



## Biochronological relationships of the mammal fauna from the Paleogene of Las Violetas, Chubut Province, Argentina

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The fauna from the Las Violetas locality was recovered from a sequence of 20m thick that outcrops discordantly over the Las Violetas Formation (basal unit of the Río Chico Group). These outcrops are composed of pinky to greyish conglomeradic facies, mainly quartzose in composition, and coarse to fine sandy facies, classified as lithic feldarenites, that represent a distal fluvial system. These features and the stratigraphic position are not conclusive in order to assign this outcrop to a particular unit. However it could be related to either the Peñas Coloradas (latest Paleocene) or the Las Flores Formations (late Paleocene-early Eocene), both included in the Río Chico Group. Considering that these units were related to the "Carodnia Zone" and the Itaboraian Mammal Age respectively, the fauna from Las Violetas could be *prima facie* similar to one of them. In this sense: 1) marsupials are represented by the Polydolopimorphia Polydolopiformes (Polydolops rothi Simpson) and Bonapartheriiformes (Gashterniidae gen. et sp. nov.), the "Didelphimorphia" Peradectoidea (Peradectidae gen. et sp. indet.) and Didelphoidea (Sternbergidae cf. Itaboraidelphys), and the Sparassodonta Proborhyaenidae (gen. et sp. indet.), and Hathlyacinidae (cf. Patene). Except for the Sparassodonta, they are not recorded in rocks younger than late Early Eocene (Paso del Sapo fauna); 2) most of the placentals are referred to groups which appear in the fossil record since the Riochican, that is the case of the notoungulates Isotemnidae (e.g., Isotemnus), Notostylopidae (e.g., Hopmalostylops), Henricosborniidae (e.g., Peripantostylops), and Archaeopithecidae (e.g., Acropithecus), and some xenarthran Dasypodidae (e.g., Prostepotherium); in contrast 3) Oldfieldthomasiidae notoungulates and other Dasypodidae (cf. Riostegotherium) are present since the Itaboraian. A cluster analysis comparing South American Paleogene faunas with Las Violetas mammals, indicates a probable post-Itaboraian age for the last ones. A similar conclusion could be inferred from the absence of Carodnia and the evolutionary grade of the taxa recovered.

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