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DESCRIPTION OF SOME NEONATAL PASSERINES IN WESTERN AUSTRALIA

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INTRODUCTION

Boles and Longmore (1985) and Gill (1982) have drawn attention to the paucity of data describing the neonatal nestlings of Australian passerines and have pointed out the possible taxonomic importance of characters such as mouth pattern and the distribution of natal down for determining phylogenic relationships.

During the 1986-1987 breeding season, the colour and distribution of natal down and the mouth pattern of some newly hatched passerine species were recorded opportunistically at Gooseberry Hill, W.A. (31°58'S., 116°03'E.) and Shark Bay, W.A. (25°48'S., 113°43'E.).

METHODS

Although down (neossoptiles) may be present in areas from which feathers will emerge, the distribution of down does not correspond exactly to that of the later feather tracts and Saunders (in Gill 1982) has used the term 'down-patch' to describe an area of neossoptiles. We follow her terminology and that of Gill in naming the various patches (Figure 1). We recorded only the presence or absence of a down-patch and did not measure the extent of the patch, count the number of nessoptiles or measure their length. The colour and markings of the mouth lining and tongue and the colour of the rictal flanges (enlarged margins of the gape) (Campbell and Lack 1985) were noted. All nestlings observed were less than 6 days old, the majority less than 2 days, and the number of nestlings of each species varied from one (for the Thick-billed Grasswren *Amytornis textilis*) to 20 (for the Silvereye *Zosterops lateralis*).

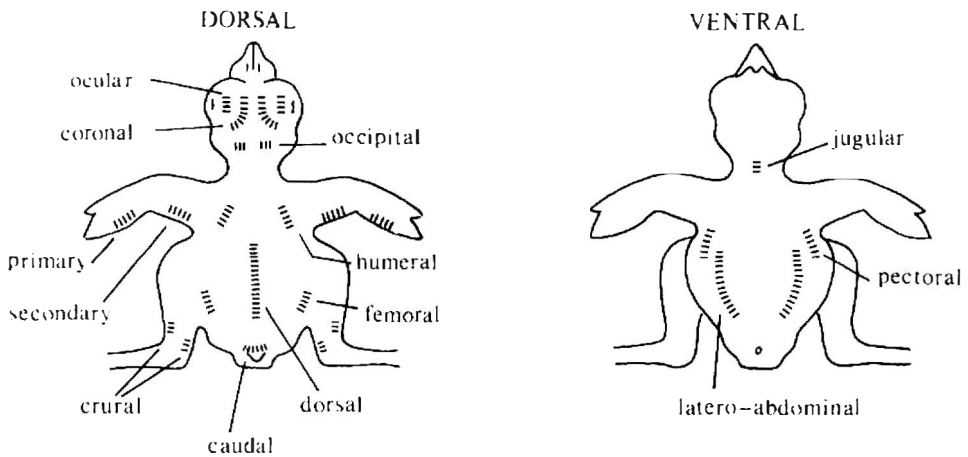

Figure 1. *Locations of down-patches in neonatal passerines.*

TABLE 1

Down patches and mouth colour of some neonatal passerines.

Species	Nest type	Major down-patch							Minor down-patch					Colour		
		Coronal	Occipital	Dorsal	Humeral	Secondary	Femoral	Latero-abdominal	Ocular	Primary	Caudal	Crural	Jugular	Down	Rictal flanges	Inside mouth
Rufous Whistler *Pachycephala rufiventris*	O	+	+	+	+	+	+	+	+	+	+	+		dark grey	yellow	orange-yellow
Grey Butcherbird *Cracticus torquatus*	O	+	+	+	+	+	+	+	+	+		+		light brown	yellow	orange-yellow
White-winged Triller *Lalage sueurii*	O	+	+	+	+	+	+	+	+			+		grey	yellow	orange-yellow
Tawny-crowned Honeyeater *Phylidonyris melanops*	O	+	+	+	+	+	+	+			+	+	+	dark grey	cream	orange-yellow
Brown Honeyeater *Lichmera indistincta*	O	+	+	+	+	+	+							grey	yellow	orange-yellow
Silvereye *Zosterops lateralis*	O	+												white	yellow	flesh
Western Warbler *Gerygone fusca*	E	+		+	+	+	+	+	+					white	white	yellow
Weebill *Smicrornis brevirostris*	E	+	+	+	+	+	+	+	+			+		light grey	cream	yellow
Thick-billed Grasswren *Amytornis textilis*	SE	+	+	+			+	+	+					charcoal grey	white	orange-yellow
Yellow-rumped Thornbill *Acanthiza chrysorrhoa*	E	+	+	+	+	+	+	+	+					grey	cream	yellow
Inland Thornbill *Acanthiza apicalis*	E	+	+	+	+	+	+	+				+		grey	yellow	orange-yellow
Western Thornbill *Acanthiza inornata*	E	+	+	+	+	+	+							dark grey	yellow	orange-yellow
Splendid Fairy-wren *Malurus splendens*	E														white	orange-yellow

\+ indicates the presence of the appropriate down-patch
O = open-cup nesting species
E = enclosed nesting species
SE = semi-enclosed nesting species

RESULTS AND DISCUSSION

Only the maximum number of patches observed for each species is presented in Table 1. Observed variation between nestlings in the number and extent of down-patches may be age-related or congenital (Gill 1982) and further studies on known-aged individuals are planned. We found no pectoral down-patch (as described by Gill) on any nestling of the species examined.

The adaptive advantage of natal down in altricial species may involve crypsis, insulation and/or protection from the sun's rays (O'Connor 1984, Smith 1985). Except for the Silvereye which had surprisingly little down, the open-cup nesting species observed by us, such as the Grey Butcherbird *Cracticus torquatus*, Rufous Whistler *Pachycephala rufiventris* and Tawny-crowned Honeyeater *Phylidonyris melanops*, generally appeared to be much more downy and better camouflaged than the enclosed nesters, although some had a similar number of down-patches. This may have been because down was denser, longer or more darkly coloured in the open-cup nesters. On the other hand, nestlings of the Thick-billed Grasswren, which builds a semi-enclosed but well concealed nest, appeared to be almost covered in dark down, while the Splendid Fairy-Wren *Malurus splendens*, an enclosed nester, had no down at all. No two species of *Acanthiza* observed had a similar distribution of down.

Figure 2. *Mouth pattern of a 1 day old Brown Honeyeater Lichmera indistincta.*

Only the Brown Honeyeater *Lichmera indistincta* had a mouth pattern — two distinct elongated black spots at the base of the tongue (Figure 2). In older nestlings these spots were sometimes joined in the centre, giving the appearance of a black wedge. This was markedly different to the 'extensive black tongue tip' described by Boles and Longmore (1985). In view of the possible taxonomic significance of such variation within a species it would be of interest to determine whether Brown Honeyeaters from other regions of Australia are divergent in this character.

More comprehensive data are required to further elucidate the taxonomic or functional significance of natal characters. However, the variation shown here between related genera (e.g. *Amytornis* and *Malurus*) suggests that this line of study may be profitable.

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SEASONAL VARIATION IN HEAD-BILL LENGTH FOR THE EASTERN SPINEBILL *Acanthorhynchus tenuirostris* AT BARREN GROUNDS NATURE RESERVE, NEW SOUTH WALES

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Head-bill length (HB) was measured for all Eastern Spinebills captured at Barren Grounds Nature Reserve over a 16-month period. HB for adult males was always greater than for adult females at any given time of the year. Mean HB for both males and females showed a seasonal variation. There was a maximum in midwinter and a minimum in midsummer. Four individuals recaptured on several occasions over the same period showed a similar variation in HB.