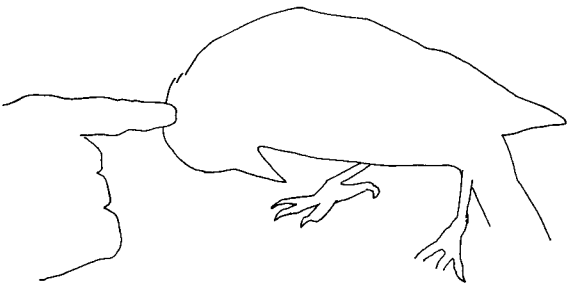

Figure 1. Giant Cowbird in preening invitation display directed towards a human hand, traced from a photograph taken at the Fort Worth Zoo.

years and had been imported from Central America; in this time neither he nor others were known to preen the bird or to otherwise reward the displaying bird by feeding it when it performed. J. S. Weske tells me that in Peru local people raise young oropendolas and caciques from the nest to sell alive at the markets. Inasmuch as these icterids are common hosts of the Giant Cowbird, possibly the zoo cowbird was similarly reared by hand and then, in the absence of hosts or host-like birds, redirected the host-appeasing preening display from its usual object to man. As the display is given both in late autumn and in spring it is probably not dependent upon breeding condition; year-round preening display of wild Brown-headed Cowbirds (*Molothrus ater*) has also been noted (Selander and La Rue, op. cit.).—ROBERT B. PAYNE, *Department of Zoology, University of Oklahoma, Norman, Oklahoma 73069.*

Mallard hatching from an egg cracked by freezing.—The eggs of early-nesting waterfowl in North Dakota are frequently exposed to subfreezing temperatures. Mallards (*Anas platyrhynchos*) and Pintail (*Anas acuta*), normally the first ducks to arrive in the spring, begin limited early nesting in mid-April. Nighttime temperatures during this period frequently drop below freezing, and late spring blizzards are not unusual.

From 15 to 17 May 1967 the Northern Prairie Wildlife Research Center conducted a survey to evaluate the use of elevated nesting structures by ducks in the central Missouri Coteau of eastern North Dakota. Of the 64 available nesting structures examined, 23 contained mallard nests, 5 of them with 1 or more eggs cracked by freezing. Although the crack in each extended from end to end, the extent to which the interior of the egg was frozen is not known. One of these nests contained 6 eggs, 2 of which were frozen. On 13 June this nest contained 10 eggs, 4 of which, including 1 previously noted as frozen, were star-pipped. The following morning 5 ducklings had hatched, a 6th was emerging from the frozen egg (Figure 1), and 4 eggs remained intact. No abnormalities were noted in any of the ducklings at the time of hatching. Of interest is the fact that the frozen egg was the last to hatch but was at the most advanced stage of pipping on the preceding day. The shell was collected, and later examination showed that freezing had not ruptured the shell membrane. A final check of the structure on 20 July showed four addled eggs remaining from the original nesting attempt. None of the frozen eggs in the other nests hatched.

By backdating from the hatching date, using 26 days for the Mallard incubation period (Kortright, 1942) and assuming one egg was laid each day, laying was calculated to have started about 10 May. May 1967 was the coldest May recorded in

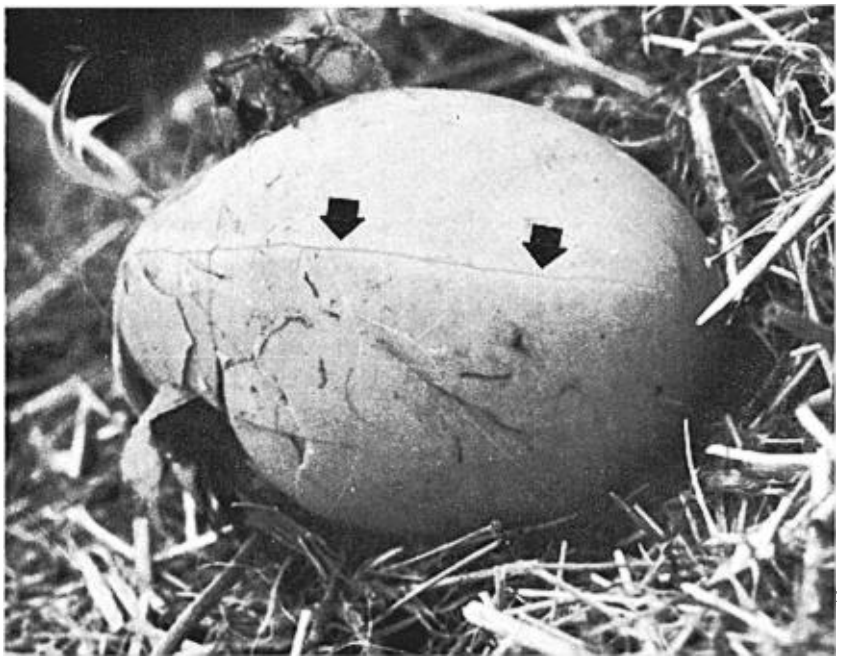

Figure 1. Mallard duckling emerging from egg that had been frozen. Arrow points to freeze crack.

40 years at many reporting stations in North Dakota. Minimum temperatures recorded from 10 through 15 May at Jamestown, North Dakota, 20 miles east of the nest site, were 33°, 32°, 28°, 38°, 32°, and 31°F respectively (U. S. Dept. Commerce, 1967).

Moran (1925) reported that the fertility of a chicken egg was lost quickly when the internal temperature reached 32°F. Freezing does not always destroy the germinal tissue. Jull et al. (1948) reported high success hatching chicken eggs that were held at −1°F for 10 hours prior to incubation and in which the internal temperature decreased to approximately 30.2°F. They also reported hatching 10 per cent of 50 chicken eggs exposed to −20°F for 9 hours. Many of the eggs were cracked by freezing. Moreng and Bryant (1954) demonstrated that exposure of fertile chicken eggs to cold reduced the viability most when exposure occurred prior to incubation or immediately preceding hatching. Least damage resulted when exposure occurred during the first 2 days of incubation.

The extent to which exposure to subfreezing temperature affects the eggs of wild waterfowl is unknown. The presence each year of early broods indicates that some eggs may survive such exposure. Obviously nest site selection is important in providing protection and insulation for the eggs, but evidently few clutches laid before freezing weather ends survive to hatching, as most broods can be backdated to eggs laid after the last freeze.

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Sage Thrasher and other unusual birds in north-central Florida.—In the winter of 1968–69 several species previously considered as rare or of irregular occurrence by O. L. Austin, Jr. (*in* Frank M. Chapman in Florida (E. S. Austin, Ed.), Gainesville, Univ. Florida Press, 1967, p. 188) were noted in the Gainesville region of Florida. This influx of birds probably was associated with the severe winter conditions to the north and west of the state. Intensive field work from November through January revealed the following unusual birds:

Red-breasted Nuthatch (*Sitta canadensis*).—Previously unrecorded at Gainesville, a bird of this species was attracted to a tape-recorded song of a Screech Owl on 30 November 1968 by Charles Yarbrough and the writer. On 17 December in a mist net at the edge of a pine forest we caught a male that we banded and released.

Winter Wren (*Troglodytes troglodytes*).—Yarbrough and I saw one of these wrens in shrubbery on the University of Florida campus on 17 and 18 December. In a mesic hammock 5 miles away, I collected a female on 1 January 1969, the first specimen record for this part of the state.

Golden-crowned Kinglet (*Regulus satrapa*).—Although this kinglet has been previously found irregularly in northern Florida, the occurrence of numerous small flocks in November and December indicated a marked increase in numbers over previous years. At scattered sites around Gainesville we studied flocks of 2 to 6 birds on at least 10 occasions; I collected a male on 15 December in second-growth oak woods.

Evening Grosbeak (*Hesperiphona vespertina*).—L. J. McCaulley, familiar with the species in New Jersey, reported an unmistakable male at a feeding station in Gainesville on 8 January 1969. William T. Walker found a dead male on 13 February in Gainesville; this specimen is now in the Florida State Museum. Other birds, frequently in flocks, were seen through the spring, as late as 27 April. These records apparently constitute the species' southernmost occurrences in Florida.

Purple Finch (*Carpodacus purpureus*).—In most winters this species, like the kinglet mentioned above, is an uncommon bird. Throughout December and January numerous flocks, sometimes containing as many as 25 birds, were seen at scattered locations throughout Alachua County. A few remained until 14 April.

Pine Siskin (*Spinus pinus*).—This rare species was first noted on a cold, windy day (23 December) when two birds were seen feeding with American Goldfinches (*S. tristis*) in the tops of sweet gum trees. A female was taken on 1 January and others were observed infrequently throughout January. Pine Siskins have not been recorded here since 1890.

Slate-colored Junco (*Junco hyemalis*).—Also a bird of uncommon and irregular occurrence, individuals and small flocks were seen commonly in December and January.

On 11 January Yarbrough, Bill Colson, Jim Johnston, and the writer were netting