

Systematic review of *Neocavia* from the Neogene of Argentina: Phylogenetic and evolutionary implications

M. Carolina Madozzo-Jaén, M. Encarnación Pérez, Claudia I. Montalvo, and Rodrigo L. Tomassini
Acta Palaeontologica Polonica 63 (2), 2018: 241-260 doi:<https://doi.org/10.4202/app.00464.2018>


Caviidae is one of the groups of rodents with the greatest ecomorphological disparity, and with currently three known lineages: Caviinae (cuises), Dolichotinae (maras), and Hydrochoerinae (capybaras). Caviinae include small caviids represented by three extant genera (*Microcavia*, *Cavia*, and *Galea*) and three fossil forms (*Dolicavia*, *Palaeocavia*, and *Neocavia*). In Argentina, the fossil record of Caviinae is continuous and abundant since the late Miocene. *Neocavia*, specifically, is represented by different species recorded in the late Miocene–Pliocene. Here, we describe a new species of *Neocavia* from the late Miocene–early Pliocene of the Cerro Azul Formation (La Pampa Province, Argentina), and provide a re-description of already known species (*Neocavia lozanoi* and “*Neocavia depressidens*”). Also, we perform a more comprehensive review of the genus and include the *Neocavia* species in a phylogenetic context within Caviinae. We analyze the main patterns of the evolution of the tympanic bullae within Caviidae, and infer about a possible occasional fossorial habit of *Neocavia*. The morphological and phylogenetic analyses indicate that *Neocavia* is more closely related to *Dolicavia* and *Microcavia* than to the other Caviinae, and confirm the monophyly of the genus, with at least two clearly differentiable species. Since this study cannot confirm the systematic position and validity of “*N. depressidens*”, we suggest not to use this taxon as a biostratigraphic indicator.

Key words: Rodentia, Caviidae, *Neocavia*, phylogeny, evolution, Miocene, Pliocene, Argentina.

M. Carolina Madozzo-Jaén [cmadozzojaen@mef.org.ar], Museo Paleontológico Egidio Feruglio (MEF), Av. Fontana 140, Trelew, U9100GYO Chubut, Argentina; Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET); Facultad de Ciencias Naturales e Instituto Miguel Lillo, Universidad Nacional de Tucumán, Miguel Lillo 205, T4000JFE, San Miguel de Tucumán, Argentina. M. Encarnación Pérez [mperez@mef.org.ar], Museo Paleontológico Egidio Feruglio (MEF), Av. Fontana 140, Trelew, U9100GYO Chubut, Argentina. Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET); Associate Researcher Field Museum of Natural History (FMNH), Chicago, IL, USA. Claudia I. Montalvo [cmontalvo@exactas.unlpam.edu.ar]

], Facultad de Ciencias Exactas y Naturales, UNLPam, Uruguay 151,
6300, Santa Rosa, La Pampa, Argentina. Rodrigo L. Tomassini [rodrigo.tomassini@yahoo.com.ar],
INGEOSUR-CONICET, Departamento de Geología, Universidad Nacional del Sur. Avenida Alem 1253,
Bahía Blanca, 8000, Argentina.

This is an open-access article distributed under the terms of the Creative Commons Attribution License (for details please see creativecommons.org), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

 [Full text \(747.0 kB\)](#) |

 [Supplementary file \(192.4 kB\)](#)