

The availability of Megalapterygidae, a family-group name for *Megalapteryx*, among New Zealand moa

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ABSTRACT: Phylogenomic and morphological data provide strong evidence for the position of *Megalapteryx didinus* as the sister group to all other moa (Aves: Dinornithiformes). When the name 'Megalapterygidae' was coined by Bunce *et al.* in 2009, it did not meet the requirements of the International Code of Zoological Nomenclature (ICZN, 1999) and is therefore unavailable. To remedy this oversight, we describe this taxon and make a family-group name available.

KEYWORDS: nomenclatural availability, family-group nomina, Dinornithiformes, *Megalapteryx*, International Code of Zoological Nomenclature.

ZOOBANK LSID for publication: 8B9FA69D-D930-41A8-A346-A539349673A7

Megalapteryx didinus (Owen, 1883) is one of nine currently recognized species of moa, Aves: Dinornithiformes (Gill *et al.*, 2010). It was endemic to South Island, New Zealand, occupying montane to subalpine habitats during the Holocene (Worthy & Scofield, 2012). Following the advent of ancient DNA analyses and inclusion of this species in moa phylogenetic analyses (Baker *et al.*, 2005; Bunce *et al.*, 2009), *M. didinus* was recognised as forming a clade sister to the remaining moa that grouped in the two families Dinornithidae (species of *Dinornis* Owen) and Emeidae (included genera *Pachyornis* Lydekker, *Anomalopteryx* Reichenbach, *Emeus* Reichenbach, *Euryapteryx* Haast); see Gill *et al.* (2010) for included species and synonymies. Therefore, in Bunce *et al.* (2009), the family-group name 'Megalapterygidae' was proposed for the group containing *Megalapteryx*.

It has been brought to our attention that when the name 'Megalapterygidae' was created in Bunce *et al.* (2009) it failed to comply with the International Code of Zoological Nomenclature, hereafter the Code (ICZN, 1999) because it lacked an explicit diagnosis, and, therefore, it is unavailable from that publication.

To be available, the Code requires that every new name published after 1930 must be accompanied by a diagnosis, i.e., a description or definition that states in words characters that are purported to differentiate the taxon (Article 13.1.1; ICZN, 1999), or be accompanied by a bibliographic reference to such a published statement (Article 13.1.2). Furthermore, family-group names published after 1999 must also be accompanied by an explicit indication that the name is intentionally new (e.g., 'fam. nov.' or equivalent, Article 16.1; ICZN, 1999), and be accompanied by a citation of the type genus (Article 16.2; ICZN, 1999).

Worthy and Scofield (2012) included an explicit diagnosis of Megalapterygidae, however, the nomen Megalapterygidae was attributed to Bunce *et al.* (2009) and thus conveyed no intent to indicate that it was new in this work, and cannot take availability from there. Thereafter, *Megalapteryx didinus* has always been included in Megalapterygidae, and none of these works have defined it, always attributing it to Bunce *et al.* (2009), e.g. Checklist Committee (OSNZ) (2022).

To rectify this oversight, we propose:

Megalapterygidae new family

Diagnosis: This family is diagnosed by species having a combination of morphological characters as comprehensively listed in Worthy and Scofield (2012: 119). We provide a selection here: moa with tarsus feathered to the toes (autapomorphy); bill short, delicate and pointed; maxillary antrum reduced to small chamber; no ossified turbinals in olfactory chamber; cranium rounded dorsally, width less than twice height, temporal fossae small; mandible with a processus retroarticularis; 27 presacral vertebrae; vertebrae 3 and 4 with a bifid neural spine; leg bones gracile with femur tibiotarsus tarsometatarsus ratio of 1:1.6:0.7; femur elongate, dorsally arched, with narrow sulcus patellaris; tarsometatarsus length c. 2.4 times maximum width; phalangeal formula of pes 2:3:4:5.

Type genus: *Megalapteryx* Haast, 1886.

Megalapteryx Haast, 1886: Trans. Zool. Soc. London 12 (5): 161—Type species (by monotypy) *Megalapteryx hectori* Haast = *Megalapteryx didinus* (Owen).

Contents: *Megalapteryx didinus* is the only valid species. See Gill *et al.* (2010) for a complete synonymy of included species.

ZooBank LSID for new family: 1E6C6927-E321-457C-A171-112DD0EFCD95

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