

working the mound nearest the site of copulation — about 120 m. I had banded the female nearby as an adult on 24 October 1976; hence she was at least nine years old. I had watched her copulate previously with at least two other males, but no more than one in any breeding season.

This copulation occurred well within the breeding season while there were several active incubation mounds in the area. Most copulations I have seen at mounds occurred early in the morning often in semi-darkness and never as late as 0935 h.

I have often thought that copulation at the mound may be used by the female as a means of gaining access to an egg-laying site of which there may be few to choose from. The copulation I described could possibly be interpreted in the same way, i.e. it allows the female access to some other resource, perhaps food. But access to the mound is usually for no longer than the duration of egg-laying, while feeding is obviously more protracted.

Whatever the explanation for such isolated sexual interactions, the displays and sequence of behaviour leading to copulation appear similar to those used at the incubation mound, suggesting that these copulations may be equally functional. Whether copulations away from the immediate sites of incubation mounds tend to be more frequent in more open habitats or in less dense populations than those occurring in rainforest must await the results of systematic and comparative field observations.

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Distributional Notes on North Queensland Birds

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From 10 August to 8 October 1986 I carried out field work between the Georgina River in the west and Cooktown in the north-east of Queensland. I was accompanied by J. Nielsen and M. Burke, graduate assistants at Curtin University of Technology. Some of our observations and specimens allow me to amend the ranges of 42 species and subspecies as delimited by Storr (1984).

Haliaeetus leucogaster White-bellied Sea-Eagle. One at Iffley extends its known range up the Norman River from 'beyond Glenore'. It was also observed on the Yappar River upstream to Esmeralda.

Alectura lathami Australian Brush-turkey. Storr (1984, p. 37) indicates that the nominate race extends north in the highlands of north-east Queensland to Mt. Finlay and after a break of 40 km it is replaced in the lowlands around

Cooktown by the purple-wattled race *A. l. purpureicollis*. However, the single bird I saw near Cooktown had red and yellow bare skin on the head and neck, as in the nominate race; it was in rainforest on the ridge running west from Mt. Cook.

Coturnix australis Brown Quail. A covey of eight (one collected) in long grass beside the upper Yappar at Glenora helps to define its inland limits.

Grus antigone Sarus Crane. One at a pool on the Alexandra River east of Talawanta is the southern-most record for the Gulf drainage.

Geopelia humeralis Bar-shouldered Dove. An observation at Walkers Bend on the lower Flinders helps to fix its southern limit in the Gulf drainage.

Vanellus tricolor Banded Lapwing. One on a dam near Arcadia on 11-12 August extends its range to the upper Georgina.

Phaps chalcoptera Common Bronzewing. Observations on the upper Yappar at Esmeralda help to define the western limit of the eastern population.

Petrophassa scripta Squatter Pigeon. A flock of 20 (at least one with red orbital skin) at Prospect on the Clara River marks the south-western limit of the race *P. s. peninsulae*. For the characteristics of this race see Ford (1986, pp. 89-90).

Petrophassa plumifera Spinifex Pigeon. A flock of more than 20 at Donors Hill homestead defines the north-eastern limit of the western population. Birds seen in the foothills of the Gregory Range at Esmeralda extend the range of the Cape York Peninsula population southwards from the Croydon and Georgetown districts.

Cacatua sanguinea Little Corella. The western population was observed as far east as Wernadinga (Rope Waterhole), the lower Flinders (Walkers Bend), the lower Saxby (Uralla Waterhole) and Iffley. However, they were absent from the Gulf lowlands between Wernadinga and the Flinders, a transect also notable for the absence of Sulphur-crested Cockatoos.

Cacatua galerita Sulphur-crested Cockatoo. Observations on upper Mingera Creek (Old May Downs), Slaty Creek (25 km SSW of Cloncurry) and the Dugald River (Granada) slightly extend the range of the north-western population. Observations on the lower Flinders (Walkers Bend), on the lower Saxby (Uralla Waterhole) and at Iffley mark the western limit of the eastern population.

Trichoglossus haematodus Rainbow Lorikeet. Observations at Esmeralda and Nara define its south-western limit on Cape York Peninsula.

Aprosmictus erythropterus Red-winged Parrot. Two birds observed on Waverley Creek (60 km NW of Dajarra) extends its range southwards from Mt. Isa.

Platycercus adscitus Pale-headed Rosella. An observation at Prospect marks its south-western limit on Cape York Peninsula.

Barnardius zonarius Port Lincoln Ringneck. The 'Cloncurry Parrot' *B. z. macgillivrayi* is more plentiful and widespread than indicated by Storr (1984, p. 74). It was seen in pairs or small flocks on most gum-lined watercourses in north-western Queensland west on Mingera Creek to Old May Downs, south on the Burke River to Boulia, and north on the Leichhardt to Lorraine.

Dacelo novaeguineae Laughing Kookaburra. An observation on the upper Yappar (16 km W of Glenora) defines its south-western limit on Cape York Peninsula.

Crecopis ariel Fairy Martin. Old nests in a cave in the Gregory Range (40 km N of Esmeralda) mark the northern limit of its breeding range.

Oreoica gutturalis Crested Bellbird. Two birds (one collected) in eucalypt/lancewood scrub 10 km N of Waitan on the upper Norman constitute a large extension of range northwards.

Myiagra inquieta Restless Flycatcher. Storr (1984, p. 116) implied that the northern subspecies *M. i. nana* was divided into two populations. However, it was recorded at several localities in the supposed gap, namely at Quamby, Talawanta, L Creek, Walkers Bend, Bang Bang Waterhole, Donors Hill, Wondoola, Uralla Lagoon, Iffley, Prospect and Esmeralda.

Gerygone fusca Western Gerygone. Specimens and observations at Floraville, Talawanta and Coolullah mark its north-western limits in Queensland.

Gerygone olivacea White-throated Gerygone. Specimens of the eastern subspecies *G. o. olivacea* relocate its western limits at Armraynald, Floraville, Walkers Bend, 13 km SW of Claraville and Nara.

Acanthiza chrysorrhoa Yellow-rumped Thornbill. Observations at Quamby and Coolullah define its north-western limits and an observation at Pine Tree Creek (15 km N of Mt Sturgeon) its north-eastern limit.

Daphoenositta chrysoptera Varied Sittella. Specimens collected in coolibah/*Terminalia* woodland at Uralla Waterhole on the lower Saxby and in grey box woodland near Bang Bang Waterhole on the lower Flinders were pure *D. c. leucoptera*. Further down the Flinders, in cajuputs at Walkers Bend, the species was represented by hybrids between *D. c. leucoptera* and *D. c. striata*.

Climacteris picumnus Brown Treecreeper. Observations on the Clara at Prospect, the upper Norman near Victoria Ponds and the Stawell at Cambridge Downs define more precisely its south-western limits in north Queensland.

Climacteris melanura Black-tailed Treecreeper. Specimens and observations on the Burke near Boulia constitute a large extension of range southwards, while specimens and observations in snappy gums at 5 km E of M Lagoon and 10 km E of Talawanta and in coolibah/grey box woodland at Bang Bang Waterhole on the lower Flinders represent an extension eastwards.

Entomyzon cyanotis Blue-faced Honeyeater. A specimen

from Armstrong Creek extends the range of the nominate race for 50 km south-westerly from Normanton.

Lichenostomus flavus Yellow Honeyeater. Observations on the upper Yappar at Glenora and upper Clara at Nara extend its range southwards from the Croydon and Forsyth districts.

Lichenostomus leucotis White-eared Honeyeater. Three birds (one collected) on the Great Dividing Range 30 km NNE of Torrens Creek constitute a slight extension of range northwards.

Lichenostomus plumulus Grey-fronted Honeyeater. Observations at 5 km E of M Lagoon, in the last of the snappy gums before the descent on to the open plains stretching west from the lower Flinders, mark the eastern limit of the north-western population.

Lichenostomus penicillatus White-plumed Honeyeater. A specimen collected from a flock of seven at Iffley constitutes a large extension of range northwards.

Melithreptus albogularis White-throated Honeyeater. An observation at Esmeralda marks its south-western limit on Cape York Peninsula.

Certhionyx pectoralis Banded Honeyeater. Observations at 16-mile Waterhole (32 km N of Esmeralda) and at Nara extend its range southwards from the Croydon district.

Pardalotus rubricatus Red-browed Pardalote. An observation near the Norman River 14 km NE of Iffley extends the range of the northern population southwards for 85 km.

Pardalotus striatus Striated Pardalote. A dead yellow-rumped fledgeling in a nest tunnel in Minger Creek at Old May Downs helps to define the southern limit of the subspecies *P. s. uropygialis*. A specimen of *P. s. substriatus* collected in bloodwood/gidgea scrub 8 km S of Arcadia on 11 August is the first record of this migratory subspecies in the valley of the Georgina.

Zosterops lutea Yellow White-eye. Observations at Floraville mark their inland limit on the Leichhardt.

Poephila bichenovii Double-barred Finch. An observation at Granada fills the gap in known range between Fountain Springs and Sedan.

Poephila acuticauda Long-tailed Finch. It was collected on the Leichhardt as far downstream as Floraville, where the birds showed no introgression from the closely related Black-throated Finch. Neither species was observed further down the Leichhardt at Armravnald. (The first Black-throated Finches were found at a waterhole 27 km ENE of Wernadinga.)

Poephila cincta Black-throated Finch. Observations on the Norman at 14 km NE of Iffley and on the Clara at Prospect better define the southern limits of the black-rumped subspecies *P. c. atropygialis*.

Sphecotheres viridis Figbird. Flocks in the main street of Karumba and in a nearby semi-deciduous vine scrub extend the range of *S. v. flaviventris* on the west coast of Cape York Peninsula southwards from the Staaten River.

Chlamydera maculata Spotted Bowerbird. Two specimens collected in river red gums on Waverley Creek (60 km NW of Dajarra) partly fill the gap in known range between Mt. Isa and the Georgina. A specimen from Rope Waterhole (Wernadinga) and an observation at Donors Hill extend its range 210 km and 170 km northwards from Kajabbi and Sedan. Thus, Dr Storr (pers. comm.) was probably wrong to reject on geographic grounds McLennan's record of this bowerbird at Augustus Downs and Macgillivray's on the O'Shanassy.

Artamus minor Little Woodswallow. A party of eight near Boulia on 17 August extends its range 112 km southwards from Sulieman Creek.

Strepera graculina Pied Currawong. A specimen from Glenora at the head of the Yappar extends its range westwards.

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Gazetteer

Arcadia 20°53'S, 138°04'E
 Armravnald 17°57'S, 139°45'E
 Bang Bang Waterhole 18°34'S, 140°43'E
 Claraville 18°40'S, 141°43'E
 Donors Hill 18°43'S, 140°33'E
 Esmeralda 18°51'S, 142°34'E
 Glenora 19°00'S, 142°58'E
 L Creek 18°01'S, 140°34'E
 M Lagoon 18°06'S, 140°16'E
 Mt. Cook 15°30'S, 145°16'E

Nara 19°14'S, 143°01'E
Old May Downs 20°26'S, 139°04'E
Prospect 18°55'S, 142°15'E
Rope Waterhole 18°07'S, 139°58'E
Talawanta 18°38'S, 140°16'E

Uralla Waterhole 18°37'S, 140°59'E
Victoria Ponds 19°24'S, 142°51'E
Waitan 19°35'S, 143°01'E
Walkers Bend 18°10'S, 140°52'E
Wondoola 18°34'S, 140°54'E

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