

VOLUME 51  
PART 1

MEMOIRS  
OF THE  
QUEENSLAND MUSEUM

BRISBANE  
31 MAY 2005

© Queensland Museum

PO Box 3300, South Brisbane 4101, Australia  
Phone 06 7 3840 7555  
Fax 06 7 3846 1226  
Email [qmlib@qm.qld.gov.au](mailto:qmlib@qm.qld.gov.au)  
Website [www.qmuseum.qld.gov.au](http://www.qmuseum.qld.gov.au)

National Library of Australia card number  
ISSN 0079-8835

NOTE

Papers published in this volume and in all previous volumes of the *Memoirs of the Queensland Museum* may be reproduced for scientific research, individual study or other educational purposes. Properly acknowledged quotations may be made but queries regarding the republication of any papers should be addressed to the Director. Copies of the journal can be purchased from the Queensland Museum Shop.

A Guide to Authors is displayed at the Queensland Museum web site [www.qmuseum.qld.gov.au/resources/resourcewelcome.html](http://www.qmuseum.qld.gov.au/resources/resourcewelcome.html)

**A Queensland Government Project**  
Typeset at the Queensland Museum

A SMALL ADULT *PALORCHESTES* (MARSUPIALIA, PALORCHESTIDAE) FROM THE PLEISTOCENE OF THE DARLING DOWNS, SOUTHEAST QUEENSLAND. *Memoirs of the Queensland Museum* 51(1): 202. *Palorchestes* is a rare component of the Australian fossil record with late Tertiary origins (Black, 1997). Several species have been described, including; *P. painei* Woodburne 1967 (Late Miocene); *P. anulus* Black 1997 (Late Miocene); *P. selestiae* Mackness 1995 (early Pliocene); *P. parvus* De Vis 1895 (Plio-Pleistocene); and *P. azael* Owen 1874 (Pleistocene). Recent collecting from a late Pleistocene deposit on the eastern Darling Downs, SEQ, recovered a small dentary not referable to those species of *Palorchestes* where the dentary is known.

Family PALORCHESTIDAE Tate, 1948

*Palorchestes* Owen 1873

*Palorchestes* sp. (Fig. 1)

**Material.** QMF49455, edentulous right dentary. QML796, Kings Creek, near Clifton, eastern Darling Downs; late Pleistocene (see Price, 2004).

**Description.** Dentary broken anteriorly at I<sub>1</sub> alveolus, posteriorly below M<sub>3</sub> anterior alveolus; edentulous (excepting for in situ, broken, heavily worn protolophid of M<sub>2</sub>); gracile, tapering anteriorly; anterior portion flared buccally; symphysis elongate, ankylosed; mental foramen anteroventral to P<sub>3</sub>; diastemal ridge well defined, lingually offset, concave lingually. Alveoli measurements in mm: P<sub>3</sub>: 16.3L × 12.7W, M<sub>1</sub>: 18.6L × 10.9W; M<sub>2</sub>: 20.5L × 13.6W.

**Remarks.** The dentary is referred to *Palorchestes* based on the combination of its large size; presence of lophids; long and narrow symphyseal region; gently tapered anterior; and buccally flared diastema. The ankylosed symphysis, heavily worn protolophid of M<sub>2</sub> and presence of P<sub>3</sub> alveoli indicates that the individual was an adult. Therefore, morphological differences between QMF49455 and other *Palorchestes* species are unlikely to be ontogenetic. Measurements of alveoli suggest that the teeth were similar in size to *P. parvus*. However, QMF49455 differs from *P. parvus*, *P. azael* and *P. painei* by being more gracile with an anterior margin more buccally flared; diastemal ridge better defined and lingually concave; and diastema proportionately shorter. Comparison to *P. selestiae* and *P. anulus* is not possible as those species are known only from the M<sup>1</sup>. Black (1997) shows *P. selestiae* to be markedly larger and *P. anulus* to be smaller than *P. parvus*. Hence, QMF49455 may represent an undescribed,

small species of *Palorchestes* or sexual dimorphism within small-sized *Palorchestes* spp.

*Palorchestes* spp. generally occur allopatrically showing a trend of increased body size from the mid Tertiary to the late Pleistocene (Murray, 1991). QMF49455 is unusual in being a small adult *Palorchestes* from the late Pleistocene. A second species of *Palorchestes*, also recovered from QML796 and represented by a RI<sub>1</sub>, is referable to *P. azael* (QMF33024). Sympatry in *Palorchestes* spp. has been noted by Davis & Archer (1997), however, those occurrences may be due to temporally mixed faunas. Here we confirm sympatry of two *Palorchestes* species during the late Pleistocene.

#### Literature Cited.

- DAVIS, A.C. & ARCHER, M. 1997. *Palorchestes azael* (Mammalia, Palorchestidae) from the late Pleistocene Terrace Site Local Fauna, Riversleigh, northwestern Queensland. *Memoirs of the Queensland Museum* 41: 315-320.
- DE VIS, C.W. 1895. A review of the fossil jaws of the Macropodidae in the Queensland Museum. *Proceedings of the Linnean Society of New South Wales* 10: 74-134.
- BLACK, K. 1997. A new species of Palorchestidae (Marsupialia) from the late Middle to early Late Middle Miocene Encore Local Fauna, Riversleigh, northwestern Queensland. *Memoirs of the Queensland Museum* 41: 181-185.
- MACKNESS, B. 1995. *Palorchestes selestiae*, a new species of palorchestid marsupial from the early Pliocene Bluff Downs Local Fauna, northeastern Queensland. *Memoirs of the Queensland Museum* 38: 603-609.
- MURRAY, P.F. 1991. The Pleistocene megafauna of Australia. Pp 1071-1164 In Vickers-Rich, P., Monaghan, J.M., Baird, R.F. & Rich T.H. (eds) (Vertebrate Palaeontology of Australasia. Pioneer Design Studio; Lilydale, Victoria).
- OWEN, R. 1874. On the fossil mammals of Australia- Part IX. *Philosophical Transactions* 164: 783-803.
- PRICE, G. J. 2004. Fossil bandicoots (Marsupialia: Peramelidae) and environmental change during the Pleistocene of the Darling Downs, southeastern Queensland, Australia. *Journal of Systematic Palaeontology* 2(4): 347-356.
- TATE, G.H.H. Results of the Archbold Expeditions. No. 59. Studies on the anatomy and phylogeny of the Macropodidae (Marsupialia). *Bulletin of the American Museum of Natural History* 91: 235-351.
- WOODBURNE, M.O. 1967. The Alcoota Fauna, central Australia: an integrated palaeontological and geological study. Bureau of Mineral Resources, Geology and Geophysics, Bulletin 87.
- Gilbert J. Price, Queensland University of Technology, School of Natural Resource Sciences, GPO Box 2434, Brisbane, Queensland; Scott A. Hocknull, Queensland Museum, 122 Gerler Road, Hendra, Queensland; 1 January 2005.*



FIG. 1. QMF49455, *Palorchestes* sp. right dentary. A, occlusal view. B, lateral view.