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Is *Leopoldamys neilli* (Rodentia, Muridae) a synonym of *Leopoldamys herberti*? A reply to Balakirev *et al.* (2013)

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Abstract

Recently, Balakirev *et al.* (2013) presented a taxonomic revision of the genus *Leopoldamys* based on phylogenetic analyses. They identified five main *Leopoldamys* genetic lineages and suggested to rename several of them. According to these authors, the genetic lineage previously thought to belong to *L. edwardsi* (lineage L1) should be assigned to *L. revertens* while *L. neilli* (lineage L2) should be considered as a junior synonym of *L. herberti*. Using molecular and morphological data from a large sampling of *Leopoldamys* specimens, the aim of the present study was to investigate the taxonomic status of *L. herberti* and *L. neilli*. This study reveals that, contrary to Balakirev *et al.*'s statement, both genetic lineages L1 and L2 occur in Nakhon Ratchasima Province, close to the type locality of *L. herberti*. We also show that the external measurements and color pattern of *L. herberti* are highly similar to those of L1 specimens but are not consistent with the morphology of L2 specimens. Therefore these results strongly suggest that *L. herberti* should be assigned to the genetic lineage L1. Consequently *L. neilli* should not be considered as a junior synonym of *L. herberti* and this study confirms that the appropriate name of the genetic lineage L2 is *L. neilli*. Moreover, as our results show that *L. herberti* should be assigned to the lineage L1, this name has nomenclatural priority over *L. revertens*, the species name suggested by Balakirev *et al.* (2013) for this lineage.

Key words: *Leopoldamys*, long-tailed giant rats, Thailand, Indochina, Murinae rodents

Introduction

The genus *Leopoldamys* Ellerman, 1941 comprises several species of long-tailed giant rats living in forests of Southeast Asia, and extending into northeast India and southern China. Recent studies of the taxonomy of Murinae rodents in Thailand based on molecular data recovered three main *Leopoldamys* phylogenetic lineages that were assigned to the three *Leopoldamys* species traditionally recognized in Thailand (Latinne *et al.* 2012, 2013; Pages *et al.* 2010). One of these lineages is distributed in southern Thailand and has been identified as *L. sabanus* (Thomas, 1887), another one is present in northern Thailand and has been assigned to *L. edwardsi* (Thomas, 1882) whereas the last one has been found exclusively in limestone karsts of continental Thailand and was identified as *L. neilli* (Marshall, 1977). The last-mentioned identification was supported by Pages *et al.* (2010) using sequences obtained from the holotype specimen of this species. Recently, Balakirev *et al.* (2013) presented a quite different taxonomic arrangement of the genus. They identified five main *Leopoldamys* genetic lineages and suggested to rename several

Conclusion

Five main *Leopoldamys* genetic lineages have been delimited and named by Balakirev *et al.* (2013) in their taxonomic revision of the genus. Based on the results of the present study, we propose to revise their nomenclature as follows: lineage **L1** = *L. herberti* (instead of *L. revertens*), **L2** = *L. neilli* (instead of *L. herberti*), **L3** = *L. edwardsi*, **L4** = *L. milleti*, and **L5** = *L. sabanus*. *Leopoldamys ciliatus* and *L. siporanus*, two additional *Leopoldamys* species recognized by Musser & Carleton (2005), were not included in the study of Balakirev *et al.* (2013) or in our study. Future taxonomic studies based on independent data (mitochondrial and nuclear markers, morphology) and geographically broader large sampling will be required to confirm these propositions and further improve the taxonomy of the *Leopoldamys* genus.

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