

SHORT COMMUNICATIONS

NEST CONSTRUCTION BY THE PINK-EARED DUCK

There is agreement in the literature that the Pink-eared Duck *Malacorhynchus membranaceus* lays its eggs in a tree-hole or crotch, on top of posts, logs or stumps and in disused nests of various waterbirds in bushes or high in trees. No author has suggested that any material other than down is added to such sites or that the ducks may construct a nest of their own. I have obtained evidence that both actions occur.

In early October 1974 I flushed a pair of Pink-eared Ducks from a dense growth of Canegrass *Glyceria ramigera* near the edge of Ticehurst Swamp, Ivanhoe, western New South Wales. By searching I found a few stems of dry canegrass lodged in the base of a very thick clump of canegrass. More stems were added during the next two weeks and a thin but substantial saucer-shaped platform was formed. Growing stems of canegrass were entwined over the platform into a dome about 300–400 millimetres high. On 21 October three Pink-eared Duck's eggs were in the nest under a mound of down. Black-tailed Native-hens *Gallinula ventralis* were present and although their nests are much thicker and more solid I was not prepared at that time to rule out the possibility of appropriation of one of their nests by the ducks. This nest was later deserted, probably because traffic on the road alongside caused disturbance.

On 27 October I was wading in the same swamp about one kilometre from the water's edge in water 600 millimetres deep. I saw a pair of Pink-eared Ducks circling an isolated and rather scanty clump of canegrass and found a thin platform of canegrass in the base of this clump. On 4 November the Ducks were still near this clump. I watched them from a distance and thrice saw one of them carry stems of canegrass to the platform. Once the bird placed the stem on the platform and the other times it climbed onto the platform carrying the stem in its bill and mandibulated it into position. On 10 November the platform appeared complete. A considerable amount of down had been forced between the stems, its natural stickiness apparently holding them together and solidifying the structure. On 18 November there were six eggs under a mound of down and these all hatched.

The saucer-shaped platform was 15 millimetres thick and 220 millimetres across. It was built of recently dead, yellowish stems of canegrass up to

300 millimetres long, which had been curved or bent to form the circular nest, and was supported by stems growing slightly outwards from the base of the clump. When begun, the bottom centre of the nest was almost on the water but by hatching evaporation had left the nest some 200 millimetres above the water. It was 1.4 metres below the highest flower-head of the canegrass. Although the stems used in construction were not entwined with the growing stems of the clump the nest did not slip under the weight of the incubating bird and was not dislodged by the activities of the birds jumping onto the nest to incubate or when they covered the eggs with down before leaving. This was done with the bill while standing on the edge of the nest, the action being most reminiscent of that of the various grebes. The nest differed only from the earlier one described in not having a dome. This may have been because of the scantiness of growth at the second site because two stems were, in fact, bent and pulled over the nest suggesting that a full dome would have been woven had sufficient growth been available.

There can be no doubt that the nest was fully constructed by one or both of the Ducks and no appropriation had taken place. Native-hens did not travel far out from the shallow edge of the swamp; Coots *Fulica atra* nesting in this deeper water built volcano-shaped structures based under water; Whiskered terns *Chlidonias hybrida* and Hoary-headed Grebes *Poliiocephalus poliocephalus* built floating nests in mixed colonies; no other birds were breeding in the centre of the swamp.

On 12 October, at the same swamp, eight recently hatched Pink-eared Ducks were found in a nest in a tree-hollow. Apart from a little down there was no material in the hollow. On 27 October two fresh Pink-eared Duck's eggs were in the hollow, embedded in and partly covered by a layer of canegrass stems topped with dead leaves of the Black Box *Eucalyptus largiflorens*. On 4 November a full clutch of eight eggs was resting on the stems and leaves and covered with down. Four eggs and all the down disappeared but the other four eggs hatched by 3 December. On 26 December there were six eggs in this hollow, covered by down and resting on a replenished layer of stems and leaves covering the earlier material.

I examined eighteen nests of the Pink-eared Duck in the 1974 breeding season. Beside those already described, seven were in tree-hollows and six in

disused nests of various waterbirds. None of them showed evidence of being built or of having material added by the ducks.

Ticehurst Swamp is over four kilometres in diameter and like most canegrass swamps has only a few scattered trees and bushes on its perimeter. Such swamps are probably the most favoured habitat of the Pink-eared Duck and, should it restrict its nesting to the few sites available on the perimeter, the species would seriously reduce its breeding potential, which

it must exploit to the full when seasonal conditions allow. I imagine that few persons waded through the monotony and discomfort of a large canegrass swamp and consequently nests reported in such a locality are probably, incorrectly, few. I suggest that the ducks may build their own nests in canegrass quite often. Occasional lining of nest-hollows suggests that nest-building is an inherent activity of the Pink-eared Duck.

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MOULT OF RED-NECKED STINTS AT WESTERNPORT BAY, VICTORIA

On 29 November and 12 December 1974 seventy-eight Red-necked Stints *Calidris ruficollis* were caught with a clap-net at Stockyard Point, a wader roost holding about 500 stints on the eastern shore of Westernport Bay. Each bird was examined for its state of moult, before being dyed on the underparts and released. (This colour-marking formed part of a study of movement of waders between feeding and roosting areas on Westernport Bay.)

Moult of the primary feathers was recorded by the system in general use in Britain; its validity for passerines was discussed by Evans (1966) and for waders by Pienkowski *et al.* (in press). In this system, a feather missing or in pin is allocated a score of one and various stages of growth of the vane are allocated scores of from two to five, the last referring to a fully formed new feather. Waders have ten conspicuous primaries; thus complete replacement of feathers in one wing would score 50.

Of the seventy-eight Stints examined, all but fifteen were moulting some primary feathers and so were probably at least one-year old. All were in grey non-breeding plumage, with tips of the primary feathers abraded, sometimes markedly so. Probably, therefore, the fifteen non-moulting birds were also 'adults', and indeed three of them had retained a few feathers of the reddish brown breeding plumage among their scapulars, so were definitely more than one-year old. The distribution of moult scores of all birds is shown in Table I.

TABLE I
Moult scores of Red-necked Stints at Westernport Bay

Moult score of right wing	0	1	6	11	16	21	26	31	36
		/	/	/	/	/	/	/	/
		5	10	15	20	25	30	35	40
Number of birds	15	18	5	3	15	6	4	10	2

Even with this quite small sample, the presence of three types of moulting birds may be inferred: (1) a group that had just begun to moult in late November, (2) another that had reached almost half-way through the moult and (3) sixteen individuals with moult scores greater than 26. All birds in this last group had undergone 'arrested moult'. This refers to replacement of only some primaries at any one moulting period or place and may be recognized by the presence of a block of fully grown, new feathers adjacent to a block of old feathers or separated from the old feathers by a single feather in the early stages of growth. Of the sixteen that showed arrested moult, four had replaced five feathers, ten, six feathers and two, seven feathers before moult stopped. All had just begun their moults again and had the next primary missing or in pin.

These results may be compared with those of Thomas and Dartnall (1971) who examined nearly 100 Red-necked Stints between September 1967 and April 1968 near Hobart, Tasmania. Unfortunately their data included only small samples of birds from any one day; so they presented them as a scatter diagram of moult score against date. From this they concluded that from start to finish the moult took just over three months on average. They also calculated, by subtracting an average rate of growth from the score on a given date, that moult of the primaries in different individuals began between 21 August and 8 December. Although they noted the possibility of arrested moult of the body feathers of a few individuals caught in September (because these birds were in transition between breeding and non-breeding plumage but not in active moult), they made no mention of arrested moult of the primary feathers. Such a phenomenon would invalidate the method they used to estimate the dates on which birds had started moult. In 1974, it occurred in about twenty per cent of the birds I examined.