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Mr. Harold Mayfield  
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Dear Harold:

Prompted by an idea in my recent Condor paper on cowbirds, a correspondent has come up with a suggestion regarding the Kirtland's Warbler. I would like to pass the ideas on to someone who is closer to the warbler situation than I am.

Hal Harrison suggested that if my hypothesis that cowbirds learn which hosts are good (Rothstein 1975:258) is correct then cowbird parasitism should decrease if man continues to remove cowbird eggs from Kirtland's Warblers nests. Under my hypothesis, for which there is admittedly almost no evidence, cowbirds check up on parasitized nests and do not again parasitize a species if their egg has disappeared or if their nestling is missing before old enough to have fledged. If Harrison and I are correct then continued egg removal by man should rapidly lower the incidence of parasitism, with only naive cowbirds parasitizing warblers i.e., cowbirds that have not yet learned that the warbler is an unsuitable host.

It's even possible that egg removal by man could result in a true evolutionary change in cowbirds such that the parasite would develop a genetic predisposition to avoid using Kirtland's Warbler as a host. Such an evolutionary change would, of course, require suitable genetic variation and it's unlikely that the necessary mutations or recombinations will appear very soon. However, if cowbirds already have genetic (innate) preferences for certain hosts then man's selective egg removal might bring about an evolutionary change in the cowbird fairly rapidly.

In practical terms all of this theorizing calls for little change in our efforts to save the warbler. It just indicates that there may be some additional bonuses to man's removal of cowbird eggs. I do have one word of caution though regarding removal of cowbird eggs. In many instances this could cause the warblers to desert their nests. Experiments I have done on acceptor species show they are unresponsive to the appearance of individual eggs but are responsive to the total mass of eggs in a nest. If the egg mass is reduced by too much, acceptors will abandon even if the reduction is accomplished by removing cowbird eggs and leaves the bird with only its own eggs. The solution to this problem would be to replace real cowbird eggs with artificial warbler eggs. I'm quite sure this would keep the warblers from deserting. At the same time this replacement would still provide the "training effect" teaching cowbirds that warblers are poor hosts.

