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COWBIRD EGG BURIED BY A NORTHERN ORIOLE

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Abstract.—A newly constructed Northern Oriole (*Icterus galbula*) nest collected on 9 June 1985 contained one Brown-headed Cowbird (*Molothrus ater*) egg 80% buried in the 3-cm thick lining of grass and cottonwood down. The nest contained no oriole eggs. Burial as a defense by Northern Orioles against cowbird parasitism has been noted only once, despite careful checking of over 400 nests. Orioles may eject cowbird eggs laid during egg-laying or incubation and bury eggs only when they are laid during nest-building. It is unclear whether burial is in response to the cowbird egg or a continuation of nest-building. Of 136 oriole nests examined only 3 (2.1%) were parasitized.

HUEVO DE TORDO (*MOLOTHRUS ATER*) ENTERRADO EN EL FONDO DEL NIDO DE UN ORIOL (*ICTERUS GALBULA*)

Sinopsis.—En un nido fresco del oriol *Icterus galbula,* coleccionado el 9 de junio de 1985, en el cual la hembra todavía no había aovado, se encontró un huevo de tordo (*Molothrus ater*) casi totalmente enterrado (80% de este). El enterrar huevos de tordo por parte de este oriol, como defenza al parasitismo reproductivo, se había informado previamente en tan sólo una ocasion. El patrón de conducta parece ser sumamente raro (mas de 400 nidos estudiados). No se determinó si el huevo de tordo fue cubierto como parte de un mecanismo de defenza o incidentantalmente durante el proceso normal de construcción de nido. De un total de 136 nidos de oriol estudiados, tan solo 3 (2.1%) resultaron estar parasitados.

Rothstein (1977) experimentally added artificial eggs of the Brown-headed Cowbird (*Molothrus ater*) to Northern Oriole (*Icterus galbula*) nests, and demonstrated that this oriole species rejects the eggs of this brood parasite, often within minutes of laying (see also Friedmann et al. 1977). Rejection usually involves the ejection of the parasite's eggs (Rothstein 1977, Smith 1972) which may account for the low incidence of parasitism reported in this and other rejector species (e.g., Friedmann 1963, Friedmann et al. 1977, Friedmann and Kiff 1985, Scott 1977, but see Hanka 1984, Murphy 1986). In some species rejection involves burying the cowbird's egg and often some of the host's eggs under a new nest lining (Clark and Robertson 1981, Friedmann 1963). We are aware of only one record of egg burial, apparently in response to cowbird parasitism, in the Northern Oriole (Parshall 1884). We provide another record of egg burial in this species and document the low incidence with which cowbird parasitism is detected in a population of Northern Orioles that nests in the dune-ridge forest (see description in MacKenzie 1982), Delta Marsh, Manitoba.

On 9 June 1985, we collected a Northern Oriole nest from a box elder (*Acer negundo*) that had blown down the previous day. The newly constructed nest contained no oriole eggs. Upon cutting open the nest we found one cowbird egg in the 3-cm thick nest lining, which consisted of grass and cottonwood down. About 20% of the cowbird egg remained

exposed in the bottom of the nest. This egg may have been laid before the oriole's nest was completed and so it is not clear whether burial was in response to the egg or simply was a continuation of nest building. Emlen (1941) found that if eggs or young were introduced into unfinished Tricolored Blackbird (*Agelaius tricolor*) nests, normal nest-building behavior was not interrupted. Rothstein (1986) recently suggested that egg burial behavior by Eastern Phoebes (*Sayornis phoebe*) in response to experimentally-introduced cowbird eggs was due to a continuation of the nest-building instinct. He also found that Northern Orioles consistently ejected cowbird eggs during the egg-laying and incubation periods, but he did not test nests that were being built (Rothstein 1977). Hardy (1970) reported one instance of a Hooded Oriole (*I. cucullatus*) constructing a duplex nest, apparently in response to cowbird parasitism prior to the initiation of the oriole's clutch.

Egg burial is detected only if nests are cut open and examined closely. We have done this for only a few nests on our study site. However, Schaefer (pers. comm.) found no buried eggs in almost 300 nests of the Northern Oriole he examined in his study of geographic variation in size and structure of oriole nests (Schaefer 1976).

The incidence of detected parasitism by cowbirds on Northern Orioles is low in the dune-ridge forest. Of 136 nests examined with a hand-held mirror every 1–3 d during egg laying from 1975 through 1985, only 3 (2.1%) were parasitized. One nest, in 1980, was destroyed before the outcome of the parasitism could be determined. In 1977, a nest contained 6 eggs on 6 June, and 5 eggs plus 1 cowbird egg on 8 June. The contents remained the same until at least 11 June, but by 13 June the cowbird egg was gone. Thus, the cowbird egg remained in the oriole's nest for at least 3 d. Another nest in 1977 contained 4 oriole eggs and 1 cowbird egg on 11 June, and 5 young, including the cowbird, on 22 June, when all of the young were banded. By 25 June, the nest was empty. Presumably the young had fledged. The orioles were 8–9 d old when banded, and the plumage development of the cowbird suggested it was of similar age. This appears to be a record of Northern Orioles rearing a young cowbird, as well as nestlings of their own, and is one of only a few such records (see Friedmann 1963, Friedmann et al. 1977, Nauman 1930).

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