

THE INCIDENCE OF NEST PARASITISM BY THE BROWN-HEADED COWBIRD (*MOLOTHRUS ATER*) ON ROADSIDE NESTING BIRDS IN NEBRASKA*

GARY L. HERGENRADER

ALTHOUGH many cases of nest parasitism by cowbirds have been reported from Nebraska, studies of the incidence of parasitism are few. During the summer of 1960 the University of Nebraska Agricultural Experiment Station, in cooperation with the Nebraska Game, Forestation, and Parks Commission, conducted a survey to determine utilization of roadsides for nesting by upland game birds. The nature of the survey was such that it enabled the investigators to keep accurate records of the songbird nests encountered during the field work. Thus it was possible to determine the degree of parasitism on species such as the meadowlark (*Sturnella* species), Dickcissel (*Spiza americana*), Red-winged Blackbird (*Agelaius phoeniceus*), Brown Thrasher (*Toxostoma rufum*), and Mourning Dove (*Zenaidura macroura*), which are commonly found nesting in the roadsides of Nebraska.

SURVEY AREA

The survey area consisted of 560 km (338 miles) of roadside in 13 counties located in eastern and south-central Nebraska. Forty km of roadside were searched within each county.

PROCEDURE

The search was conducted by three men walking abreast through roadside ditches. All vegetation growing on the roadsides was thoroughly searched. Only nests found on the ground and in the vegetation to a height of approximately two meters were considered.

RESULTS

Of 172 nests located, the most numerous, 59, were those of the Red-winged Blackbird. Forty-eight Mourning Dove, 31 meadowlark, 17 Dickcissel, and 17 Brown Thrasher nests were also found.

Red-winged Blackbird nests. The Red-winged Blackbird was found nesting in a wide variety of habitats. Most of the nests were found in wild plum (*Prunus americana*) brush. Usually several females were found nesting in the same patch of wild plum. Frequently nests were discovered in flooded roadside ditches where they were constructed among the stems or branches of rigid-stemmed plants. In all cases, the nests were in the open and well exposed to light.

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Of the 59 Red-winged Blackbird nests examined, 54.2 per cent were parasitized and contained from one to three cowbird eggs each. Berger (*Wils. Bull.*, 63: 26-34, 1951) examined 99 Red-winged Blackbird nests in Michigan, only 5 per cent of which were parasitized. It is evident from these figures that the Red-winged Blackbird constitutes a major host species for the cowbird in the Nebraska survey area, whereas in Michigan, in the area surveyed by Berger, its status as a cowbird host is insignificant.

Dickcissel nests. The Dickcissel almost invariably was found nesting in smooth brome grass (*Bromus inermis*). Of the 17 nests located, 52.9 per cent contained from one to three cowbird eggs each. Friedmann (*The Cowbirds*, 231, 1929) states that there are about a dozen cases on record of parasitized Dickcissel nests with very little data published on any of these cases. Our data suggest that the Dickcissel constitutes a major host species for the Brown-headed Cowbird in Nebraska.

Meadowlark nests. Meadowlark nests were located only when the birds flushed ahead of the advancing men. The nests were extremely well hidden in the grass but were exposed to considerable light. The coloration of the females made it virtually impossible to see them on the nests. Five of the 31 nests found (16.1 per cent) contained from one to four cowbird eggs each. No effort was made to distinguish between the Eastern and Western Meadowlark. Since their ranges overlap, the nests found probably consisted of those of both species.

According to Friedmann (*op. cit.*, 213) meadowlarks are rather uncommon hosts. In the area of Nebraska surveyed, the cowbird parasitized the meadowlarks more frequently than Friedmann found in his study. However, it utilizes the nests of meadowlarks less commonly than those of the Red-winged Blackbird and Dickcissel. In several instances, cowbird eggs were discovered near the nests. Apparently the meadowlark is sometimes successful in expelling the eggs from the nest.

Brown Thrasher nests. The Brown Thrasher is a very uncommon victim of the Brown-headed Cowbird; only seven cases of parasitized nests are on record, according to Friedmann (*op. cit.*, 253). Of the 17 Brown Thrasher nests examined in this investigation, none contained cowbird eggs. All of the nests were in the interior of wild plum brush or Osage orange (*Maclura pomifera*) hedges where the light intensity was low. The lack of light may possibly be one of the reasons that the Brown Thrasher is so infrequently parasitized. Friedmann (*op. cit.*, 191) reports that cowbirds prefer nests that are built in the open.

Mourning Dove nests. Forty-eight Mourning Dove nests were located, none of which contained cowbird eggs. Several nests were found on the ground and consisted of depressions scantily lined with plant material; the

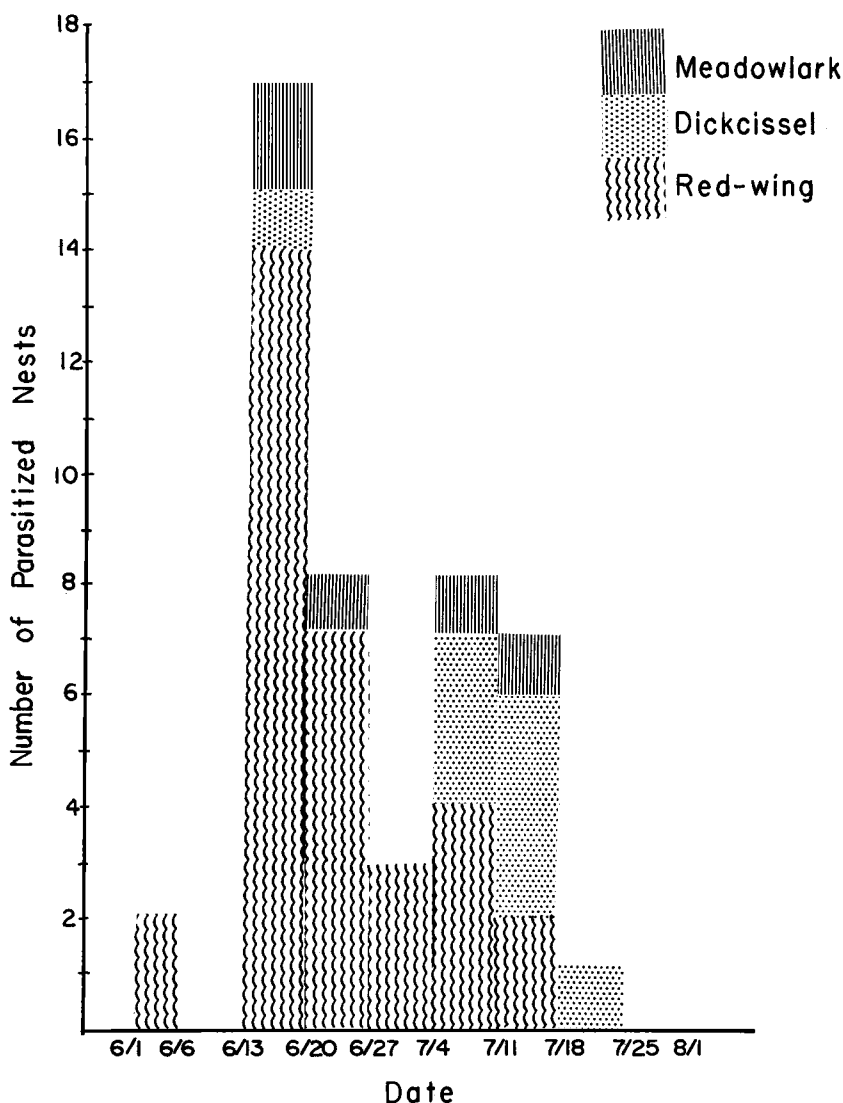


Figure 1. Number of parasitized nests of each species found weekly.

majority of the nests, however, were found in small trees, plum brush, and Osage orange.

The Mourning Dove appears to be an unfavorable host for the Brown-headed Cowbird, possibly because (1) the eggs would not receive enough heat during incubation due to the size difference between cowbird and dove eggs; (2) feeding of the young is different from the normal host

method, that is, the young dove thrusts its bill inside the mouth of the parent whereas in normal hosts the parent thrusts its bill down the throat of the young; (3) the pigeon milk fed to young doves is quite different from the usual food of young cowbirds.

Number of cowbird eggs per nest. After his thorough study, Friedmann (*op. cit.*, 178–180) concluded that “the normal, the usual, the characteristic thing is for a Cowbird to deposit one egg in a nest.” In this survey only 15 of the 32 parasitized nests of Red-winged Blackbirds contained one cowbird egg. Three of the parasitized Dickcissel nests contained only one cowbird egg while six contained more than one. Four of the five parasitized meadowlark nests contained only one cowbird egg.

Laying period. Figure 1 shows the laying period for the Brown-headed Cowbird. The individual segments of each bar represent the number of parasitized nests of each species found weekly during the survey period. Time in the field was divided equally among the periods shown.

SUMMARY

A total of 560 km (338 miles) of Nebraska roadsides were searched for bird nests during the summer of 1960 in an effort to determine the incidence of nest parasitism by Brown-headed Cowbirds on the birds that commonly nest along the road. Of the 172 nests located, 59 were those of the Red-winged Blackbird; 48, Mourning Dove; 31, meadowlark; 17, Dickcissel; and 17, Brown Thrasher.

Fifty-four per cent of the Red-winged Blackbird nests were parasitized. Of the Dickcissel nests located, 53 per cent were parasitized as were 16 per cent of the meadowlark nests. No parasitized nests of either the Brown Thrasher or Mourning Dove were found.

Fifteen of the 52 parasitized Red-winged Blackbird nests contained one cowbird egg. Three of the nine parasitized Dickcissel nests and four of the five parasitized meadowlark nests contained only one cowbird egg. The greatest number of cowbird eggs found in any one nest was four in a meadowlark nest.

Department of Zoology, University of Nebraska, Lincoln, Nebraska.