



## A new genus for *Pycnopygius cinereus*/*P. ixoides* (Aves: Meliphagidae)

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The honeyeaters (Meliphagidae) are an Australasian group of 196 species (Gill *et al.* 2023). This group shows great phenotypic, ecological and behavioural diversity and has been termed a “spectacular avian radiation” (Joseph *et al.* 2014), deservedly so because comparative studies have shown that the honeyeaters are more functionally diverse than other related and co-distributed non-nectarivorous meliphagoid clades (Marki *et al.* 2019). Phylogenetic analysis of DNA sequences and continued sampling of additional species has led to a much better understanding of the composition and phylogenetic relationships of this group (Driskell & Christidis 2004; Gardner *et al.* 2010; Nyári & Joseph 2011; Andersen *et al.* 2014, 2019; Joseph *et al.* 2014; Marki *et al.* 2017; McCullough *et al.* 2019). Multiple genera have been identified as para- or polyphyletic groups, including *Certhionyx*, *Anthochaera* and *Phylidonyris* (Driskell & Christidis 2004; Joseph *et al.* 2014), *Lichenostomus* (Gardner *et al.* 2010; Nyári & Joseph 2011; Joseph *et al.* 2014), *Xanthotis*, *Melidectes* and *Glycifohia* (Andersen *et al.* 2014), *Meliphaga* (Marki *et al.* 2017; McCullough *et al.* 2019), and *Lichmera* and *Pycnopygius* (Marki *et al.* 2017). As a result, multiple genera have been resurrected from synonymy, and other genera have been renamed or newly described (e.g. Nyári & Joseph 2011; Andersen *et al.* 2014, 2022; Joseph *et al.* 2014; McCullough *et al.* 2019).

*Pycnopygius cinereus* (Sclater, 1873) and *P. ixoides* (Salvadori, 1878) were originally described in the genus *Ptilotis* Swainson, 1837 (Sclater 1873; Salvadori 1878). In the first two decades of the 20<sup>th</sup> century, these species were grouped with several other honeyeaters in the genus *Ptilotis*, whereas *P. stictocephalus* Salvadori, 1876 was placed in the monotypic genus *Pycnopygius* Salvadori, 1880 (Dubois 1902, Ogilvie-Grant 1915). Subsequently, *Pycnopygius cinereus* and *P. ixoides* were included in *Pycnopygius* (Stresemann 1923; Mayr & Rand 1937; Mayr 1941). This is now universally followed (e.g. Salomonsen 1967; Wolters 1979; Sibley & Monroe 1990; Beehler & Pratt 2016; Clements *et al.* 2023; Gill *et al.* 2023).

Recent phylogenetic studies have revealed the genus *Pycnopygius* (sensu Salomonsen 1967; Gill *et al.* 2023) to be a polyphyletic assemblage (Marki *et al.* 2017; Hay *et al.* 2022). The phylogeny of Marki *et al.* (2017) placed *P. cinereus* and *P. ixoides* sister to a clade formed by *Prosthemadera novaeseelandiae* J.F. Gmelin, 1788 and two species of *Anthornis* G.R. Gray, 1840 [i.e., *A. melanura* (Sparrman, 1786) and *A. melanocephala* (G.R. Gray, 1843)], with poor support. However, these four species, together with *Certhionyx variegatus* Lesson, 1830, formed a well-supported clade (PP 0.99). The divergence of the two species of *Pycnopygius* from *Prosthemadera* and *Anthornis* was dated at 14 million years before present (Marki *et al.* 2017). *P. stictocephalus* was placed very distantly from *P. cinereus* and *P. ixoides* and was resolved as the sister taxon of *Grantiella picta* (Gould, 1838) with full support (PP 1.0).

The phylogeny of Hay *et al.* (2022) also showed *Pycnopygius* to be polyphyletic. In that study, *Pycnopygius cinereus* and *P. ixoides* were sister to *Certhionyx variegatus*, whereas *P. stictocephalus* again was sister to *G. picta*. Support for these relationships was not indicated.

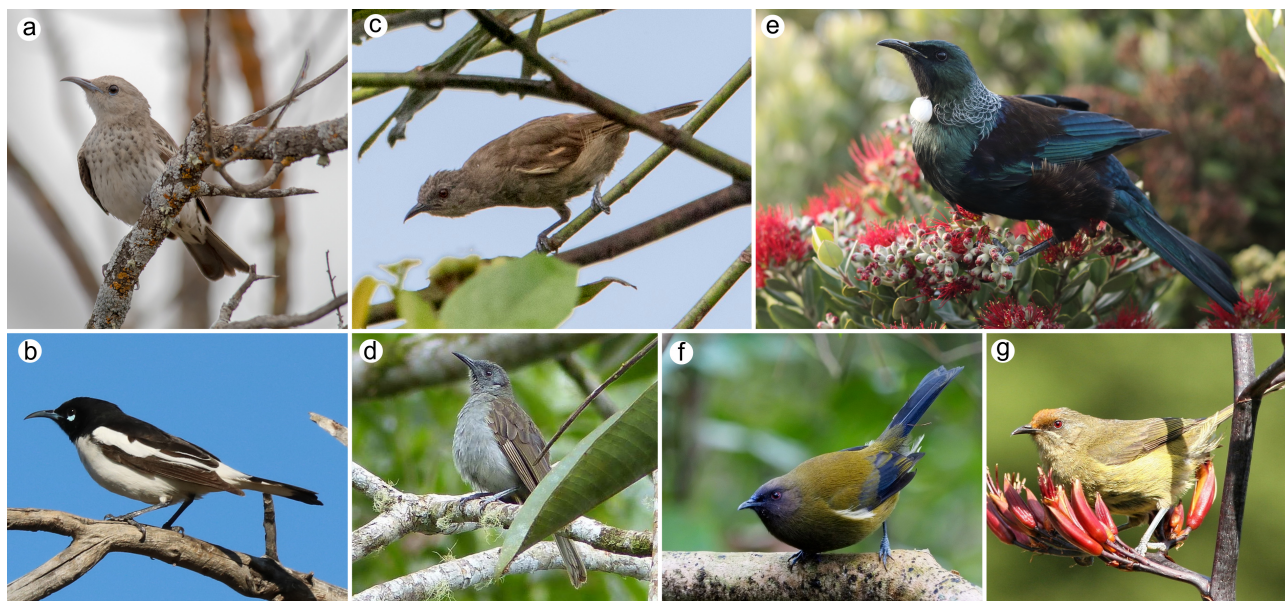
The polyphyly of *Pycnopygius* means that *P. cinereus* and *P. ixoides* should be placed in a different genus than *P. stictocephalus*. The type species of *Pycnopygius* is *P. stictocephalus*, so that species remains in *Pycnopygius*. *P. cinereus*

and *P. ixoides* are not readily included in an existing genus. Due to differences in topology found by Marki *et al.* (2017) and Hay *et al.* (2022), the sister taxon of *P. cinereus* and *P. ixoides* remains uncertain. This, in combination with the deep divergence, uncertain support in Hay *et al.* (2022), and considerable morphological differences between *P. cinereus*/*P. ixoides* and *C. variegatus* (Fig. 1), means that placement of *P. cinereus* and *P. ixoides* in the genus *Certhionyx* is contra-indicated. Similarly, placement of *P. cinereus* and *P. ixoides* with the morphologically and genetically distinctive *Prosthemadera* and *Anthornis* in a single genus is neither well-supported nor helpful (Fig. 1). We conclude that *P. cinereus* and *P. ixoides* are best placed in their own genus. Examination of the relevant literature did not identify any available genus-group name for *Pycnopygius cinereus* and *P. ixoides* (Dubois 1902; Sharpe 1909; Salomonsen 1967; Wolters 1979). Therefore, we propose a new genus-group name:

### ***Pinarostola* new genus**

**Type species:** *Ptilotis cinerea* Sclater, 1873 (currently *Pycnopygius cinereus*).

**Diagnosis:** Medium-sized honeyeaters (18–22 cm). Both species differ from *Prosthemadera novaeseelandiae* in (i) smaller size (*P. novaeseelandiae* is 27–32 cm); (ii) crown dark olive-grey or blackish-brown, with grey or blackish-brown streaking or scaling (crown appearing dark blue or green-violet in *P. novaeseelandiae*); (iii) ear-coverts, chin, throat and underparts grey or dusky brownish-grey (appearing dark blue or green-violet in *P. novaeseelandiae*); (iv) side of throat without a pair of white ball-like tufts (present in *P. novaeseelandiae*); (v) head, neck, wings, tail and underparts without iridescence (present in *P. novaeseelandiae*); (vi) neck feathers concolorous with upperparts (neck with white lacy collar extending to upper mantle and side of neck in *P. novaeseelandiae*); (vii) lower belly, thighs and vent grey or dusky brownish-grey (black-brown in *P. novaeseelandiae*); and (viii) lesser and median wing-coverts olive-brown or dark brown (white in *P. novaeseelandiae*).



**FIGURE 1.** External morphology of five species of honeyeater (Meliphagidae), illustrating the differences in structure and plumage between two species of “*Pycnopygius*” and their inferred sister taxa (*Certhionyx* in one study, and *Prosthemadera*+*Anthornis* in another study). (a) *Certhionyx variegatus* female (Andrew Allen/iNaturalist), (b) *Certhionyx variegatus* male (hednota/iNaturalist), (c) *Pycnopygius ixoides* (Bradley Hacker/ML106934401), (d) *Pycnopygius cinereus* (Benoit Segerer/iNaturalist), (e) *Prosthemadera novaeseelandiae* (Nik Baines/iNaturalist), (f) *Anthornis melanura* male (digitaltrails/iNaturalist), (g) *Anthornis melanura* female (Glen Fergus/Wikimedia).

Both species differ from *Anthornis melanura* and *A. melanocephala* in (i) sexual dimorphism in plumage lacking (present in *Anthornis*); (ii) tail straight along axis (fairly narrow at base and becoming broader towards tip in *A. melanura*); (iii) head and neck without iridescent purple sheen (present in male *Anthornis*); (iv) lores grey or blackish-brown with fine blackish speckling (black in male *Anthornis*); (v) upperparts olive-brown or dark brown (olive-green in male *Anthornis*); (vi) underparts grey or dusky brownish-grey (olive-green in males and olive-brown in females of *Anthornis*); (vii) primaries and secondaries dark olive-brown or brown (black with bluish sheen in male *A. melanura*, with greenish sheen

in male *A. melanocephala*); and (viii) tail dark olive-brown or brown (dark brown to black-brown in *A. melanura*, dark brown with bluish sheen in male *A. melanocephala*).

Both species differ from *Certhionyx variegatus* in (i) small fleshy wattle or flange that is noticeably serrated or “toothed” hanging down from the lower eyelid lacking (present in *C. variegatus*); (ii) sexual dimorphism in plumage lacking (present in *C. variegatus*); (iii) mandible nearly straight (distinctly decurved in *C. variegatus*); (iv) bill blackish (bluish in *C. variegatus*); and (v) plumage grey, olive-brown, brown or blackish-brown with slight streaking or scaling (plumage very distinctly pied black and white in male *C. variegatus*).

**Included taxa:** *Pinarostola cinerea* **comb. nov.** (Sclater, 1873) and *Pinarostola ixoides* **comb. nov.** (Salvadori, 1878).

**Etymology:** Derived from the Greek πιναρός (*pinaros*) meaning dirty, and the Greek στολή (*stolē*) meaning dress or clothing. The genus name (‘dirty clothing’) refers to the dull, uneven, grey to brown plumage of the two species. The gender is feminine.

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