

# A New Species of Extinct False Vampire Bat (Megadermatidae: *Macroderma*) from the Kimberley Region of Western Australia

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**ABSTRACT.** A new species of False Vampire Bat (Megadermatidae), *Macroderma handae* sp. nov., is described from dental, dentary and maxillary fragments recovered from limestone deposits at Dingo Gap, Oscar Range, in the Kimberley region of Western Australia. This material is likely to be of Pliocene age, or early Pleistocene, based on biocorrelation within the same sample. The absence of the P<sup>2</sup> indicates that it is more derived than Miocene taxa including *M. malugara* and *M. godthelpi*, but its phylogenetic position relative to *M. koppa* could not be determined. It appears to be slightly smaller than *M. gigas* and *M. koppa* based on the size of M<sup>1</sup> and M<sub>2</sub>. It can be distinguished from *M. gigas* by the lesser degree of fenestration in the maxilla; and from all other species of *Macroderma* by the shape of the protofossa of the M<sup>1</sup>, plus the M<sub>2</sub> protoconid relatively high and of proportionally greater area within the trigonid. Other material collected, but not identified completely or described, includes several lower canines from a species of emballonurid, and a dentary with M<sub>1-3</sub> representing a vespertilionid bat. Given the wear striations observed on the M<sub>3</sub> of the newly-described *Macroderma* species, we suggest that it was a predator of small vertebrates, including possibly the chiropteran co-inhabitants of the cave. This new species of *Macroderma* is the sixth species recognized in the genus so far, and the second from the Pliocene.

## Introduction

The family Megadermatidae (False Vampire Bats) has a long history that began in the mid-Eocene with its divergence from the Craseonycteridae c. 44–43 Ma, based on molecular dating methods (95% credibility interval 47–39 Ma; Teeling *et al.*, 2005; Foley *et al.*, 2015). Until recently, the oldest known megadermatid fossil was considered to be *Necromantis adichaster* Weithofer, 1887, represented in the Quercy Phosphorites Formation, France, but this genus is now accepted to be part of a distinct family (Necromantidae; Sigé, 2011; Ravel *et al.*, 2016;

Hand & Sigé, 2018). Early megadermatid lineages are represented by modern extant taxa in the genera *Lavia* and *Cardioderma*, based on their inferred phylogenetic position (Hand, 1985; but see Kaňuch *et al.*, 2015). The oldest megadermatid fossils, however, are: *Saharaderma pseudovampyrus* Gunnell *et al.*, 2008 from early Oligocene deposits in Egypt (33.9–28.4 Ma), which shows similarities to *Cardioderma* and *Lavia*, and with which it may form a distinct African clade (Gunnell *et al.*, 2008); and *Megaderma lopezae* Sevilla, 1990 from early Oligocene deposits in Spain. The remaining eight described Afro-European species of extinct *Megaderma* are represented in deposits that range

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