

bird was shot it fell to the ground crippled and called loudly; 10 or 11 other Long-billed Curlews immediately flew in and began circling us crying constantly. We obtained the second bird from this "mobbing" flock (cf. Bent, U. S. Natl. Mus., Bull. 146: 105, 1929). Both birds' stomachs were empty, but in the esophagus of one curlew just a few millimeters from its stomach was an altricial nestling that measured 51 mm T.L., apparently a fringillid and probably a Lark Bunting (*Calamospiza melanocorys*), many of which were nesting in the vicinity. In one of the few sources of information on Long-billed Curlew food habits, Wickersham (Auk, 19: 353, 1902) mentions many types of invertebrates as commonly consumed, but toads are the only vertebrates he lists.

When Long-billed Curlews first return to their upland breeding habitats, their diets may be rather different than reported in the literature. The species usually begins nesting in May and June. Snowdrifts were present on the prairies of Harding County as late as 7 June 1967. I saw no insects there in early June and relatively few 25 June, but I heard many chorus frogs (*Pseudacris triserata*) and saw many ground nesting fringillids. Like its congener, the Common Curlew (*N. arquata*) (cf. Hibbert-Ware and Ruttledge, Brit. Birds, 38: 22, 1944), the Long-billed Curlew is doubtless an opportunist consumer of a wide variety of animal foods. Its diet in upland habitats could be expected to include small frogs, nestling birds, and possibly small mammals.—RICHARD L. TIMKEN, *Department of Zoology, University of South Dakota, Vermillion, South Dakota 57069. Present address: Department of Biology, Minot State College, Minot, North Dakota 58701.*

Giant Cowbird solicits preening from man.—Harrison (Auk, 80: 373, 1963) describes an interspecific preening invitation display of the Giant Cowbird, *Psomocolax oryzivorus*, similar to displays given by several other species of cowbirds described by Selander (Auk, 81: 394, 1964) and Selander and La Rue (Auk, 78: 473, 1961). In these displays the cowbird solicits preening of the nape by another bird, usually a potential host species and never another cowbird. This behavior has also been reported in the field for the Giant Cowbird by Chapman (Bull. Amer. Mus. Nat. Hist., 58: 123, 1928); in two instances a female cowbird bowed the head and presented the erected nape feathers to a host oropendola (*Zarhynchus wagleri*) at the nest.

A captive, solitary male Giant Cowbird in an aviary at the Fort Worth Zoo, Fort Worth, Texas, performs the same behavior towards humans. I first saw the bird 26 November 1867. As people walked past the cage the bird watched them from his perch, but when anyone stopped in front of the cage the bird flew down to the floor of the cage, erected and ruffed out the nape feathers, bowed the head forward, tucked the bill back nearly to the breast, and sidled as close as possible to the visitor. As the bird appeared to be soliciting preening of its nape I poked a finger through the wire screen and tried to scratch the bird's head. The cowbird maintained his bow, bent farther forward, and erected the nape feathers at nearly right angles from the body as I rubbed his head (Figure 1). A finger withdrawn and inserted a few feet to the side brought the cowbird shuffling to it in the bowed posture; a finger inserted through the screen 5 feet above the bird induced the cowbird to climb up to it and bow. Pencils made the bird retreat but fingers attracted it. In one preening session I scratched the bird for more than a minute while it remained in an apparent state of euphoria, and the bird solicited more preening when I stopped. I visited it again 13 April 1968 and noted the same behavior; on this day I watched the cowbird solicit nine times to other people in one hour, but no one responded.

The keeper of birds informed me that the cowbird had been in the zoo for about 3

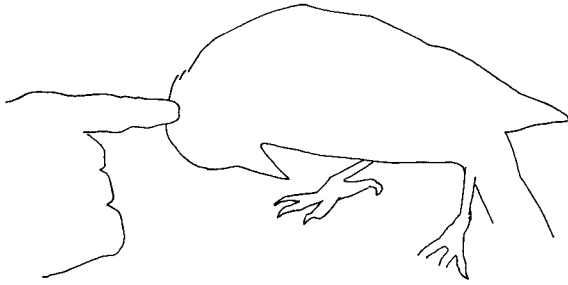


Figure 1. Giant Cowbird in preening invitation display directed towards a human hand, traced from a photograph taken at the Fort Worth Zoo.

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