

New Material of *Barawertornis tedfordi*, a Dromornithid Bird from the Oligo-Miocene of Australia, and its Phylogenetic Implications

JACQUELINE M.T. NGUYEN,*¹ WALTER E. BOLES^{1,2} AND SUZANNE J. HAND¹

¹ School of Biological, Earth and Environmental Sciences,
University of New South Wales NSW 2052, Australia
jacqueline.nguyen@student.unsw.edu.au · s.hand@unsw.edu.au

² Research and Collections Branch, Australian Museum,
6 College Street, Sydney NSW 2010, Australia
walter.boles@austmus.gov.au

ABSTRACT. New fossil material of *Barawertornis tedfordi* (Aves: Dromornithidae) is described from Oligo-Miocene deposits in the Riversleigh World Heritage Area, northwestern Queensland, Australia. Phylogenetic analysis incorporating data from this new material casts some doubt on the generally accepted sister group relationship between *B. tedfordi* and all other dromornithids. However, the phylogenetic analysis is congruent with current hypotheses regarding intergeneric relationships among the other dromornithid taxa. A formal revision of dromornithid nomenclature that reflects these relationships is presented here. *Barawertornis tedfordi* may have closely resembled the unrelated Southern Cassowary *Casuarius casuarius* (Aves: Casuariidae), in that it was a rainforest-dwelling, flightless bird of similar size. *Barawertornis tedfordi* also appears to have had similar cursorial abilities to *C. casuarius*, based on its hind limb proportions.

NGUYEN, JACQUELINE M. T., WALTER E. BOLES & SUZANNE J. HAND, 2010. New material of *Barawertornis tedfordi*, a dromornithid bird from the Oligo-Miocene of Australia, and its phylogenetic implications. In *Proceedings of the VII International Meeting of the Society of Avian Paleontology and Evolution*, ed. W.E. Boles and T.H. Worthy. *Records of the Australian Museum* 62(1): 45–60.

The Dromornithidae is an extinct family of large, flightless, terrestrial birds unique to Australia. It has one of the longest fossil records of any Australian group. These birds are known from the Late Oligocene to the Late Pleistocene, although an Early Eocene foot impression may be referable to Dromornithidae (Rich, 1979; Field & Boles, 1998; Miller *et al.*, 1999; Vickers-Rich & Molnar, 1996; Boles, 2006). Dromornithids were traditionally thought to be ratites because they are superficially similar: large bodied, flightless birds with long necks, reduced wings, fused scapulocoracoids and acarinate sterna (Owen, 1872, 1874; Stirling & Zietz,

1896, 1900, 1905; Stirling, 1913; Rich, 1979, 1980; Jennings, 1990). This relationship was disputed by Olson (1985), based on observations of the mandible, quadrate and pelvis, and subsequently Vickers-Rich (1991) upon examination of newly prepared skulls from Bullock Creek, Northern Territory. Most recently, Murray & Megirian's (1998) phylogenetic analysis and re-evaluation of the skeleton concluded that dromornithids are part of the waterfowl radiation (Anseriformes).

Dromornithids are among the best represented fossil birds in Australia (Rich & van Tets, 1982; Murray & Vickers-Rich,

* author for correspondence