

***Macroderma koppa*, a new Tertiary species of false vampire bat (Microchiroptera: Megadermatidae) from Wellington Caves, New South Wales**

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ABSTRACT. A new late Tertiary false vampire bat, *Macroderma koppa*, is described from the Big Sink doline of Wellington Caves, eastern central New South Wales. The new species appears to be the sister-group of the living Australian Ghost Bat, *Macroderma gigas*. Morphological features that distinguish the new species from *M. gigas* appear to be plesiomorphies shared with most other megadermatids.

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Until recently, all Australian fossil megadermatids had been identified as conspecific with (or very close to) the only living Australian megadermatid, the Ghost Bat *Macroderma gigas*. These fossils come from late Pleistocene and Holocene deposits in south-western Western Australia, the Flinders Range in southern central South Australia, north-eastern Queensland and north-eastern and eastern central New South Wales (see Molnar *et al.*, 1984; Fig. 1). Recently, the remains of Miocene species of the Australian endemic genus *Macroderma* have been recovered from limestone sediments on Riversleigh Station, north-western Queensland (Hand, 1984, 1985, 1987). In this paper a new late Tertiary species of *Macroderma* from New South Wales is described.

Fossil specimens described here were collected from breccia in the Big Sink, one of a complex of cave deposits occurring in Wellington Caves, New South Wales. These caves are formed in limestones of the Devonian Garra Formation which outcrops in low hills 1 km east of the Bell River approximately 7 km south of the town of Wellington (32° 35' S, 148° 59' E). They comprise at least five natural caves which have been expanded and greatly disturbed by fossil collection and phosphate mining over a period of 150 years. The history of fossil collection and mining from this locality has been described in detail by Dawson (1985). Cave nomenclature used here follows Dawson (1985, fig. 2).

Recent geological studies of the Wellington cave fills (Frank, 1971; Osborne, 1983) have indicated their considerable stratigraphic complexity. Osborne (1983) has hypothesised a depositional sequence for various stratigraphic units in the Wellington Caves system but the absolute ages of the units have not been determined. Osborne (1983), following Frank (1971), Francis (1973) and others, suggests that the oldest deposits within the caves could have been laid down in the Miocene. He cites faunal evidence suggesting that deposition of bone breccia occurred throughout the Pleistocene at least (Osborne, 1983).

Stratigraphically controlled excavations in the caves were made by the School of Zoology of the University of New South Wales in 1982-1987. Some preliminary results of this collection have been reported by Dawson (1985). Material described here was collected in October 1982 by M. Archer and students of the School of Zoology, University of New South Wales, from the Big Sink doline as part of a pilot study.

The species recovered from the Big Sink doline include: the macropodine *Protemnodon* sp. cf. *P. devisi* (the most abundant species); a plesiomorphic macropodine allied to *Wallabia* spp.; *Macroderma koppa* n.sp.; *Thylacinus* sp.; *Thylacoleo crassidentatus*; *Petauroides stirtoni* (a pseudocheirid otherwise known from the Hamilton local fauna of Victoria); several small dasyurids which are either