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First tillodont from India: Additional evidence for an early Eocene faunal connection between Europe and India?

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Vastan Lignite Mine in southeastern Gujarat, India, produces the oldest known Cenozoic land–mammals and the
only early Eocene continental vertebrate fauna known from India (e.g., Bajpai et al. 2005; Rana et al. 2005, 2008; Rose et al. 2006, 2008, and in press; Smith et al. 2007; Rage et al. 2008). The fauna comes from the Cambay Shale Formation and has been dated as middle Ypresian (~52 Ma, early Cuisian) based on a common nummulitid foraminiferan from about 15 m above the vertebrate–producing layer (Sahni et al. 2006; Rana et al. 2008). However, a recent study of dinoflagellate cysts from the section suggests that the deposits may be as old as 54–55 Ma (Garg et al. 2008). Although some elements of the fauna, such as anthracobunids and lagomorphs, have Asian affinities, a surprising number of taxa among the snakes, bats, insectivores, primates, rodents, and artiodactyls appear to be most closely related to early Eocene European or North American taxa. This may simply reflect the poor state of knowledge of contemporary south Asian vertebrate faunas; alternatively, it might be evidence of previously unsuspected early Eocene faunal exchange between Europe and southwest Asia. We report here two teeth of a tillodont from Vastan Mine, which constitute the first record of the mammalian order Tillodontia known from India. Despite the much greater generic diversity of tillodonts in Asia than elsewhere, the Vastan tillodont shows clear affinities with Euramerican esthonychines.

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