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## The Lesser Melampitta is a Bird of Paradise

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The Lesser Melampitta *Melampitta lugubris* is a small (c. 17-18 cm), long-legged oscine passerine bird that lives in dense undergrowth on the floor of the mountain forests of New Guinea. The adults are entirely black and their short, erect forecrown feathers are iridescent and plushlike, as in some birds of paradise. The immatures have rusty-brown underparts.

The Lesser Melampitta was placed in the genus *Cora-copitta* of the Pittidae by Sclater (1888, p. 449) who noted that 'Until anatomical investigations have been made, it must remain doubtful whether this type should be referred to the Pittidae or to the Timaliidae.' Sclater noted the 'short erect frontal plumes' but did not link this species to the

birds of paradise. Sharpe (1901, p. 185) also included the Lesser Melampitta in the Pittidae, with a footnote: 'Count Salvadori tells me that, in his opinion, this genus [*Melampitta*] belongs rather to the Timaliidae than to the Pittidae.' The oscine relationships of *Melampitta lugubris* were established by Mayr (1931) from a study of the syrinx. He concluded that *Melampitta* is a timaliid, possibly related to *Crateroscelis* and *Amalocichla*. Mayr noted differences and similarities between *Melampitta lugubris* and the Greater Melampitta *M. gigantea*, and concluded that the two species are related. Mayr (1941, p. 108) placed *lugubris* and *gigantea* in the Timaliinae of the Muscicapidae, and noted that *gigantea*, 'In spite of its lengthened tail . . . is clearly congeneric with *lugubris*.' Rand & Gilliard (1968,

p. 335) placed both species in the Timaliidae. Deignan (1964, p. 239) assigned *Melampitta* to the Orthonychinae of the Muscicapidae, and Diamond (1972) followed Deignan. Peckover & Filewood (1976, p. 150) listed the two melampittas in the Cinclosomatidae, with *Orthonyx*, *Cinclosoma*, *Androphobus*, *Ptilorrhoa*, and *Ifrita*.

With the technique of DNA-DNA hybridisation, we have compared the radioiodine-labelled single-copy DNA sequences of *Melampitta lugubris* with the total DNAs of species representing all of the groups of oscine passerines known from New Guinea and Australia. Our methods have been described in several publications (e.g. Sibley & Ahlquist 1983, 1985).

Figure 1 indicates the position of the *Melampitta* branch in the phylogeny of the Australo-Papuan passerines. Reference to Sibley & Ahlquist (1985, Fig. 4) may also be helpful.

Please note the following categorical name changes from Sibley & Ahlquist (1985): suborder Oligomyodi becomes Tyranni; suborder Passeres becomes Passeri; parvorder Corvi becomes Corvida; superfamily Menuroidea becomes Ptilonorhynchoidea; family Acanthizidae becomes Pardalotidae; family Pomatostomidae becomes Pomatostomatidae; tribe Mohouini follows the Neosittini; tribe Oreocini deleted, *Oreoica* included in Falcunculini; subfamily Monarchinae becomes Dicurinae; tribe Cractini becomes Artamini; parvorder Muscicapae becomes Passerida; superfamily Turdoidea becomes Muscicapoidea; family Turdidae becomes Muscicapidae; tribe Erithacini becomes Saxicolini; superfamily Fringilloidea becomes Passeroidea; delete subfamily Melanocharitinae and add family Melanocharitidae, with tribes Melanocharitini and Toxorhamphini, following tribe Nectariniini; add family Paramythiidae (*Paramythia*, *Oreocharis*) following Melanocharitidae; family Ploceidae becomes Passeridae; insert subfamily Fringillinae between family Fringillidae and tribe Carduelini. These changes are in accordance with the International Rules of Zoological Nomenclature and most were suggested by Dr Burt L. Monroe, Jr., on the basis of priority in the use of family group name for the higher categories. Some changes are the results of new DNA hybridisation data obtained since the publication of our 1985 paper, and some were made to achieve consistency in the endings of categories, e.g. -ida for parvorders.

Figure 1 indicates that the *Melampitta lugubris* lineage branched from that of the other birds of paradise at delta  $T_{50}H$  4.6, c. 20-21 million years ago. Delta  $T_{50}H$  4.6 is the average of 10 DNA-DNA hybrids between the single-copy radioiodine-labeled DNA of *M. lugubris* and the DNAs of *Paradisaea minor* (delta 4.3), *Ptiloris paradiseus* (delta 4.4), *Ptiloris magnificus* (4.4), *Epimachus meyeri* (4.4), *Astrapia meyeri* (4.4), *Cicinnurus regius* (4.4), *Cicinnurus magnificus* (4.4), *Manucodia ater* (5.0), and *Pteridophora alberti* (5.2,

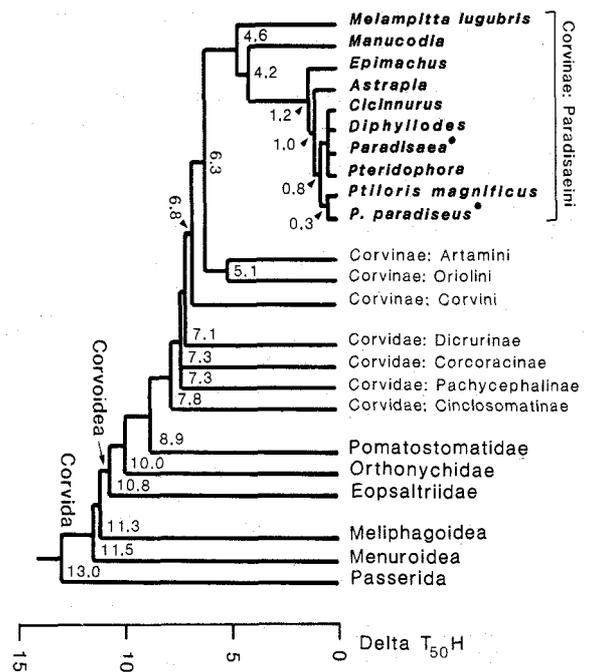


FIGURE 1. Phylogeny of some groups of old endemic Australo-Papuan passerines. Numbers on divergence nodes, e.g., 6.3, are average Delta  $T_{50}H$  values. The single-copy DNAs of the taxa followed by black dots, e.g., *Melampitta lugubris*, were used as radio-labelled 'tracers' in this study.

5.2). The DNAs of species representing the families in the superfamilies Corvoidea, Meliphagoidea, and Ptilonorhynchoidea, and species representing the parvorder Passerida, were also compared with the tracer DNA of *Melampitta lugubris*. The delta  $T_{50}H$  values fit the branching pattern of these groups in Figures 1-4 in Sibley & Ahlquist (1985). Thus, the *Melampitta* clade is the sister group of the other birds of paradise.

'The Greater Melampitta (*Melampitta gigantea*) is one of the least known and apparently rarest New Guinea birds. No field observations at all have been reported for it. Only six specimens are known from four far-flung areas of New Guinea . . .' (Diamond 1983, p. 89). The Greater Melampitta is much larger than the Lesser Melampitta but, like *lugubris*, the adults of *gigantea* are entirely black, and the presumed immatures have areas of rusty brown in the plumage. Diamond (1983) observed this species in the Fakfak Mountains of north-western New Guinea and described its song and unusual nesting and roosting sites in the walls of limestone sinkholes. He also examined four of the six specimens and obtained data on the other two. Diamond tentatively assigned the species to the Orthonychidae and noted plumage similarities to *Pitohui dichrous*,

which we place in the Pachycephalinae of the Corvidae based on DNA comparisons (Sibley & Ahlquist 1985).

Diamond (1985, p. 72) also found the Greater Melampitta in limestone sink (karst) terrain in the Kumawa Mts, and heard the same song he had recorded in the Fakfak Mts. He realised that the song of this species is 'suggestive in quality and pattern of a song of the Black Pitohui (*Pitohui nigrescens*). Diamond noted that 'Mary LeCroy has pointed out to me that *M. gigantea* (and three species of *Pitohui*) share the peculiarity of having abundant egg cases of feather mites around the eyes . . . Could these parallels be relevant to the problem of *M. gigantea*'s affinities, which are obscure?' Specimens of *M. lugubris* seem to lack feather mite egg cases around the eyes. The systematic significance of these observations is uncertain.

In July, 1985, Sibley examined the two specimens of *Melampitta gigantea* in the collection of the British Museum (Natural History) at Tring. A female (BM Reg. 1911-12.20.1069), collected on December 14, 1912, is the specimen from the Utakwa River identified as No. 3 by Diamond 1983, pp. 90, 91). As noted by Diamond, this bird is entirely black. The forecrown plumage is not iridescent, but the feathers are short, erect, and plushlike, as in *M. lugubris*.

Although the answer remains uncertain, the present evidence suggests to us that *Melampitta gigantea* is most closely related to *M. lugubris* and is, therefore, also a bird of paradise. The shared characters include the brownish areas of the plumage of presumed immatures and the plushlike forecrown feathers. DNA comparisons may, someday, test this hypothesis.

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