



## Book review

**Handbook of the Mammals of the World. vol. 6. Lagomorphs and Rodents I, D.E. Wilson, T.E. Lacher, Jr., R.A. Mittermeier (chief editors). Lynx Edicions, Barcelona (2016). 987 pp., 60 colour plates, 737 colour photographs, 850 distribution maps, hardback. €160, ISBN: 978-84-941892-3-4**

The latest and sixth volume of the Handbook of the Mammals of the World has been as eagerly awaited as its predecessors – perhaps even more so because it is the first to also cover one of the most speciose groups, the rodents. But because it also contains the Lagomorpha and because it has been realized that a species-by-species account of a total of ca. 2500 rodent species is not feasible within a single volume, the rodents are covered in two volumes the second of which will be the next in line, which means that the HMW will eventually comprise nine volumes rather than eight as originally planned. That is good news because the present volume, just like the first five (and doubtless the remaining three), is once again a milestone in the mammalogical literature – not least due to its ca. 7300 bibliographical references. It includes the Lagomorpha and the Rodentia minus the Myomorpha (which will feature in the second rodent volume), ie it covers all 92 lagomorph species (pikas and leporids) and more than 700 species of rodents from the higher taxa Castorimorpha, Anomalurimorpha, Hystricomorpha (=Ctenohystrica) and Sciurimorpha, also including one of the most spectacular recent discoveries in mammalian diversity, the Laotian rock rat or Kha-nyou (*Laonastes aenigmamus*), a species that is part of a taxon long thought to be extinct and that has consequently been called the “coelacanth of rodents”. The structure of this volume is the same as that of its predecessors in that each higher taxon (“family”) is given a general introduction covering systematics, morphology, ecology, behaviour, relationships with humans and conservation status. It is here that, once again, gorgeous wildlife photographs abound. This is not new, but here it is even more remarkable than in earlier volumes because wildlife photography is clearly biased towards charismatic large mammals, and I had been wondering if the high quality of photographs could be kept up. The book answers this question in the affirmative – and quite impressively so! The species accounts and the plates with drawings of the highest quality add to the value of this volume. Taxonomically difficult taxa such as *Lepus* (which is ridden with interspecific hybridization) are dealt with in an appropriately critical way, and some of the accounts clearly show that taxonomic evaluations need an update, e.g. when it is reported that no less than 133 (!) different subspecies (all listed in the book) are

acknowledged for Botta’s pocket gopher (*Thomomys bottae*), which is nonetheless geographically restricted to the southwest of the US and parts of Mexico.

What is new is the introductory chapter that includes, for the first time in this handbook, a truly phylogenetic perspective in that cladograms for lagomorph genera and rodent “families” are presented and briefly discussed. Readers will probably ask themselves why this has not also been done for all the other groups so far. There is even a short summary of molecular phylogenetic methodology. This chapter also gives a readable overview of the evolutionarily and taxonomically important skull (protrugo-, sciuro-, hystrico- and myomorphous conditions) and mandible (sciuro- and hystricognathous conditions) morphology of the major rodent clades. The only downside of the introductory chapter (and one that is found in other parts of the book as well) is the use of *scala naturae*/great chain of being language (Rigato and Minelli, 2013), e.g. when xenarthrans are called the potentially “basal-most group” of placental mammals, when “primitive modern families” are mentioned or when the mountain beaver (*Aplodontia rufa*) is referred to as “perhaps the most primitive living rodent”. This is sloppy language, it is evolutionarily incorrect and it perpetuates what has been called the “primitive lineage fallacy” – the obsolete pre-Darwinian tradition of reading phylogenetic trees from left to right as ladders of progress (Omland et al., 2008; Zachos, 2016). This misrepresentation of phylogenetic relationships is, unfortunately, still widespread, but it does not diminish the overall impression of this volume, which is that of another superb addition to the mammalogical libraries around the world.

## References

- Omland, K.E., Cook, L.G., Crisp, M.D., 2008. Tree thinking for all biology: the problem with reading phylogenies as ladders of progress. *Bioessays* 30, 854–867.
- Rigato, E., Minelli, A., 2013. The great chain of being is still there. *Evol. Educ. Outreach* 6, 18.
- Zachos, F.E., 2016. Tree thinking and species delimitation: Guidelines for taxonomy and phylogenetic terminology. *Mamm. Biol.* 81, 185–188.

Frank E. Zachos  
Natural History Museum Vienna, Mammal  
Collection, Vienna, Austria  
E-mail address: [frank.zachos@nhm-wien.ac.at](mailto:frank.zachos@nhm-wien.ac.at)

Available online 16 September 2016