

ACKNOWLEDGMENTS

Tom Davis of 'Salisbury Downs' allowed the fieldwork to be undertaken on his property, and came to the rescue of the researchers more than once. Brad Law contributed to the banding operations. The Australian Bird and Bat Banding Scheme supplied bands and recovery records. The Division of Wildlife and Ecology CSIRO provided office facilities. The work was financed in part by a levy on game licences supported by the New South Wales Field and Game Association.

REFERENCES

- Braithwaite, L. W. (1971). Daylength, gonad cycle and flightless moult in Black Duck and Grey Teal. Ph.D. Thesis, Australian National University, Canberra.
- Braithwaite, L. W., Maher, M. T., Briggs, S. V. and Parker, B. S. (1986). An aerial survey of three game species of waterfowl (Family Anatidae) populations in eastern Australia. *Aust. Wildl. Res.* 13: 213–223.
- Briggs, S. V., Maher, M. T. and Davey, C. C. (1985). Hunter activity and waterfowl harvests in New South Wales 1977–1982. *Aust. Wildl. Res.* 12: 515–522.
- Briggs, S. V. (1992). Movement patterns and breeding characteristics of arid zone ducks. *Corella* 16: 15–22.
- Caughley, G. and Briggs, S. (1983). Management of waterfowl. In 'Parks and Wildlife: Wetlands' (Ed. C. Haigh) pp. 68–72. (National Parks and Wildlife Service: Sydney.)
- Frith, H. J. (1959). The ecology of wild ducks in inland New South Wales. II. Movements. *CSIRO Wildl. Res.* 4: 108–130.
- Frith, H. J. (1962). Movements of the Grey Teal, *Anas gibberifrons* Muller (Anatidae). *CSIRO Wildl. Res.* 7: 550–70.
- Gentilli, J. and Bekle, H. (1983). Modelling a climatically pulsating population: Grey Teal in south-western Australia. *J. Biogeogr.* 10: 75–96.
- Goodrick, G. N. (1984). Wetlands of north-western New South Wales. *Nat. Parks Wildl. Serv. Occ. Pap.* No. 6.
- Hochbaum, H. A. (1942). Sex and age determination of waterfowl by cloacal examination. *Trans. N.Am. Wildl. Conf.* 7: 299–307.
- Kingsford, R. T. (1990). Back of Bourke — not just red dust and kangaroos but home for thousands of waterbirds. *Aust. Ranger Bull.* 5: 18–19.
- Lavery, H. J. (1970). Studies of waterfowl (Anatidae) in north Queensland. 4. Movements. *Qld. J. Agric. Anim. Sci.* 27: 411–424.
- Lawler, W. and Briggs, S. V. (1991). Breeding of Maned Duck and other waterbirds on ephemeral wetlands in north-western New South Wales. *Corella* 15: 65–76.
- Lowe, K. (1989). 'The Australian Bird Bander's Manual'. (Australian National Parks and Wildlife Service: Canberra.)
- Maher, M. (1988). Wetlands and waterbirds in the arid Australian inlands — some principles for their conservation. *Proc. Int. Symp. Wetlands*, Newcastle 1986: 280–294.
- McNally, J. and Falconer, D. (1953). Trapping and banding operations Lara Lake, 1952. *Emu* 53: 51–70.
- Norman, F. I. (1971). Movement and mortality of Black Duck, Mountain Duck and Grey Teal banded in South Australia, 1953–1963. *Trans. Proc. R. Soc. S.A.* 95: 1–7.

Corella, 1993, 17(2): 60–61

PREDATION BY BOYD'S FOREST DRAGON ON BIRDS CAUGHT IN MIST NETS

This note reports instances of confirmed and likely predation by Boyd's Forest Dragon *Gonocephalus boydii* on birds caught in mist nets set in rainforests of north-eastern Queensland. Instances of predation on birds caught in mist nets are not often published (but see, for example, Recher *et al.* 1985). I hope that by reporting these cases I might alert other bird banders to be especially aware of the possibility of this form of mortality.

Five instances of predation are here reported. In each case the dead bird was preserved as a voucher study skin and lodged in the Queensland Museum; tissues (heart, liver and breast muscle) were taken and preserved in liquid nitrogen (four cases) or 70 per cent alcohol and will ultimately be lodged with the collection of the CSIRO, Division of Wildlife and Ecology, Canberra.

On 20 November 1991 while mist-netting in a fragment of rainforest ca. 3 km north-east of Millaa Millaa, three Mountain Thornbills *Acanthiza katherina* were found dead at ground level in a mist net. Their heads had been crushed and had the appearance of having been sucked. The nets had been left for no more than between 20 and 30 minutes since last being checked.

On 4 December 1991 while mist-netting at Roaring Meg Creek ca. 5 km west of Cape Tribulation another Mountain Thornbill was found dead in a mist net. Again the head was crushed but no more than 20 minutes had passed since the nets were last checked. The net was closed immediately as our departure from the site was imminent anyway.

On 6 December 1991 while mist-netting at the Windsor Tableland (16°18'S, 145°05'E) a Boyd's Forest Dragon was found attacking a Fernwren *Oreoscopus gutturalis* caught in the bottom of a net. It was crushing the bird's head and the bird was already dead when found. The net had been open no more than 20 minutes. The dragon

remained near the site of the net for a short time but the net was immediately closed.

Given that a Boyd's Forest Dragon was found attacking a Fernwren in exactly the same manner in which the Mountain Thornbills had been killed, it seems reasonable to suppose that the same species of dragon may well have killed the Mountain Thornbills. Conceivably, however, an Eastern Water Dragon *Physignathus lesueurii* could have been the predator at Roaring Meg Creek as the net was close to a small creek with rock and small boulders scattered along its course.

Even if mist nets are set slightly above the ground in rainforest, Boyd's Forest Dragons could still attack small birds caught in the bottom of the lowest rung. Bird banders need to be especially vigilant to minimise or avoid altogether this form of mortality to birds.

My purpose in mist-netting was to capture ground-dwelling birds so the bottom rungs of nets were intentionally set at ground level. In the course of this project, the mist-netting for which is now complete, I have netted some 400 birds and only two other instances of mortality in the nets were recorded: (a) a Large-billed Scrubwren *Sericornis magnirostris* caught at about 1.6 m

above ground level was killed, perhaps by a Black Butcherbird *Cracticus quoyi* and (b) a second Large-billed Scrubwren caught at the bottom of a net was presumably overlooked in only one round of checking the nets due to its lying motionless at ground level in relatively cold and dark conditions.

ACKNOWLEDGMENTS

Though probably not thrilled to be associated with this specific part of my studies, I should thank Ceinwen Edwards, Anita Heideman and Michael Cunningham for their help with the mist-netting from which this report grew. Professor Jiro Kikkawa and James Pook offered supportive comments on a draft.

REFERENCE

- Recher, H. F., Gowing, G. and Armstrong, T. (1985). Causes and frequency of deaths among birds mist-netted for banding studies at two localities. *Aust. Wildl. Res.* 12: 321-326.

L. JOSEPH

Department of Zoology and Centre for Conservation Biology,
University of Queensland, Queensland 4072.

Received 27 March 1992

Corella, 1993: 17(2) 61-62

A POSSIBLE CASE OF INTRA-SPECIFIC BROOD PARASITISM IN THE BELL MINER

Intra-specific brood parasitism has never been reported for the Bell Miner *Manorina melanophrys* (Smith and Robertson 1978; Clarke 1988). The distribution of clutch sizes is unimodal with clutches of two eggs accounting for 88.8 per cent of all the clutches ($n = 134$) at Healesville. Clutches of three are occasionally (6%) laid but: (a) are restricted to the peak of the breeding season, (b) are laid in the typical one egg/day sequence, and (c) are quite homogeneous in shape, hence they are not necessarily the product of two females.

On 1 March 1991 (end of breeding season), I found a nest in the Sir Colin Mackenzie Zoological Park at Healesville, southeastern Victoria. The nest contained four eggs all of which were at a

similar stage of incubation and at least six days old. It was possible to divide the eggs into two sets according to their markings and background colour. One pair (A) of eggs had a uniform dark-pink background with brown spots distributed all over the surface. The second pair (B) had a surface of very pale-pink uniformly distributed over the pointed half of the egg, without any spots, whereas the blunt half of the egg had a dark-pink background with brown spots distributed all over. These differences in egg colour suggest that they were the product of two females.

Egg shape in the Bell Miner (measured as L/B, where L = egg length in cm and B = egg breadth in cm) varies amongst females (Poiani 1992). Therefore, if one set of eggs was the product of egg dumping they may differ in shape from the second pair. The values of egg measurements were as follows. Length: $A_1 = 2.11$, $A_2 = 2.03$, $B_1 = 2.20$, $B_2 = 2.22$; breadth: $A_1 = 1.59$, $A_2 = 1.55$, $B_1 = 1.61$, $B_2 = 1.64$. The precision of the measurements was 0.01 cm and