CHESTNUT-BREASTED QUAIL-THRUSH AND ATYPICAL QUAIL-THRUSHES OBSERVED WEST OF COOBER PEDY

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ABSTRACT

We report the observations of two pairs of quail-thrush in mulga *Acacia aneura* habitats west of Coober Pedy between Mabel Creek and Emu. One male was identified as a Chestnut-breasted Quail-thrush *Cinclosoma castaneothorax marginatum*. The female paired with this bird and the other male resembled Cinnamon Quail-thrush *C. cinnamomeum* but the latter had an atypical breast pattern. These observations and other reports of quail-thrush identified as Cinnamon are from a region otherwise better documented for the presence of Chestnut Quail-thrush *C. castanotus clarum*. Further study is necessary to determine the extent of occurrence of the Chestnut-breasted Quail-thrush in the north-west of South Australia and whether hybridisation occurs between its western subspecies *C.c. marginatum* and the Cinnamon Quail-thrush.

INTRODUCTION

The taxonomy of the quail-thrush genus *Cinclosoma* remains incompletely resolved despite the extensive studies and publications of Julian Ford (Ford 1970, 1974, 1981, 1983). Recent authorities, Christidis and Boles (1994), Schodde and Mason (1999) and Higgins and Peter (2002) have consistently followed Ford (1983) recognising three species within the arid zone. Of these the Chestnut Quail-thrush *C. castanotus* is largely mallee-dependent *Eucalyptus* spp. and extends throughout the Great Victoria Desert (GVD) and into the central Australian ranges, chiefly on sandy substrates. The other two species, the Cinnamon *C. cinnamomeum* and Chestnut-breasted *C. castaneothorax* Quail-thrushes, are closely related, both preferring stony substrates, the former on plains of chenopod shrubland and the latter on mulga-vegetated *Acacia aneura* stony hills and uplands (Schodde and Mason 1999; Higgins and Peter 2002; Johnstone and Storr 2004). As expected there are exceptions to the above generalisations though they are relatively infrequent and minor. Two subspecies of *C. cinnamomeum*, the nominate of the Lake Eyre basin and surrounding arid zone and *C.c. alisteri*, at times considered a separate species (e.g. Ford 1970, 1974; Johnstone and Storr 2004) the Nullarbor Quail-thrush, have been separated since the Pleistocene by the Yellabinna Region

which is occupied by *C. castanotus,* and have differentiated strongly in plumage characters though not greatly in size or proportion, e.g. tail-length. Two subspecies of *C. castaneothorax,* the nominate centred in south-west Queensland and *C.c. marginatum* in central Western Australia, are also strongly differentiated and the two populations are widely separated. The desert-form of *C. castanotus* is *C.c. clarum* (Schodde and Mason 1999). Ford (1970, 1974, 1983) has described hybrids between *C. castanotus clarum* and *C. castaneothorax marginatum* (less closely related taxa) and between nominate *C. cinnamomeum* and nominate *C. castaneothorax* (more closely related) but rather surprisingly, not between nominate *C. cinnamomeum and C. castaneothorax marginatum* which are also considered closely related. No hybridisation has been shown conclusively between *C. cinnamomeum* and *C. castanotus,* of any subspecies.

In further consideration of the taxa relevant to this paper and for simplicity the names *alisteri, cinnamomeum, clarum* and *marginatum* will be applied to the 'Nullarbor', Cinnamon (nominate subspecies), Chestnut (desert subspecies) and Chestnut-breasted (western subspecies) Quail-thrushes respectively.

DESCRIPTION OF SIGHTINGS

On 5–6 March 2005 the authors travelled from Coober Pedy, W to Mabel Creek Station, then via the Anne Beadell 'Highway' 235 km W and NW through Tallaringa Conservation Park (CP) to Emu. We subsequently traveled 202 km S to Maralinga, returning via Ooldea, Wynbring, Tarcoola, Kingoonya and Glendambo (see Appendix for gazetteer of locations).

Apparently typical Cinnamon Quail-thrush *(cinnamomeum)* were seen between Glendambo, Coober Pedy and Mabel Creek Station and subsequently between Kingoonya and Glendambo. Chestnut Quail-thrush *(clarum)* have been identified during this and an earlier trip a few kilometres north of Maralinga and on the transect across the Yellabinna Region between Ooldea and Wynbring. 'Nullarbor' Quail-thrush *(alisteri)* were observed on the Nullarbor Plain and east to the Ooldea–Colona 'road' on low dunes with western myall *Acacia papyrocarpa,* chenopods and other shrubs (31°07'S, 132°34'E) on 15 August 2004.

On 6 March 2005, *c.* 75 km W of Mabel Creek Homestead (HS) and *c.* 24 km inside Tallaringa CP (29°01'S, 133°34'E) a pair of quail-thrush was observed closely over a period of three to four minutes. AB made brief notes of the sighting at the time:

> 'Cinnamon Quail-thrush male and female: extensive cinnamon on back but not crown (greyish), but very broad black bib.'

Realising that the plumage of the male was atypical, we referred to the illustrations of quail-thrushes in our field guide (Pizzey and Knight 1977) and agreed that the breast pattern appeared like that of the 'Nullarbor' Quail-thrush even though the dorsal plumage was typical of *cinnamomeum.* Later the same day we observed another pair of quail-thrush at close range for at least five minutes. The locality was *c.* 28 km E of Emu and *c.* 132 km W of the earlier observation (28°46'S, 132°24'E). AB again made notes as below:

> 'Pair of quail-thrush in short mulga. Male with black bib and brown band below with black below, separating from white belly: brown (colour of breast-band) as on back. Dark greyish crown, brown back, black and white on shoulders: lower black band broad like *marginatum.* Female with even grey breast separated horizontally [sic] from white belly. Stephen felt male's tail longer than Cinnamon.'

The habitat of the observed pairs of quail-thrush was low mulga scrub on a sandy loam soil with other shrubs including horse mulga *Acacia ramulosa,* cassias *Senna* spp., emu bush *Eremophila* spp., *Ptilotus* spp. and dried grasses.

DISCUSSION

The second male we observed seemed to have the plumage characteristics of the Chestnut-breasted Quail-thrush *(marginatum)* showing most of the features illustrated in Higgins and Peter (2002). In particular we observed the following features:

(i) The rufous brown breast-band extended evenly across the midline without any region of white or any extension of black in the midline from the lower black breast-band (see below).

(ii) The lower black breast-band was evenly broad and continued along the flanks without tapering or breaking up into spots.

(iii) The tail seemed rather longer than in

examples of *cinnamomeum* seen east of Mabel Creek.

(iv) We detected no white margin between the brown breast-band and the black above or below. While Higgins and Peter (2002) illustrate such white lines of separation, they were either absent or were narrow and indistinct in the large series of *marginatum* examined in the Western Australian Museum (AB pers. obs.; Johnstone and Storr 2004).

We considered that apart from the greyish crown the remainder of the upperparts was of a similar colour. We cannot state whether this bird exhibited the darker tail and more heavily black-spotted under tail coverts of *marginatum*. The female of this pair had an even toned grey breast with a well-defined lower margin, features that rather favour an identification of *cinnamomeum*. In *marginatum* females the breast is generally rather browner, particularly at the lower margin where it merges with the brown of the flanks (Higgins and Peter 2002; AB pers. obs. of museum specimens) but there is considerable individual variation in these plumage features and differentiation on this basis may be unreliable (J. Matthew pers. comm.).

Having examined museum specimens (AB) we are not confident we could have differentiated in the field between the dorsal patterns of *marginatum* and *cinnamomeum*, both of which have greyish crowns though darker in the former and **rather evenly toned** rufous-brown backs and tails (Higgins and Peter 2002). We conclude that the second male observed was either a Chestnut-breasted Quail-thrush *(marginatum)* or possibly a hybrid between *marginatum* and *cinnamomeum*.

The first male had a plumage-pattern intermediate between *cinnamomeum* (greyish crown) and *alisteri* (breast pattern). The simplest explanation for this appearance is hybridisation between the two taxa, yet the possibility of their interbreeding has not existed for many thousands of years because of the physical barrier of the Yellabinna Region and other parts of the GVD with habitats unsuitable for either taxon. Schodde and Mason (1999) have referred to the brighter plumage of some individuals of *cinnamomeum* from the south-western parts of its range and have questioned character-flow from *alisteri*. An alternative explanation, which would be supported by our observations, is that brighter western individuals of *cinnamomeum* may be subject to character-flow from *marginatum*. Two richer toned *cinnamomeum* specimens, one from north of Mt. Eba in MV and another from east of Kingoonya in the South Australian Museum have plumage characteristics on the head, flanks, tail and wing coverts similar to those of *marginatum*. Plumage-details of three *cinnamomeum* specimens taken near Kingoonya during the British Museum (Hall) expeditions would be of interest but have not been published (J. Matthew pers. comm.; and in Higgins and Peter 2002). The bright rufous crown of *alisteri* was not observed in any of the four quail-thrush discussed here. The extent of black on the breast of the male arid zone quail-thrushes may not be a strongly differentiating feature, as has been argued by Ford (1983) and Schodde and Mason (1999) who therefore proposed that *alisteri* be included in *cinnamomeum* as a subspecies despite otherwise strong claims for specific taxonomic status, e.g. consistent plumage features separating it from *cinnamomeum* and a prolonged period of evolution in isolation. The breast pattern of *cinnamomeum* varies across individuals. The lower black band may have an extension near the midline, like an inverted 'v' which may approach the black chin-to-throat triangle, even to within a few millimetres in some instances (Schodde and Mason 1999; Higgins and Peter 2002; AB pers. obs. of museum specimens). Hybridisation with *marginatum* does not readily explain the broader black band seen in this individual. A case could be made for hybridisation between *cinnamomeum* and *clarum* as an explanation but such hybridisation has not been recognised to date and the taxa are considered relatively distant within the genus (Ford 1983; Schodde and Mason 1999). The bird under discussion might alternatively represent an extreme example of the extended black breast band seen in some *cinnamomeum* as described above.

Ford (1983) recorded *cinnamomeum* only as far west as 27 km W of Coober Pedy, i.e. *c.* 11 km E of Mabel Creek HS, the nearest specimen being from Mt Eba Station, some 200 km to the south-east. On the other hand he obtained a specimen of *clarum* from near Tallaringa Well and Graham Carpenter (pers. comm.) has also recorded this species near the same locality which is *c.* 32 km W of the first observed pair. Ford (1983) recognised broad sympatry (range-overlap) between *clarum* and *marginatum* in mid-central Western

Australia including the northern GVD with smaller regions of sympatry between *clarum* and *cinnamomeum* in central Australia and in the south-westerly distribution of the latter, e.g. to the Gawler Ranges, though not in the region described in this report. Moreover he recognised no contact between *marginatum* and *cinnamomeum* though he did speculate that the former would be found in north-western South Australia, e.g. the Musgrave Ranges. Pizzey and Knight (1997) indicated the Everard Ranges as a locality for *marginatum*, the relevant record presumably that of McGilp (1944) which was the only possible record cited by Close and Jaensch (1984). McGilp did not provide the locality for his solitary observation of a quail-thrush between Oodnadatta and the Everard Ranges. He speculated that the bird which 'repeatedly flew up into a tree' might be *castaneothorax* (i.e. *marginatum*) on the basis of its 'very rufous chest and underpart of the breast' [*sic*], and considered *cinnamomeum* and *clarum* unlikely.

The habitat in which our observations were made was mulga scrub on a sand plain substrate. The area including Tallaringa CP is part of the GVD though the dune system in this, its eastern extremity, is much reduced with individual dunes more widely spaced and of reduced elevation. They also support relatively little mallee vegetation yet provide habitat for the Chestnut Quail-thrush (*clarum*). The quail-thrush described here occurred on the much more extensive inter-dune flats, on an almost level plain. The habitat and substrate are atypical for *cinnamomeum* although mulga scrub with relatively little if any chenopod ground cover is rather nearer the preference of *marginatum* (Schodde and Mason 1999; Higgins and Peter 2002). Extensive mulga scrub occurs over a belt at least 200 km wide from the pastoral properties, ranging beyond Tarcoola, i.e. Mulgathing and Commonwealth Hill Stations, through Tallaringa CP and north to the Everard and Musgrave Ranges. It therefore provides linking habitat between that typical for *marginatum* (mulga on rocky hillsides) and *cinnamomeum* (chenopod plains), which could well support a substantial quail-thrush population of either species or their hybrids.

It is noteworthy that the first and second atlases of Australian birds show quite different distributions of the two taxa *marginatum* and *cinnamomeum*. In the first (Blakers, Davies and Reilly 1984) they were shown together, both then being considered subspecies of *C. cinnamomeum*. There were no records in South Australia west of 134°E, i.e. at latitudes 26–30°S, though continuous distribution was shown in the Northern Territory at 24°S and 25°S. In the second atlas (Barrett *et al.* 2003) on the other hand there are records of *cinnamomeum* west to *c.* 131°E (at 27° and 28°S) and to 132° (at 29°S) yet there are no records of either taxon at 24°S and 25°S between 126°E and 133°E. This extended gap might well be due to difficulties experienced in the field making a positive distinction between these two similar and closely related species. Information concerning the records of *cinnamomeum* west of 134°E in the second atlas was obtained from Birds Australia (A. Silcocks pers. comm.). Four sightings were involved and after enquiring closely of most of the individual observers it seems clear that each observation was of quail-thrush that were distinguished from the other species known from the area, i.e. the Chestnut Quail-thrush (*clarum*). On the other hand, as discussed above, distinction from *marginatum*, whose presence would not have been expected, may be decidedly difficult in the field.

The Department for Environment and Heritage database (Helen Owens pers. comm.) has records of *clarum* from the Great Victoria Desert east to near Mabel Creek HS. There are records of *cinnamomeum* near Mabel Creek HS, the most westerly at 29°08'S, 133°57'E. Two other records lie west of 134°E, near Granite Downs Station at 26°57'S, 133°35'E and near the western boundary of Commonwealth Hill Station at 29°52'S, 133°35'E. Possibly the lack of *cinnamomeum* records west of 134°E at latitudes 26–30°S in the earlier atlas may be due to rejection of records of the species outside its known preferred habitat. It is, however, our observation that the mulga habitats in which our sightings were made have shown regeneration and an increase in density in the twenty years between atlases, thus allowing its greater potential occupation by the mulga habitat-dependent *marginatum* (AB pers. obs.). We identified no features of breast, flank or dorsal plumage providing evidence that the observed birds were hybrids involving the Chestnut Quail-thrush *C. castanotus clarum*. We conclude that the mulga habitats on the eastern flank of the Great Victoria Desert allow for an extensive sympatry between *clarum* and other forms, including *marginatum*, *cinnamomeum* or *marginatum-cinnamomeum* hybrids, but further

collecting in this area and in the adjacent south-western distribution of *cinnamomeum* may be needed for clarification.

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APPENDIX

Gazetteer of localities mentioned in the text.

Locality	Latitude, longitude
Commonwealth Hill HS	29°55'S, 134°10'E
Coober Pedy	29°01'S, 134°45'E
Emu	28°38'S, 132°11'E
Everard Ranges	27°06'S, 132°20'E
Glendambo	30°51'S, 135°35'E
Granite Downs HS	26°55'S, 133°30'E
Kingoonya	30°55'S, 135°19'E
Mabel Creek HS	28°57'S, 134°20'E
Maralinga	30°09'S, 131°35'E
Mount Eba HS	30°11'S, 135°40'E
Mulgathing HS	30°14'S, 133°59'E
Musgrave Ranges	26°15'S, 131°30'E
Oodnadatta	27°34'S, 135°27'E
Ooldea	30°28'S, 131°50'E
Tallaringa Well	29°02'S, 133°17'E
Tarcoola	30°42'S, 134°34'E
Wynbring	30°33'S, 133°32'E