




REVIEW ARTICLE

An unexpected late paroxyclaenid (Mammalia, Cimolesta) out of Europe: dental evidence from the Oligocene of the Bugti Hills, Pakistan

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Abstract: Eight isolated mammal molars were discovered in lower Oligocene deposits of the Bugti Hills, Pakistan (Paali Nala, DB-C2; lower Chitarwata Formation). Because of their unusual morphology, these molars have long remained enigmatic. Extensive comparisons with fossil eutherian and metatherian mammals and the recent description of new paroxyclaenids (Mammalia, Cimolesta) from the lower Eocene (Ypresian) of Europe have highlighted the plausible affinities of these teeth from the Oligocene of Pakistan and suggest a referral to Paroxyclaenidae. The dental morphology of this taxon is singular among Paroxyclaenidae, and as such it allows us to propose here a new species and a new genus: *Welcommoides gurki*. The occurrence of a paroxyclaenid in the Oligocene of Pakistan remains somewhat unexpected inasmuch as these mammals have so far been known only from the Eocene of Europe. At *c.* 4.2 kg, *W. gurki* is the largest paroxyclaenid

ever discovered, and is assigned to the subfamily Merialinae, which became extinct in Europe around the Ypresian–Lutetian transition, long before the occurrence of this new taxon from Pakistan. *Welcommoides* has a suite of unusual characters compared with merialines, suggesting that this South Asian lineage had diverged for some time from its European Ypresian counterparts. Such a hypothesis is supported by the faunal similarities between European and Indian subcontinent faunas during the Ypresian. Moreover, our discovery strengthens support for the hypothesis that low latitudes of South Asia were a tropical refugium, at least during the first steps of the global climatic deterioration started at the Eocene–Oligocene transition.

Key words: Europe, Indian subcontinent, Mammalia, Palaeogene, palaeobiogeography, palaeoecology.

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