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Evidence of nest parasitism in Mottled Ducks.—Intraspecific nest parasitism, which is the fostering of one or more eggs into the nest of a conspecific, is widespread in waterfowl (Yom-Tov 1980, Eadie 1991). Intraspecific nest parasitism is most common among cavity nesting waterfowl and waterfowl that nest in colonies (Rohwer and Freeman 1989). In contrast, it is rare in solitary, upland-nesting waterfowl, including most Anatini (Eadie et al. 1988, Rohwer and Freeman 1989), except when they nest in high densities (e.g., Drewien and Fredrickson 1970, Titman and Lowther 1975, Hines and Mitchell 1984). Dense-nesting situations may facilitate parasitism by reducing the time, energy, and risk associated with finding host nests (Rohwer and Freeman 1989). Some authors (e.g., Jones and Leopold 1967, Erskine 1990) have suggested nest parasitism may also occur as a consequence of nest site competition when waterfowl nest in high densities. However, parasitism persists in cavity nesting ducks when nest sites are abundant (Semel and Sherman 1986) and evidence for nest site competition in non-cavity nesting waterfowl is equivocal (Rohwer and Freeman 1989). Intraspecific nest parasitism has been documented for only six species of Anatini from North America: Northern Shoveler (*Anas clypeata*), Green-winged Teal (*A. crecca*), Cinnamon Teal (*A. cyanoptera*), Mallard (*A. platyrhynchos*), American Black Duck (*A. rubripes*), and Gadwall (*A. strepera*) (reviewed in: Eadie et al. 1988, Rohwer and Freeman 1989, Sayler 1992). Here we report the first evidence of intraspecific nest parasitism in the Mottled Duck (*A. fulvigula*).

We found 132 Mottled Duck nests during searches of six islands in the Atchafalaya Delta Wildlife Management Area (29°26′N, 91°20′W), Saint Mary Parish, Louisiana, during March through August 1994. When we found a nest, we estimated incubation stage (Weller 1956) and individually marked all eggs. Newly laid eggs were marked on subsequent nest checks and incubation stage was estimated again. Incubation period for Mottled Ducks was assumed to be 26 days (Stutzenbaker 1988).

We found four cases of apparent nest parasitism. (1) On 8 April, we found a nest containing 12 eggs, which we estimated at 19 days incubation. On 16 April, the nest contained several recently hatched eggs and one unhatched egg. We opened the unhatched egg, which contained a 15 day-old embryo (Caldwell and Snart 1974). We believe that this was a nonterm egg (an egg laid after the onset of incubation, Morse and Wight 1969) and not an

embryo that died during development, because it had not deteriorated. (2) On 16 April, we found a laying stage nest containing 10 eggs. The nest contained 15 eggs on 29 April. Four of these eggs clearly differed in color from the rest of the clutch and were estimated to have been incubated ≤four days. Egg color difference can accurately distinguish parasitic eggs in some birds (Lyon 1993) and has been used to identify parasitic eggs in waterfowl (Jones and Leopold 1967). Egg color difference, together with an approximate eight day difference in incubation stage, suggests that the four eggs were laid by a hen other than the host. On 12 May, the nest contained 10 ducklings and eight unpipped eggs. Seven of the unhatched eggs differed in color from shells of the hatched eggs. The large clutch size (18 vs typical range of 8–13 eggs, Stutzenbaker 1988) was further evidence of nest parasitism. (3) On 7 May, we found a nest containing 12 eggs, most of which had 12-day-old embryos. Three eggs, however, differed in color from the others and were 5–10 days less developed. On 18 May, there were hatching movements (≥23 days of incubation) in all eggs except the three differently colored eggs. On 25 May, there was evidence of hatched eggs, but no intact eggs remained in the nest. (4) On 6 July, we found a laying stage nest containing six eggs. It contained nine eggs on 20 July, one of which was a different color and was unincubated (≤3 days, Weller 1956). On 30 July, the nest still contained nine eggs, several of which had hatching movements, but the off-color egg's incubation stage was 11 days. An 8 August nest check revealed evidence of hatched eggs, but two unhatched eggs remained, one of which was the egg of different color.

All four cases of suspected parasitism occurred on one 22-ha island, where most (N = 82) nests were found. The estimated parasitism rate (minimally 5%) on this island was similar to other studies of island nesting Anatini (Rohwer and Freeman 1989). We were unable to estimate nest densities because we did not systematically search islands. However, during March and April, areas searched on islands were approximately equal and twice as many nests were found on the 22-ha island as on all other islands combined. Three of the other islands were >40 ha. The other two were <20 ha and were often flooded. Failure to detect parasitism on other islands may reflect smaller samples of nests or lower nest densities.

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Eight new host species for the parasitic blow fly genus *Protocalliphora* (Diptera: Calliphoridae).—Larvae of *Protocalliphora* blow flies (Diptera: Calliphoridae) are obligate hematophagous parasites that reside in nests of birds with nidicolous young where they intermittently attach to the nestlings to feed. Only one species of *Protocalliphora*, *P. braueri*, is known to be an obligate subcutaneous parasite (Sabrosky et al. 1989). *Protocalliphora* blow flies appear to have little host specificity (Bennett and Whitworth 1992), and, with the exception of birds whose nest structure is not conducive to blowfly retention and development (e.g., loosely arranged stick nests, very wet nests), eventually all nidicolous bird species within the range of these blow flies are likely to be recorded as hosts (Sabrosky et al. 1989).

During a three-year study of interactions between *Protocalliphora* blow flies and Neotropical migratory bird species, bird nests were collected from study plots in Arkansas in the Ozark National Forest, in 1991, 1992, and 1993, and from the Ouachita National Forest in 1993. In Idaho, nests were collected during 1992 and 1993 from Targhee National Forest. Nests were located and monitored following the protocols detailed in Martin and Geupel (1993). When the nests were no longer active (i.e. after fledging, death, or depredation), they were collected in plastic bags, taken to the laboratory, and searched for *Protocalliphora* larvae and pupae. Larvae were collected from nestlings and fledglings whenever noted. The larvae and pupae were reared to maturity and identified using the taxonomic key provided