

FEATURE ARTICLES

**CORRELATES OF EGG REJECTION IN HOSTS OF THE BROWN-HEADED COWBIRD**

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*Abstract.* We conducted a comparative analysis of eight potential correlates of egg rejection in hosts of the parasitic Brown-headed Cowbird (*Molothrus ater*) to test the evolutionary equilibrium and evolutionary lag hypotheses as explanations for the acceptance of cowbird parasitism. The analyses generally supported evolutionary lag. Historic contact with cowbirds may explain why hosts that have recently come into contact with cowbirds accept parasitism, but it does not account for acceptance by hosts with long histories of contact with cowbirds. Egg predation by hosts, nest sanitation, population size, and egg appearance were not correlated with rejection. Larger species that typically build larger nests were more likely to reject. Large hosts may have been parasitized more frequently in the past, possibly due to their more easily found nests or superiority as hosts, and as a result, may have had more opportunity to evolve rejection. Rejection was also correlated with taxonomic affiliation, suggesting that once rejection evolves it is maintained, which implies that rejection is not costly and thus argues against an evolutionary equilibrium. Not surprisingly, hosts with large bills were more likely to reject. This may be a corollary of the tendency for large hosts, which tend to have larger bills, to reject. An evolutionary equilibrium may exist for hosts with eggs that resemble cowbird eggs, depending on the costs to host reproductive success and the likelihood of committing recognition errors. Nevertheless, some hosts have been in contact with cowbirds for a long time, build large nests, have large bills, have a “favorable” phylogeny, and lay eggs that differ from cowbird eggs, yet accept cowbird parasitism. Chance may play a role in the accumulation of the necessary recombinants and mutations necessary for the evolution of rejection.

*Key words:* brood parasitism, cowbird, egg rejection, host defenses, *Molothrus ater*.