Dental and tarsal morphology of the European Paleocene/Eocene 'condylarth' mammal Microhyus

Rodolphe Tabuce, Miguel Telles Antunes, Richard Smith, and Thierry Smith
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New dental and postcranial remains of the alleged louisinine hyopsodontid 'condylarth' Microhyus from the European Paleocene/Eocene transition are described, and prompt a reevaluation of the genus. New specimens belonging to Microhyus musculus from Dormaal (MP7, Belgium) provide the first evidence of the lower dentition of the type species. We describe M. musculus? from Pourcy (MP7, France) and cf. Microhyus sp. from Berru (MP6a, France). A rich original assemblage of M. reisi from Silveirinha (MP7, Portugal) allows a detailed description of the morphological dental variation within that species. Well-preserved astragali and calcanei from Silveirinha can be confidently attributed to Microhyus reisi. Functional analysis of these elements suggests that Microhyus was a terrestrial mammal capable of rapid running or jumping. The pedal morphology of Microhyus is very similar to that of Paschatherium. These louisinines share some derived characters with the hyopsodontids Apheliscus and Haplomylus (e.g., the occurrence of a cotylar fossa on the astragalus) but they differ from Hyopsodus. Therefore, in view of the pedal morphology alone, the hyopsodontids may be polyphyletic. Given the dental similarities between Microhyus and the early representatives of the order Macroscelidea, we compared the tarsal morphology of louisinines with that of modern macroscelidids (Paleogene tarsal remains are currently unknown for this group). Macroscelidids and louisinines present some similarities in their astragalar morphology; however, the macroscelid astragalus appears to be too specialized to be compared with that of Microhyus and Paschatherium.

Key words: Eutheria, 'Condylarthra', Louisininae, Microhyus, Paleocene, Eocene.

Rodolphe Tabuce rtabuce@isem.univ-montp2.fr, Laboratoire de Paléontologie, Institut des Sciences de l'Evolution, cc064, Université Montpellier II, place Eugène Bataillon, 34095 Montpellier cedex 05, France (corresponding author); Miguel Telles Antunes mta@mail.fct.unl.pt, Centro de Estudos Geológicos, Faculdade de Ciências e Tecnologia, Quinta da Torre, 2829-516 Caparica, Portugal; Richard Smith richardsmithpal@hotmail.com, Laekenveld 6, B-1780 Wemmel, Belgium; Thierry Smith Thierry.Smith@naturalsciences.be, Département de Paléontologie, Institut royal des Sciences naturelles de Belgique, 29 rue Vautier, B-1000 Bruxelles, Belgium.