

# What is the manucode on Tagula (Southeast or Sudest) Island, Papua New Guinea?

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**Abstract.** The manucode from Tagula Island, Papua New Guinea, was formerly classified as a subspecies *alter* of the Glossy-mantled Manucode *Manucodia ater* but was accepted as a species by IOC World Bird List in 2022 based on both morphology and vocalisations. This note outlines these features in detail.

Tagula Island is a relatively large island of volcanic origin located in the Louisiade Archipelago ~280 km south-east of New Guinea and ~80 km south-east of Misima (St Aignan's) Island. It is the largest island in the group at 70 × 20 km (at its widest point), with an area of ~800 km<sup>2</sup> consisting of rugged terrain rising to ~806 m at Mt Riu (Mt Rattlesnake). The Island is surrounded by extensive mangroves and fringing coral reefs. The local government base is Tagula Station which, combined with nearby Western Village, forms the largest settlement area on the north-western coast. The Island's total population is ~4000 people in scattered coastal villages and hamlets. Most residents rely on subsistence farming and fishing, with opportunistic income supplementation from copra production and marine resources including bêche-de-mer and trochus. Historically, there was a short-duration gold rush in 1888–1889 and artisanal goldmining continues on a small scale. Access is now essentially only by sea as the small airfield near Tagula Station is abandoned.

The remote location means that very few ornithologists or birders have visited Tagula Island (also known as Southeast or Sudest Island). Sparse ornithological collections were made during Sir William MacGregor's time as Governor in the late 1880s, either on his behalf (e.g. by Charles W. de Vis) or separately (e.g. by Basil H. Thompson: Tristram 1889). The first extensive and most significant collections were made by Albert S. Meek and the Eichhorn brothers (on his behalf) in 1898 and again in 1916. Hamilton Hamlin of the Whitney South Sea Expedition also collected there in 1929 but this was a short trip conducted during poor weather conditions. Rothschild & Hartert (1903) included the islands with eastern New Guinea, and it is possible that someone mislabelled the specimen at some stage. The 5th Archbold Expedition with L. J. Brass and R. F. Peterson also visited in 1956, from 15 August to 25 September, but did not focus on birds (Brass 1959). Only a few other ornithologists have visited Tagula in recent years, including LeCroy & Peckover (1998), Thane Pratt of the Bishop Museum (Pratt *et al.* 2005), David Mitchell (2017) and WG (Goulding *et al.* 2019, 2020a,b, 2021).

The Island is home to four endemic species – Tagula Honeyeater *Microptilotis vicina*, Tagula Butcherbird *Cracticus louisadensis*, Tagula White-eye *Zosterops meeki* and the more recently recognised Tagula Shrike-

thrush *Colluricincla discolor* (Marki *et al.* 2018; Gill *et al.* 2022). These species and a range of poorly known endemic subspecies are all representatives of more widespread Australasian genera. Many of the forms currently acknowledged at subspecies level are deserving of further attention, and amongst these is a distinctive and remarkably poorly known manucode traditionally treated as an island taxon of the Glossy-mantled Manucode *Manucodia ater alter*. The bird was first collected by A. S. Meek on 16 April 1898, and described by Rothschild & Hartert (1903). It was later further formally distinguished from the Aru Islands and South-east New Guinea forms (Rothschild & Hartert 1929). The distinct morphological differences of the Tagula taxon have continued to generate discussion of its potential species status (e.g. Gilliard 1956, 1969; Beehler & Pratt 2016; Gregory 2017, 2018). The IOC recognised Tagula Manucode *Manucodia alter* as a species distinct from Glossy-mantled Manucode in 2022 (Gill *et al.* 2022). Here we describe aspects of morphology, vocalisations and natural history of this little-studied taxon.

In terms of morphological differences, the Tagula Manucode is distinctly larger than any other subspecies of Glossy-mantled Manucode, and it has a distinctive large bill (average bill length for males: *ater* 42 mm, *alter* 46 mm) and long tail (average for males: *ater* 165 mm, *alter* 172 mm) (Figure 1), with females slightly smaller but showing similar differences (Frith & Beehler 1998). The plumage is also different, potentially in feather structure (Gilliard 1956) and most notably has a rich purple sheen on the underparts, particularly the belly and flanks, far more marked than on the mainland Glossy-mantled Manucode. The males possess a long tracheal loop which extends to the edge of the sternum (Pratt & Beehler 2017).

The vocalisation is very unlike that of the Glossy-mantled Manucode, presumably related to the tracheal morphology and to some extent allometric changes with body size. It has some outward similarities in the structure of its monotone call but is completely different in pitch and length to that of Glossy-mantled Manucodes elsewhere in New Guinea. The Tagula Manucodes (the largest morphologically) have a dominant frequency approximately 8–16-fold lower in frequency (Hz) than Glossy-mantled Manucodes in southern and western New Guinea. It is reasonable to assume that the tracheal elongations of birds-of-paradise



**Figure 1.** An adult female Tagula Manucode on Sudest Island, showing the bluish mantle and neck iridescence, large size and long bill. Photos: Will Goulding

also serve to lower the pitch of, and perhaps amplify, their vocalisations (Clench 1978). It would be interesting to compare these to the vocalisations of the Aru Islands population, as by all accounts the individuals there are large (Gilliard 1956).

The Glossy-mantled Manucode in New Guinea has a distinctive whistled *EEEEEE* note resembling the sound of a tuning fork, a call frequently heard in lowland and hill forest, and also a resonant *clucking kek* or *kek kek* contact or alarm call. By contrast, the manucode on Tagula has a very different deep, short and sonorous resonant *woo hoot*, sometimes given as a more drawn-out slurred

disyllabic *a-woo*, and a short raspy *kek* note that is often run together as a scolding series, with little resemblance to the vocalisations of the mainland birds. It is most vocal in the pre-dawn and very early morning, in the evening, and during overcast or rainy periods.

Vocal differences can act as isolating mechanisms and have been used to reveal cryptic species (Lachlan & Servedio 2004). Several new species have been identified and split by the distinct vocalisations, e.g. honeyeater *Myzomela* spp., owl *Ninox* spp. from Indonesia (Eaton *et al.* 2021) and the morphologically similar Magnificent *Ptiloris magnificus* and Growling Riflebird *P. intercedens*

in New Guinea (Beehler & Swaby 1991). Based on the now known differences in both the vocalisations and morphology, as well as the overall endemism on Tagula, a strong case can be made for treating the Tagula Manucode as a distinct endemic species (as per Gregory 2017, 2018); and this is now accepted by the IOC World Bird List version 12.2 (Gill *et al.* 2022). Molecular work within the *M. ater* complex will no doubt add further evidence of the extent of these differences and, importantly, might help unravel the unusual biogeography within the remainder of the manucode group overall.

The few field observations show that the bird is a somewhat weak flier and seems reluctant to fly across gaps in the forest, but it has strong legs and hops from perch to perch. The bird is usually encountered skulking in shaded thickly vegetated areas of contiguous forest and forested gullies, also in adjacent Sago Palm *Cycas revoluta* stands. It frequents the understorey, hopping through vine tangles and shrub layers, and is generally found either singly or in presumed pairs. It can be wary and difficult to see as it peers through small gaps in the foliage. It is often silent but has a noisy flight, making a swishing or rustling sound like riflebirds *Ptiloris* spp. or astrapias *Astrapia* spp. in flight, as does the main island of New Guinea form of the Glossy-Mantled Manucode and also Curl-crested Manucode *Manucodia comrii* from the nearby D'Entrecasteaux Islands. The manucodes react strongly to calls of the endemic Tagula Butcherbird and investigate their alarm call. Habitat on Tagula Island seems to be still in reasonable condition despite some logging and clearance for gardens (Goulding *et al.* 2019), so there is no immediate conservation threat to this restricted-range, endemic manucode. However, there have been ongoing discussions between local landholders with commercial logging companies, making it seem likely that things may change in the future. Fortunately, from the ecological perspective, recent commercial explorations involving the gold deposits have either stalled or appear to show non-payable quantities.

There appears to be no comprehensive genetic work completed on the complex, which would be desirable to support the contention of specific status, with the Tagula Manucode and especially the Trumpet Manucode *Phonygammus keraudrenii* likely to be examples of cryptic speciation within the manucode group.

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