

# Phylogenetic evaluation of taxonomic definition of didelphid mouse opossum of the genus *Thylamys* from valleys of Coquimbo region, Chile

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## Resumen

Only two species of Didelphidae are currently recognized in Chile, the sister species *Thylamys elegans*, endemic of Mediterranean ecoregion and *Thylamys pallidior*, the inhabitant of the Puna and desert canyons. Three subspecies have been described for *T. elegans*: *T. e. elegans*, *T. e. coquimbensis* and *T. e. soricinus*. However, a recent study based on morphological analyses, synonymized *T. elegans coquimbensis* from the Coquimbo valleys (30-31 degrees S) with *T. pallidior* and proposed that *T. elegans* and *T. pallidior* could be in sympatry at Coquimbo valleys between Fray Jorge (30 degrees 40'S) and Paiguano (30 degrees 02'S). We assess the current definition of *T. e. coquimbensis* and *T. e. elegans*, as well as this taxonomical conflict among the mouse opossums from the Coquimbo valleys through phylogenetic analyses of cytochrome b mitochondrial gene sequences. In this study, for the first time, we used specimens from the type localities of *T. e. coquimbensis* and *T. e. elegans*. In addition, we analyzed diagnostic cranial structures for this taxonomic revision. The results supported two allopatric clades, allowing us to keep the taxonomic definition of *T. e. elegans* and *T. e. coquimbensis* as phylogenetic reciprocal monophyletic clades and polyphyletic with *T. pallidior*. This result corroborates previous morphological analyses, which support that mouse opossums from the Coquimbo valleys are *T. e. coquimbensis*, thus extending its geographic distribution to the coast of Coquimbo and Atacama regions. We don't have evidence for sympatric distribution between *T. elegans* and *T. pallidior* in the Coquimbo region.

## Palabras clave

**Palabras clave de autor:** [Atacama Desert](#); [biodiversity](#); [Cyt b](#); [T. e. coquimbensis](#); [T. pallidior](#); [transversal valleys](#); [type locality](#); [sympatry](#); [synonymy](#)

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