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Suspected intraspecific egg dumping in the White Ibis (*Eudocimus albus*).—Bird colonies may present a favorable environment for brood parasitism, as large numbers of synchronously nesting conspecifics are available as potential hosts (Hamilton and Orians 1965, Payne 1977). *Intra*specific nest parasitism (i.e., egg dumping), however, has been reported in only a handful of colonially nesting birds (Yom-Tov 1980; Fox and Boersma 1983; Brown 1984; Fetterolf and Blokpoel 1984; Emlen and Wrege 1986). Cannell and Harrington (1984) reported *inter*specific nest parasitism by a Great Egret (*Casmerodius albus*) and Black-crowned Night-Herons (*Nycticorax nycticorax*) at a mixed-species heronry and suggested that a low level of inter- and intraspecific nest parasitism may exist in wading birds (Ciconiiformes). A single presumed instance of nest parasitism by a Maguari Stork (*Euxenura maguari*) reported by Thomas (1984) is, to our knowledge, the only published account of *intra*specific nest parasitism in the Ciconiiformes. Here we provide evidence of the occurrence of this behavior in White Ibises (*Eudocimus albus*).

We studied White Ibises at 2 colonies. Battery Island is a 40-ha National Audubon Society sanctuary near the mouth of the Cape Fear River, Brunswick County, North Carolina (33°54′N, 78°01′W), where ibises nest in a 7-ha maritime shrub thicket (Shields 1985). Peak nest numbers were 3737 in 1983 and 4849 in 1984. Pumpkinseed Island is an 8.9-ha colony in Winyah Bay, Georgetown County, South Carolina (33°16′N, 79°12′W), where ibises nest on a dense mat of black needlerush (*Juncus roemarianus*) (Frederick 1985). Peak nest numbers were 7814 in 1982 and 10,035 in 1983.

At Battery Island, 262 ibis nests in 1983 and 493 nests in 1984 were examined every 3–4 days from the onset of egg laying until chicks left their nests. Eggs were individually marked with indelible ink. At Pumpkinseed Island, 42 nests in 1982 and 71 in 1983 were checked (eggs counted, but not marked) at 10:00 every day from the onset of nest building through the apparent completion of clutches (more than three consecutive days without new eggs). Over 15,500 pair-hours of intensive observation from a blind were performed on Pumpkinseed during the egg-laying period.

Nest parasitism was never witnessed during these observations. We did, however, obtain circumstantial evidence of parasitism based on deviations from a normal egg-laying schedule. White Ibises usually lay eggs every other day (Bent 1926, Rudegeair 1975), and lay from two to four eggs in a clutch. Their eggs are easily distinguished from those of other species nesting on the two study sites. Three types of evidence of nest parasitism were obtained: (1) two eggs appearing in a nest on the same day, (2) a new egg appearing in a nest on each of two consecutive days, and (3) new eggs appearing after apparent clutch completion.

On Battery Island, nest checks were too infrequent to detect type 1 and 2 evidence, but type 3 evidence was noted twice in 1983 and 6 times in 1984. The mean interval between presumed clutch completion and the appearance of the suspected parasitic eggs was 11.7 ± 4.8 days [SD]. None of the apparently parasitic eggs hatched, probably because they had an incomplete incubation period. On Pumpkinseed Island, one case of type 2 evidence was found in 1982, and two cases each of type 1 and 2 evidence were noted in 1983. No type 3 cases were detected on Pumpkinseed, as nests there were not checked after apparent clutch completion. The fates of parasitic eggs on Pumpkinseed were not followed, but these eggs would have had normal incubation periods.

Because no birds are known to lay more than one egg in a single 24-h period (Sturkie 1965), type 1 evidence is the most conclusive circumstantial evidence of nest parasitism. Type 2 cases may represent instances in which nest owners laid eggs in a shorter than usual interval. However, if nest parasitism did occur, type 1 and 2 evidence should have been noted in roughly equal proportions unless the laying periods of hosts and parasites were

always exactly synchronous. Type 3 evidence could be interpreted as nest owners laying late eggs. However, the long time span between the apparent completion of clutches and the appearance of the late eggs indicates that these cases represent instances of nest parasitism. The appearance of late eggs in nests at Battery Island was not preceded by egg loss, thus ruling out the possibility that the late eggs were replacements.

The evidence from both colonies suggests that a low level of intraspecific nest parasitism occurs in the White Ibis. Parasitic females did not always seem to be aware of the hosts' egg-laying period as the parasitic eggs detected at Battery Island were laid far too late to be incubated adequately by the hosts.

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A case of brood mixing by Common Loons.—Common Loons (*Gavia immer*) are strongly territorial when rearing chicks (McIntyre 1975), and there is only one previous report of brood mixing in this species. Eckstein (1980) reported the successful fostering of a Common Loon chick by a pair with their own chick after a second chick was introduced by humans. We report here the details of a natural case of brood mixing by Common Loons.

In 1984, we monitored 16 territorial pairs of Common Loons on three lakes in northern Maine during nesting and chick rearing. On 1 and 2 August, RS observed a 3-chick brood in the traditionally used nursery area of the Boody Cove (BC) pair on Grand Lake Seboeis. The nest had 2 eggs and on 25 July, 2 chicks were seen. The 2 adjacent pairs, Coomb's Cove (CC) and Wadleigh Cove (WC), also had 2-egg nests that hatched successfully. On 25 July, one chick was present in WC and 2 were in CC. On 1 August, there were 2 chicks in CC, 3 in BC, and none in WC. The brood in BC was reduced to 2 chicks by 4 August and to one by 6 August. The CC brood remained at 2 chicks and none were seen in WC after 25 July.

All 3 BC chicks followed the attending adult as it swam slowly in the nursery area. The other adult was absent during observations on both days. We estimated the chicks to be 1–2 weeks old based on hatching dates, size, and plumage characteristics. We observed no aggression among the chicks or between the chicks and the adult. One of the chicks was seen riding on the adult's back on 1 August.

The chronology of chick numbers in adjacent territories suggests that a chick from the WC territory moved into the BC nursery area. The nurseries of the 2 territories were separated by 3 km, an extreme movement for a young loon. The WC chick may have been blown across the lake by the wind (cf. Sjolander and Agren 1976) or may have followed the adults during a territorial encounter and wandered into BC. There were no human residents on the lake and we do not believe the chick was moved by humans.

Common Loons should experience strong selection against acceptance of chicks from other broods because there is little possibility of relatedness. The probability of brood mixing, however, is low due to distances between nurseries (McIntyre 1983), limited movements of chicks, and strong territorial defense; and there has probably been little opportunity for natural selection to operate on chick recognition. Other gaviids also accept strange chicks (Abraham 1978, Dymond 1982).

To our knowledge, this is the first published report of natural brood mixing by Common Loons. We believe brood mixing is an unusual occurrence for gaviids and that acceptance of chicks is facilitated by a lack of selection pressure on chick recognition.

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