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ABSTRACT BOOK

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A partial skeleton of *Deinotherium* (Proboscidea, Mammalia) from the late Middle Miocene Gratkorn locality (Austria) and the discussion on taxonomy of late Middle and early Late Miocene Deinotheriidae

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The late Middle Miocene (Sarmatian sensu stricto; 12.2 - 12.0 Ma) Gratkorn locality (Austria) yielded a disarticulated, though still roughly associated partial *Deinotherium* skeleton (Fig. 1, E). It can be determined as a medium sized taxon of Deinotheriidae and clearly assigned to the genus *Deinotherium* due to dimensions and morphology of the dental and postcranial material. As typical for *Deinotherium* and different to *Prodeinotherium* the specimen's radius shows a weaker torsion, its corpus radii is generally more flattened, and its proximal diaphysis is mediodorsal-lateropalmar flattened; the distal articular surface of the os carpi ulnare with two concave facets (axes dorsopalmarly)

is divided by a central convexity, the os tarsi centrale carries only three distal articulation facets but none for the articulation with the Mt I (Fig. 1, A-D). The specimen from Gratkorn thus confirms the osteological differences in the postcrania between *Prodeinotherium* and *Deinotherium*. The Gratkorn specimen is one of the few skeletons of a medium sized taxon of Deinotheriidae and one of the rare well dated late Middle Miocene occurrences in Central Europe with associated dental and postcranial material. As the diagnostically important p/3 is missing in the specimen its determination on species level is uncertain and it can only be assigned to *Deinotherium levius* vel *giganteum*.



Fig. 1. *Deinotherium levius* vel *giganteum* from Gratkorn, Austria. A, os carpi ulnare sin. in distal view; B, os tarsi centrale dex. in distal view; C, sketch of B with identified articulation facets; D, radius sin. in dorsal view; E, excavation of partial skeleton by the Universalmuseum Joanneum in 2006. Abbreviations: os t., os tarsale. Scale bar equals 5 cm.

With the taxonomic determination of the Gratkorn specimen and recent works discussing validities of different deinother species (Böhme et al., 2012; Pickford and Pourabrishami, 2013), a taxonomic concept with two medium sized deinother species (*Deinotherium giganteum* and *Deinotherium levius*) is reestablished. In contrast to this, other taxonomic concepts question the validity of the species *D. levius* (e.g., Gasparik, 2001; Markov, 2008). A discussion on the different concepts and the possible application for biostratigraphic and biochronologic considerations based on morphological and dimensional variabilities and differences among deinother species will be presented. Comparable to the results of Böhme et al. (2012) and Pickford and Pourabrishami (2013) we propose that *Deinotherium levius* is present during the Middle Miocene, but seems to show a wider biochronologic (MN6 to MN9) and chronostratigraphic range (late Early Badenian to Pannonian B) than assumed so far. *Deinotherium giganteum* in contrast most likely does not appear before the Late Miocene, while the genus *Prodeinotherium* is restricted to the Early and Middle Miocene in Central Europe.

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