

New early Eocene tapiromorph perissodactyls from the Ghazij Formation of Pakistan, with implications for mammalian biochronology in Asia

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Early Eocene mammals from Indo–Pakistan have only recently come under study. Here we describe the first tapiromorph perissodactyls from the subcontinent. *Gandheralophus minor* gen. et sp. nov. and *G. robustus* sp. nov. are two species of Isectolophidae differing in size and in reduction of the anterior dentition. *Gandheralophus* is probably derived from a primitive isectolophid such as *Orientolophus hengdongensis* from the earliest Eocene of China, and may be part of a South Asian lineage that also contains *Karagalax* from the middle Eocene of Pakistan. Two specimens are referred to a new, unnamed species of Lophialetidae. Finally, a highly diagnostic M3 and a molar fragment are described as the new eomorpid chalicotheriid *Litolophus ghazijensis* sp. nov. The perissodactyls described here, in contrast to most other mammalian groups published from the early Eocene of Indo–Pakistan, are most closely related to forms known from East and Central Asia, where Eocene tapiromorphs are diverse and biochronologically important. Our results therefore allow the first biochronological correlation between early Eocene mammal faunas in Indo–Pakistan and the rest of Asia. We suggest that the upper Ghazij Formation of Pakistan is best correlated with the middle or late part of the Bumbanian Asian Land Mammal Age, while the Kuldana and Subathu Formations of Pakistan and India are best correlated with the Arshantan Asian Land Mammal Age.

Key words: Perissodactyla, Isectolophidae, Lophialetidae, Eomorpidae, biochronology, early Eocene, Ghazij Formation, Pakistan.

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