

# Short Communications

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## First Record of Bronzed Cowbird Parasitism on the Great-tailed Grackle

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**ABSTRACT.**—We report the first record of Bronzed Cowbird (*Molothrus aeneus*) parasitism on the Great-tailed Grackle (*Quiscalus mexicanus*), which represents the 96th known host for this cowbird species. The record is based on a parasitized clutch, collected from Sinaloa, Mexico, in the collection at the Western Foundation of Vertebrate Zoology. The clutch contained four grackle eggs and one Bronzed Cowbird egg. This record is unusual because the Great-tailed Grackle is extremely intolerant of foreign eggs, ejecting them from their nests almost immediately. As the Bronzed Cowbird expands its range and is studied in greater depth, more hosts will undoubtedly be recorded. Received 22 July 2004, accepted 19 March 2005.

The five species of brood parasitic cowbirds (*Molothrus* spp.) differ greatly in the numbers of hosts they use. Brown-headed (*M. ater*) and Shiny (*M. bonariensis*) cowbirds are known to have parasitized more than 200 hosts, while the Giant (*M. oryzivorus*) and Screaming (*M. rufoaxillaris*) cowbirds parasitize 10 host species or less (Ortega 1998). The Bronzed Cowbird (*M. aeneus*) uses an intermediate number of hosts, with a total of 95 known host species (Lowther 1995, Sealy et al. 1997, Lowther 2004). Lanyon (1992) and Rothstein et al. (2002) have discussed alternative evolutionary scenarios for the evolution of host use and the relationship between the number of hosts used by each cowbird species and its branching order in the phylogeny of cowbirds. Additional data on host use are needed to resolve these issues, especially for the Neotropical cowbird species, in part because the number of recorded hosts is influenced by various biases, such as research effort, range, and even

body size of a particular cowbird species (Rothstein et al. 2002).

The Bronzed Cowbird is one of the least studied cowbird species (but see Carter 1986, Peer and Sealy 1999b, Chace 2004) and new data on its host use are especially valuable and could lead to tests of the hypothesis that Bronzed Cowbirds are more specialized in areas where they are sympatric with Brown-headed Cowbirds (Peer and Sealy 1999b). Here, we report the first record of Bronzed Cowbird parasitism on the Great-tailed Grackle (*Quiscalus mexicanus*), representing the 96th recorded host of this cowbird species. The Great-tailed Grackle, like other grackle species, is rarely parasitized by cowbirds (Rothstein 1975, Peer and Bollinger 1997, Peer et al. 2001, Peer and Sealy 2004b), and our record represents the first recorded observation of cowbird parasitism on the Great-tailed Grackle, despite the fact that it is sympatric with four parasitic cowbird species. There is also no evidence of conspecific brood parasitism in Great-tailed Grackles (Johnson and Peer 2001).

On 16 April 2003, we discovered the parasitized clutch in the collection of the Western Foundation of Vertebrate Zoology in Camarillo, California. The clutch, which had been collected on 16 May 1882 by A. Forrer in Presidio, Sinaloa, Mexico, contained four Great-tailed Grackle eggs and one Bronzed Cowbird egg. The clutch was set mark 169,12, and catalog number 167555-1+4. The description stated that incubation was “fresh” and identity “sure.”

The number of known hosts for the Bronzed Cowbird has increased 500% since Friedmann's (1929) seminal study of the cowbirds. Our discovery of the Great-tailed Grackle as a host will likely be followed by additional host records as research is conducted in the little-studied southern portion of this cowbird's range. In addition, the grackle is expanding its range in response to habitat

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modification; thus, the species is encountering new hosts (Sealy et al. 1997). Nonetheless, the Bronzed Cowbird appears to be more restricted with respect to its host species than the Brown-headed Cowbird. Brown-headed Cowbirds parasitize more than two times as many hosts as Bronzed Cowbirds in areas where the species occur in equal numbers (Peer and Sealy 1999b).

Bronzed Cowbirds were once thought to parasitize mostly orioles (*Icterus* spp.; Friedmann 1963), but this view has changed as more hosts have been discovered. Only 10 of the 96 Bronzed Cowbird hosts are *Icterus* species, and (including our discovery) only 15% of recorded hosts are members of Icteridae. Host use appears to be influenced by community composition. For example, Peer and Sealy (1999b) found that the most commonly parasitized host in southern Texas was the Northern Cardinal (*Cardinalis cardinalis*), which was much more abundant there than orioles.

This is the first recorded observation of parasitism on Great-tailed Grackles—probably due to the species' anti-parasite behaviors. The Great-tailed Grackle is 1 of only 30 species in North America known to regularly eject cowbird eggs (Peer and Sealy 2004a) and they are extremely intolerant of foreign eggs. Not only do they reject 100% of experimental Bronzed and Brown-headed cowbird eggs (typically within hours), they also reject conspecific eggs that closely resemble their own (Peer and Sealy 2000, Peer and Sealy 2004b). Thus, cowbird parasitism may go largely undetected because the cowbird eggs are ejected before researchers ever see them. However, Peer and Sealy (1999b, 2004b) monitored 798 nests daily, beginning just before sunrise when Bronzed Cowbirds lay their eggs (Peer and Sealy 1999a), and found no evidence of parasitism, suggesting that cowbirds avoid parasitizing grackles because their eggs would be ejected.

The lack of parasitism is not due to the grackle's larger size. Similar to Shiny and Giant cowbirds, Bronzed Cowbirds parasitize hosts larger than themselves more often than do Brown-headed Cowbirds. Despite having only 57% of the mass of Great-tailed Grackle hatchlings, cross-fostered Bronzed Cowbirds can fledge from Great-tailed Grackle nests, in-

dicating that the grackle is a suitable host species (Peer and Sealy 2004b).

This observation supports Peer and Sealy's (2004b) hypothesis that Bronzed Cowbird parasitism may have exerted selection pressure on the egg-ejection behavior demonstrated by Great-tailed Grackles. On the other hand, it may be more likely that this ejection behavior evolved in response to parasitism by the Giant Cowbird, the eggs of which closely resemble grackle eggs, and which also specializes on parasitizing large, colonial members of the Icteridae (Peer and Sealy 2004b).

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#### LITERATURE CITED

- CARTER, M. D. 1986. The parasitic behavior of the Bronzed Cowbird in south Texas. *Condor* 88:11–25.
- CHACE, J. F. 2004. Habitat selection by sympatric brood parasites in southeastern Arizona: the influence of landscape, vegetation, and species richness. *Southwestern Naturalist* 49:24–32.
- FRIEDMANN, H. 1929. The cowbirds: a study in the biology of social parasitism. C. C. Thomas, Springfield, Illinois.
- FRIEDMANN, H. 1963. Host relations of the parasitic cowbirds. U.S. National Museum Bulletin, no. 233. Washington, D.C.
- JOHNSON, K. AND B. D. PEER. 2001. Great-tailed Grackle (*Quiscalus mexicanus*). The Birds of North America, no. 576.
- LANYON, S. M. 1992. Interspecific brood parasitism in blackbirds (Icterinae): a phylogenetic perspective. *Science* 255:77–79.
- LOWTHER, P. E. 1995. Bronzed Cowbird (*Molothrus aeneus*). The Birds of North America, no. 144.
- LOWTHER, P. E. 2004. Lists of victims and hosts of the parasitic cowbirds (*Molothrus*). <http://fm1.fieldmuseum.org/aa/Files/lowther/CBLList.pdf> (accessed 4 February 2005).
- ORTEGA, C. P. 1998. Cowbirds and other brood parasites. University of Arizona Press, Tucson.
- PEER, B. D. AND E. K. BOLLINGER. 1997. Explanations for the infrequent cowbird parasitism on Common Grackles. *Condor* 99:151–161.
- PEER, B. D., H. J. HOMAN, AND S. G. SEALY. 2001. Infrequent cowbird parasitism on Common Grackles revisited: new records from the Northern Great Plains. *Wilson Bulletin* 113:90–93.
- PEER, B. D. AND S. G. SEALY. 1999a. Laying time of the Bronzed Cowbird. *Wilson Bulletin* 111:137–139.

- PEER, B. D. AND S. G. SEALY. 1999b. Parasitism and egg puncture behavior by Bronzed and Brown-headed cowbirds in sympatry. *Studies in Avian Biology* 18:235–240.
- PEER, B. D. AND S. G. SEALY. 2000. Conspecific brood parasitism and egg rejection in Great-tailed Grackles. *Journal of Avian Biology* 31:271–277.
- PEER, B. D. AND S. G. SEALY. 2004a. Correlates of egg rejection in hosts of the Brown-headed Cowbird. *Condor* 106:580–599.
- PEER, B. D. AND S. G. SEALY. 2004b. Fate of grackle (*Quiscalus* spp.) defenses in the absence of brood parasitism: implications for long-term parasite-host coevolution. *Auk* 121:1172–1186.
- ROTHSTEIN, S. I. 1975. An experimental and teleonomic investigation of avian brood parasitism. *Condor* 77:250–271.
- ROTHSTEIN, S. I., M. A. PATTEN, AND R. C. FLEISCHER. 2002. Phylogeny, specialization, and brood-parasite coevolution: some possible pitfalls of parsimony. *Behavioral Ecology* 13:1–10.
- SEALY, S. G., J. E. SÁNCHEZ, R. G. CAMPOS, AND M. MARIN. 1997. Bronzed Cowbird hosts: new records, trends in host use, and cost of parasitism. *Ornitología Neotropical* 8:175–184.

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## A Cause of Mortality for Aerial Insectivores?

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**ABSTRACT.**—A male Eastern Phoebe (*Sayornis phoebe*) was found dead on 15 April 2004, hanging from a piece of monofilament fishing line over the Kinnikinic River near River Falls, Wisconsin (Pierce County). The individual was hooked through the tongue by a fly-fishing lure. Although fishing tackle has been reported as a cause of mortality for several aquatic bird species, further research is needed to determine whether abandoned trout-fishing lures represent a significant threat to aerial insectivores. *Received 13 September 2004, accepted 28 February 2005.*

The Eastern Phoebe (*Sayornis phoebe*) is a subsocial flycatcher (Tyrannidae) that breeds throughout the eastern United States and southern Canada. It is one of the earliest migrants to return in the spring (Weeks 1994). Eastern Phoebes are primarily aerial insectivores, but they also glean insects from a variety of substrates (Via 1979). They feed primarily in edge habitats (Weeks 1994), including along stream banks where they fly out over the water to capture prey. Flying insects compose the majority of the Eastern Phoebe's diet (Weeks 1994). During hatches of insects

from streams, individuals often forage low over the water by hawking (MDE pers. obs.). Eastern Phoebes also have been observed catching fish, sometimes hovering over the water for several seconds before taking the prey (Binford 1957).

On 15 April 2004, a male Eastern Phoebe (sex was subsequently determined by inspection of gonads) was found dead, hanging approximately 0.5 m below a tree branch that was 2 m above a small river (Fig. 1). We found the bird ~0.8 km downstream from the River Falls dam on the Kinnikinic River near River Falls, Wisconsin (Pierce County). Closer inspection revealed that the Eastern Phoebe was hanging from the end of a piece of monofilament fishing line. We recovered the bird on 16 April and deposited it at the Bell Museum of Natural History at the University of Minnesota (catalogue #MDE-065).

The phoebe was hooked through the tongue by a fishing lure used for fly-fishing. Presumably the line was broken off once it and the lure became entangled in the tree. The lure was a bead-head pheasant-tail nymph, which generically mimics the larval stage of mayfly species (Ephemeroptera). These larvae are aquatic, thus, this lure does not mimic the normal aerial insects that typically compose the Eastern Phoebe's diet. We hypothesize that the lure was bouncing around at the end of the

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