

PRE-COPULATION DISPLAY BY THREE SPECIES OF WOODSWALLOWS. In the last two years I have observed pre-copulatory displays of three species of woodswallows in trees close to my house. My observations differ in some respects from the displays described by Rowley (1976) and Fleming (1992).

On 24 October 1995 a large mixed flock of migrating woodswallows stopped to rest in trees around my house 11 km SE of Langhorne Creek (which is about 60 km SE of Adelaide). The flock of over 100 birds comprised about two-thirds White-browed Woodswallows *Artamus superciliosus*, the others being Masked Woodswallows *A. personatus*. The weather was calm and hot. After a few minutes my attention was drawn to a female Masked sitting on a thin, dead branch and indulging in exaggerated tail movements, moving it from side to side in an arc much greater than 180°. After two or three minutes of this behaviour she began to wing-flick. Bursts of 3–5 rapid wing-flicks alternated with quiet intervals. Exaggerated tail movements continued throughout the sequence. The wing-flicking sequence strongly resembled that described by Brooker and Saffer (1996) for the pre-copulatory display given by a male Hooded Robin *Melanodryas cucullata*. After quite a few bursts of wing-flicking by the female, a male flew down, alighted gently on her back and copulated briefly. As he did so, he was dived upon by another Masked (presumed male) and either was dislodged or avoided contact by moving only at the last split second. The female also flew and I was unable to locate the individuals again.

On 29 November 1996 I noticed a pair of Dusky Woodswallows *A. cyanopterus* sitting in a dead sugar gum *Eucalyptus cladocalyx* near the shed. Both were tail-wagging vigorously, the male exaggeratedly so. The birds were some two metres apart. The female began an open-wing display. This could not be classed as a wing-flick, rather a slow vertical raise, hold position briefly, then close. After several of these sequences the male began to make similar movements. When this mutual displaying had continued for about two minutes, the male flew to the female, alighted gently on her back and copulated for 2–3 seconds before flying off to another tree. After a few moments the female flew about two metres to another branch and stayed there quietly.

Finally on the morning of 14 December 1996 I was watching a foraging pair of White-browed

Woodswallows from my kitchen window. They had a nest nearby which I suspected was at about the hatching stage and may have contained small naked young. The female flew from the ground to a low branch and a short time later the male flew to her and they copulated. I had not witnessed any prior display but, through being unsuspecting, may have missed it. The female flew off (I mistakenly thought back to the nest), but re-appeared soon after, flew to the branch where the male was perched and sat close to him. He hopped over her and then she hopped over him to near the end of the branch. She took a short flight, came back and they cuddled for a short time then sat apart and preened. Both flew to the ground and foraged. The male took off and hunted aerially but the female stayed foraging on the ground until hopping on to a small stick some 30 cm above the ground. The male returned to a higher branch some 5 m away. After a short time the female extended her wings so that they were slightly raised, and slightly forward as if mantling prey or like an Eastern Reef Egret *Egretta sacra* herding fish. The male immediately flew to her, alighted on her back, copulated briefly and flew away, while the female stayed on her stick.

Knowing that the female had been sitting on the nest the previous evening, I inspected the nest and found that it had been destroyed. By their later vehement swooping actions, it appeared that the woodswallows blamed a juvenile Australian Magpie *Gymnorhina tibicen* for their loss. They re-nested quickly within 30 m of the previous nest, but this time chose a site behind some projecting bark on the trunk of a tuart gum *Eucalyptus gomphocephala* in contrast to their previous more exposed situation. They successfully reared young to independence.

During the rearing of the young from this second nest, the male was seen to kill a lizard. He was foraging on the ground and apparently disturbed the lizard amongst some sticks. After initial surprise and a fear reaction, the bird began to peck the lizard as it moved away. The bird tried to stretch to maximum height, often leaning slightly back, before pecking, presumably in order to deliver maximum force. After a pursuit of approximately two metres the lizard was immobilised and picked up and dropped several times. From its size and appearance it seems more likely to have been a *Hemiergis peronii* rather than *Menictia greyii*, which is the other lizard species common in the area. The wood-

swallow was reluctant to eat the lizard or take it to its young, but kept picking it up and dropping it and eventually leaving it before returning a minute or so later to repeat the process. It may have been waiting for all nervous reaction of the lizard to cease. My observations ended without seeing the lizard eaten.

I did not observe mate-feeding in any of these pre-copulatory displays. The female Masked was part of a migrating flock and so both courtship and invitation to copulate were presumably involved in her display. Conversely the White-browed were definitely preparing to re-nest very quickly after the failure of their first attempt. I suspect that the Dusks were also re-nesting since they had appeared to commence nesting some 2-3 weeks previously. Since each bird of these two pairs was with a chosen partner, the more subdued displays may reflect the lack of need for

a strong courtship component. Birds trying to win a mate against competition for the first time for the season might be expected to display more vigorously. Possibly two or more variants of display could be used by each *Artamus* species.

REFERENCES

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Received: 17 June 1997