Wilson, D.E. and R. A. Mittermeier (eds.)
Handbook of the Mammals of the World, Volume 2,
Hoofed Mammals (2011) and Volume 8, Insectivores,
Sloths and Colugos (2018). Lynx Edicions, Barcelona,
Spain.**

Upon receiving the two volumes of Handbook of the Mammals of the World from the publisher for review, I was not prepared for their size and weight, which is 32 x 25 cm and >5 cm thick and weigh ~4 kg (vol. 2) and ~3 kg (vol. 8). This stretches the meaning of “handbook” (usually, a small conveniently carried book), but regardless there is little doubt that this beautiful set of tomes is very nicely produced (see <https://www.lynxeds.com/catalog/hmw> for the publisher’s information on the 9-volume series). Volume 2 includes the armadillo and hyraxes, while volume 8 includes the Afrotheria and Macroscelidea. The authors of the various orders or families (clades) are among the most knowledgeable authorities on each (and many are members of our specialist group), and thus the information presented is accurate, clear, and comprehensive. The format for each clade is consistent, starting (Figure 1) with an overview that includes: systematics, morphology, habitat, general habits, communication, food and feeding, breeding, movements, home range and social organization, relationship with humans, status and conservation, and a bibliography (there are no in-text citations, so the bibliography is rather general). This overview, essentially a synopsis of the natural history of the group, is followed by species accounts (Figure 2) that include information on the same topics as in the overview, but focused on each species.



Figure 1: First page of golden mole section in Handbook of the Mammals of the World, vol. 8, showing title page, including size range figure and high-level taxonomy. Following page shows a photo embedded in overview text.

The numerous photographs that are scattered throughout the overviews are excellent, and are among the best available. The photographs not only illustrate a wide selection of species in each group, but just as importantly also illustrate many typical habitats and behaviors. Small drawings clearly illustrate the size range of species in each clade, as well as taxonomic subdivisions (Figure 1). Each species is also beautifully and accurately illustrated in color, although for many small mammals, such as sengis, the difference between many species is beyond this type of illustration because the variation in external morphology and color patterns

sometimes is too cryptic or complicated to adequately illustrate (Figure 2). The generalized distribution maps located in the species accounts are also well done, being useful and clear (although species with highly localized distributions are very small, a compromise likely made to keep a consistent map format across all accounts).



Figure 2: Plate of sengi species in *Handbook of the Mammals of the World, Vol. 8*, followed by first two species accounts with distribution maps, showing a narrow and wide distribution on maps of similar scale.

Even with such a nicely produced and useful series of books, I found three broad issues worth mentioning:

1. HMW did not follow a phylogenetic arrangement in the tomes, but rather for “practical” reasons (according to the editors) volume 2 includes all the hoofed mammals, but oddly also the armadillo (Tubulidentata) and hyraxes (Hyracoidea) along with the largest afrotheres, the elephants (Proboscidea). Then, three years later Volume 4 was produced that includes sea mammals, and thus the manatees and dugong (Afrotheria Order Sirenia). Finally, seven years after volume 2 was published, volume 8 was produced, which includes the remaining Afrotheria - the sengis (Macroscelidea), and tenrecs and golden moles (Afrosoricida), along with “Insectivores” (thus perpetuating the confusion with the archaic order Insectivora), sloths and colugos. There is nothing practical about this arrangement in a science-based handbook, perhaps with the exception of volume 4 and convenience and perhaps benefits for the publisher. Not only are the Afrotheria fragmented in space and time, but in neither volume 2 nor 8 is there any attempt by the editors to tie the fragmented Afrotheria together, despite the nearly universal acceptance of Afrotheria, which is arguably among the more interesting mammal radiations, especially in terms of phylogeography and phylogenetics. Fortunately, the authors have included a short discussion of Afrotheria in their systematic overview of each clade, but the editors missed the opportunity to help tie the Afrotheria clades together.
2. Regrettably, the actual author(s) of the text for each clade are not included on the clade’s title page. Rather, the authors are cryptically listed in the Table of Contents, and their affiliations listed on a different page. This arrangement perpetuates the habit by many authors when citing specific sections in this type of book to use the editors instead of the actual authors. To help avoid this annoying practice by those of us working on the Afrotheria, and provide more details on the contributions in volumes 2 and 8, here are

abbreviated citations with important details for the each clade (in order of appearance in the two volumes):

- Taylor, W.A. 2011. Order Tubulidentata. Pp. 18-25 in: HMW Volume 2.
 - Hoeck, H.N. 2011. Order Hyracoidea. Pp. 28-47 in: HMW Volume 2.
 - Kennerley, R.J., T.E. Lacher, Jr, V.C. Mason, S.D. McCay, N.S. Roach, P.J. Stephenson, M. Superina, and R.P. Young. Conservation Priorities and Actions for the Orders Cingulata, Pilosa, Afrosoricida, Macroscelidea, Scandentia, Dermoptera, and Eulipotyphla. Pp. 15-27 in: HMW volume 8.
 - Jenkins, P.D. 2018. Order Afrosoricida, Family Tenrecidae. Pp. 134-17 in: HMW Volume 8.
 - Monadjem, A. 2018. Order Afrosoricida, Family Potamogalidae. Pp. 174-178 in: HMW Volume 8.
 - Taylor, W.A., S. Mynhardt and S. Maree. 2018. Order Afrosoricida, Family Chrysochloridae. Pp. 180-203 in: HMW Volume 8.
 - Heritage, S. 2018. Order Macroscelidea. Pp. 206-234 in: HMW Volume 8.
3. The HMW is a visually stunning, comprehensive, authoritative reference on mammals, and it is understandable given the high quality of the books that they are costly to produce. Unfortunately, this results in the handbooks being prohibitively expensive for many individuals, universities, museums and libraries and thus not widely available. For example, of the ten separate libraries of the University of California (together, likely one of the larger library systems in the world), only four hold one or more volumes of HMW. I could not check holdings in Africa, where the tomes are likely even rarer, yet this is where this kind of resource is desperately needed to achieve broader scientific literacy and more effective conservation. It is not clear how the conflicting goals of producing such a useful and beautiful set of books can be reconciled with getting copies to where they are especially needed. Perhaps a useful model is that followed by the editors and publisher of Kingdon, J., D. Happold, M. Hoffmann, T. Butynski, M. Happold, and J. Kalina (eds). 2013. *Mammals of Africa*. Bloomsbury, London: sets were donated to important and deserving universities and museums in Africa.

Having access to HMW will be very useful to many of us when we want to quickly check on some aspect of the natural history of one of the afrotheres. The authors, editors, and publisher have produced an excellent resource, overall.

I greatly appreciate that the publisher provided me a copy of volumes 2 and 8 so I could produce an informative review of this important contribution to the literature of the Afrotheria. I will ensure that these two volumes eventually find their way into a deserving library. Also, I appreciate discussions with Steven Heritage that lead up to this review.

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