

EYRE HIGHWAY MAGPIES (*Gymnorhina*)

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Accepted August, 1975

It has not yet been determined what form of interaction (if any) occurs between the Western Magpie *Gymnorhina hypoleuca dorsalis* and the White-backed Magpie *Gymnorhina hypoleuca leuconota* (subspecific and specific titles according to Amadon, 1951). Their taxonomic relationship cannot properly be defined until this is known. The problem is all the more important in view of Carrick's relegation of the White-backed Magpie (*leuconota*) to a subspecific status under *Gymnorhina tibicen* (Black backed Magpie), while elevating the Western Magpie to specific rank (Carrick, 1969, Rowley, 1975). This latter decision is evidently made on the basis of behavioural differences, and specifically the failure of the Western Magpie to form open flocks (Robinson 1956, Davies 1975).

In Western Australia, magpies have been recorded as far east as Madura and Eucla (Wilson 1946, Ford 1975). An earlier reference cited by Ford (McCull 1929) actually describes White-backed, not Western Magpies; and McCull mentions the possibility that these were released tame birds. In South Australia they occur at least as far west as Yalata, Colona and Ivy Tanks (Ford 1969 a, Wilson 1946, Black 1974);

and the possibility therefore exists that occasional birds may bridge the narrow gap in the mallee and myall scrub which abuts the southern edge of the Nullabor Plain.

The possibility of interaction of these two forms of the Australian Magpie has been greatly enhanced by Ford's recent observations of magpies in the Great Victoria Desert (Ford 1971), thus negating his earlier assertion that they were not present there (Ford 1969b). Magpies are distributed very sparsely in these regions; and the early impression of absence of the species has a parallel with early reports that it was not recorded in the Musgrave and Everard Ranges (White 1915, Cleland 1934, McGilp 1935), or from Ooldea (White 1919, LeSouef 1928).

Failure to obtain adequately close observation has resulted in Ford's inability to identify fully the type of magpies seen in most cases, but in a recent communication he has stated that one bird seen "about 68 miles north-west of Cosmo-Newberry† . . . (was) a handsome white-backed male." [i.e. male of unidentified form

† Footnote: Approx. 150 km north of Laverton.

with white back.] Black-backed birds, notably near Mabel Creek H.S. (S.A) and at Cook, on the Nullabor Plain, were also recorded, but whether these were pure Black-backed Magpies, or showed any sign of hybridisation — as is the rule in Central Australian Black-backed Magpies (North 1896, Black 1975) — is less certain.

White-backed Magpies occupy the whole of Eyre Peninsula and extend into the Gawler Ranges (Gill 1975, Paton 1975 a) and the Barton Sandhills east of Ooldea, including Tarcoola and Kingoonya (Paton 1975 b, Leiblich 1975).

This sandhill country, taken with the woodland of the Great Victoria Desert (Ford 1971) forms a natural corridor, providing a link between South-West Australian and Eyre Peninsula avian forms, so that it can be seen that no ecological barrier exists between the magpies of these two regions.

Further observations of White-backed Magpies in the North-Western quarter of South Australia (apart from those mentioned but provisionally discounted by Condon 1951, 54) have been supplied by Paton (Andamooka, Anna Creek and Everard Park) and Corrick (Mt. Eba, Coober Pedy). Cox (1975) has observed a White-backed Magpie as far east as Dulkaninna Stn., 90 km north-east of Marree on the Birdsville Track. A continuous though sparse distribution of White-backed Magpies thus connects the Central Australian pure White-backed birds (Parker 1969, Black 1975) with those in the south. However, overlap and presumed hybridisation with the Black-backed Magpie occurs over much of this area north of the East-West Railway, and in certain places south of it, e.g. west of Lake Gairdner (Leiblich 1975), and south-east of Pt. Augusta to near Whyalla (numerous reports of hybrid birds).

The difference between the Western and White-backed Magpies lies essentially in the appearance of the backs of the females and young males. The Western bird also has on average, a longer bill* (Amadon 1951), but the described differences in appearance of the shafts (Macdonald 1973) and outer tail feathers (Campbell 1929, Amadon 1951) are neither constant nor distinguishing of the Western form (Wilson 1946, Black 1975). Robinson (1956)

describes immature and female plumages of the backs of Western Magpies as black, usually though not invariably (Wilson 1946) edged with white. These black feathers extend from the middle of the nape to the rump, corresponding exactly with the extent of the grey feathering on the backs of female White-backed Magpies. The appearance is thus quite different from the more limited and more distinct black band on the backs of Black-backed Magpies. Thus the difference between the females of *Gymnorhina hypoleuca dorsalis* and *Gymnorhina hypoleuca leuconota* is purely a matter of blackness or greyness of the back feathers (see also Amadon 1951).

While driving across the Eyre Highway in August-September, 1974, I examined the backs of all magpies as closely as was compatible with safety. Magpies including females with grey backs, possibly a little darker than most seen near Adelaide, were encountered as far west as Yalata. In Western Australia observations were few but two presumed females with dark grey backs, each in the company of males with pure white backs, were recorded between Madura and Norseman. Between Esperance and Hope-toun I noted females had "blackish backs" and further west that the backs seemed "darker than around Esperance." In Perth females were seen to have black backs with or without white feather edgings, but on the return journey via Southern Cross, I recorded dark grey-backed birds almost as soon as we were out of the Stirling Ranges; and near Fowlers Bay (120 km west of Ceduna) I recorded the first "female with a pale grey back."

Robinson's (1956) description of plumages of the Western Magpie does not include dark grey backs in mature females. I have been unable to find confirmation from Western Australian observers of my impression that this plumage occurs in the country between the South-West Australia and Eyre Peninsula, though Paton regarded the six birds she saw between Cocklebidy and Eucla as White-backed Magpies.

An examination of specimens from the Western Australian Museum shows that in many females and immatures some grey feathers are present, notably in the lower back and rump. These feathers are similar to the back feathers of *G. h. leuconota* specimens in the South Australian Museum. The distal $\frac{1}{3}$ - $\frac{1}{2}$ of the feather is grey, paler at the edges and showing a variable amount of white at the tip. At the centre of the feather, near the shaft is a very dark or black line (also prominent in *G. h.*

* Footnote: This fact might indicate (genetic) introgression from the long-billed Black-backed Magpie (*Gymnorhina tibicen longirostris*) of the North-West but hybridisation between these two western forms has not been described. The black bands on the backs of *longirostris* is of rather variable width, (Storr 1975, D. Condon 1975) but whether this is evidence of hybridisation cannot be firmly concluded at present.

leuconota immatures). A range of appearances in the *G. h. dorsalis* feathers shows an increasing patch of dark grey, blackish or black adjacent to this line, which in its fullest extent constitutes the black back feathers of the typical Western female. Unfortunately, the three most easterly female specimens (A11496, A11498 and A11499), all taken in 1904 at Esperance, are somewhat discoloured, but the impression, when viewed from a distance is of backs which are respectively blackish, grey, and black. Of three other female specimens, A11723 (Jerramungup, 400 km south-east of Perth) has a dark grey back, feathers having dark grey ends with or without a blackish centre patch: A11720 (Williams, 160 km east-south-east of Perth) has a blackish back with the lower back and rump grey: A11721 (Kojonup, 300 km south-south-east of Perth) is similar, but with the lower feathers somewhat darker.

This evidence indicates a basic similarity in the back feathers of Western and White-backed females, and would be consistent with the possible existence of intermediate forms: however it must not be regarded as conclusive, and geographical variation in the Western Magpie remains unproven. Further close field observation is required with the above question in mind; and a contemporary collection of specimens in a transect across the presumed area

of interaction between the two forms will be necessary before any firm conclusion can be drawn that their presumed interaction is an intergradation, an overlap with hybridisation, or a true hybrid zone (Short 1969). Much further work is required before finality is reached as to the taxonomy of the forms of the Australian Magpie.

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