Actual knowledge of Oligocene origin of sloths

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Tardigrades constitute one of three clades of Xenarthra. Whereas modern tree sloths are common in the Amazonian Basin, their giant ground sloth "kin" were abundant throughout the Americas. During the Miocene, sloths were conspicuous faunal elements in Patagonia, generally considered as the cradle of most endemic South American mammalian clades. Although middle Miocene sloths are abundant, pre-Miocene forms are rare and recorded from isolated localities, like Salla (Bolivian Altiplano) and La Flecha (Patagonia). Recent discoveries in Tinguiririan SALMA levels of Chile and Deseadan SALMA of Quebrada Fiera (Mendoza, Argentina) and Lacayani (Bolivia) provide information on the early diversification of sloths. Pseudoglyptodon is the first Tardigrada from the early and late Miocene of Chile and Bolivia, but more material is necessary to clarify its phylogenetic affinities. This genus exhibits the common sloth dental formula (1/1C-4/3M) but lower trilobed molariform teeth and dentine structure seem to be more closely related to glyptodontoids. Sloths are recorded from the Late Oligocene of Patagonia, with the Mylodontoidea Octodontotherium and Orophodon and the Megalonychidae Deseadognathus. New remains from Quebrada Fiera also confirm the presence of these two clades, and the genera clearly exhibit a Patagonian influence. Tardigrada from the classic Salla locality (Bolivian Deseadan) are small, presenting a distinct evolutionary pattern with a peculiar organization of lophs and lophids. The actual knowledge of sloths suggests the broad generalizations that: 1) more abundant early Oligocene remains are required to comprehend phylogenetic relationships between Tardigrada and armored Xenarthra (i.e., Cingulata), 2) Oligocene megalonychid and mylodontoid sloths are relatively abundant in southern and central South America (Chile, Bolivia, and Argentina), 3) the sloth assemblage from Salla is distinct from the common mylodontoid pattern present in Chile and Argentina. Clearly, our understanding of sloth origins is severely limited, and new discoveries in tropical areas of the continent are crucial.

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