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Discovery of Murinae Fossils in Calcified Cave Breccia from Western Belt Caves in Peninsular Malaysia and Implications to Quaternary Palaeoenvironment

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Isolated fossil teeth of mammals from both large and small-sized taxa were found mixed together in calcified breccia remnants on the walls and roof in caves scattered in West Peninsular Malaysia. These caves are located at the foot of Palaeozoic Era limestone formation in Langkawi, Perak and Selangor and the age of some of the fossil-rich cave breccias was estimated to be Middle to Late Pleistocene (Yasamin, 2013). The identified murinae fossils were used to determine the palaeoenvironmental conditions. This is the first systematic study of murinae fossils in Peninsular Malaysia. More than 70 specimens of teeth and fragments of jaws have been identified as murinae among 350 small mammal remains recovered. Based on the dimension of the molars, the assemblages are classified into three different groups by size; small, medium and large. The identification and comparison study suggest that the rats belong to extant species that are still living in Peninsular Malaysia and adjacent countries. They are identified as *Maxomys spp*., *Leopoldamys sabanus*, *Chiropodamys gliroides*, *Niviventer fulvescens* and *Rattus spp*. Based on the specific ecological requirements relating to each of the species found, most likely the environment surrounding the caves area in Western Belt of Peninsular Malaysia during Middle to Late Pleistocene time is of lowland forest type with bamboo trees, and near to water sources such as rivers or swamp.

Figure 1: Adapted from Musser (1981), nomenclature of dental structures using left upper and left lower molars of Leopoldamys sabanus. Upper molars: cusps are numbered. Lower molars: a-lab, anterolabial cusp; a-ling, anterolingual cusp; pd, protoconid; hd, hypoconid; md, metaconid; ed, entoconid; pc, posterior cingulum; plc, posterior labial cusplet.

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