

# Nature Notes

By Marjorie Richman

## Brood Parasites

A bird's life is not easy. Besides predation they have to worry about injustice. Birds? Injustice? Of course, there are no law courts in the bird world, but there are outlaws. The story of how these criminals operate could be the subject of any TV true crime series. There are tales of outrageous acts and innocent victims.

The birds I'm referring to don't raise their own chicks. It is not exactly known why certain species have adopted this survival practice, but it does give them more time for foraging and, of course, for producing eggs. Instead of wasting energy building nests and feeding their own hungry chicks, they put their eggs in the nests of other birds and let the involuntary hosts raise the chicks.

Such nefarious birds are called "brood parasites." They are everywhere: North and South America, Europe and Asia. Rather isolated Australia seems to lead the world in the number of brood parasite species. We have our own local brood parasite here in the Mid-Atlantic, the brown-headed cowbird. The cowbird's behavior is a good example of how brood parasites infiltrate a nest and ensure the success of their own species.

A female cowbird will target the nests of many of our favorite songbirds. Some cowbirds are picky; they will spend hours sizing up the health and energy of prospective foster parents. Timing is important. She must observe when a potential victim lays her eggs and determine when they will hatch. Cowbird eggs have a shorter incubation period than those of most species and their chicks develop faster. If her chicks hatch a few days earlier than those of the host, the cowbird chicks will be bigger, hungrier and more aggressively demanding when food is being distributed, giving the cowbird's chicks an obvious advantage in the race for survival. If the timing is not quite right and she really wants to use the nest, she has another option: she can

simply destroy the host's eggs so that the birds will have to start over and she can try again.

Once she selects a victim, the cowbird will wait for the host birds to leave the nest. If she gets impatient, she might encourage them to leave by mimicking the sound of a predator, such as a hawk. She has to work fast during the breeding season. A cowbird lays about 40 eggs, far more than her victims. In a single year she must parasitize several nests to accommodate all of them.

Why don't the birds destroy foreign eggs before they hatch? Researchers wondered about this. Many birds, it was found, lack the ability to recognize foreign eggs. Those who do see the difference may take action either by puncturing the eggs or throwing them out of the nest. This strategy may not work out well for the host birds. It seems the female cowbird

does not abandon her eggs, she is watching. If her eggs are purposely destroyed, she has been known to take vengeance either by puncturing the hosts' eggs or destroying their nest entirely. Birds who have suffered cowbird retaliation often choose to raise the foreign chicks and hope for the best.

Miraculously, cowbird chicks become mature cowbirds, not members of the species that raised them. They learn cowbird calls, mate with other cowbirds, and become good brood parasites. One might think they would imprint on their foster parents and learn the behaviors and songs of the host species. They do not because the female cowbird visits all her parasitized nests and contacts her offspring via special calls while they are still in the host nest. Researchers call these calls, "passwords". Somehow the chicks relate to her calls rather than to those of

their foster parents, an amazing adaptation in the auditory regions of their brains. Otherwise, there would be few brood parasites alive today, and that's not the case.

I've painted a pretty bleak picture of the female cowbird. I have characterized her as lazy, sneaky and cruel. While her victims work hard to feed her voracious chicks, she sits in



*Cowbird (f) – photo by Kurt Schwarz*

a tree nearby calling to them. If her intentions are thwarted, she is vengeful. All true, but there is another view.

As we know, life in nature is an evolutionary arms race. Let's give the female cowbird a bit of credit for her intelligence and her ability to deal with the difficulties she faces. She is not a welcome guest in any neighborhood. If spotted, an alert is sounded and she will be mobbed. If caught, she will not survive. If a nest is parasitized, the host birds may build a new nest with narrow openings that she can't enter or, if she enters, she is trapped. A helpless brood parasite is not treated gently.

The female cowbird must be a skillful cheat and a patient watcher. She has to spend hours observing promising nests while keeping out of sight. If she mistakes the timing, her eggs may hatch too late and the chicks will

not be able to compete with the host's chicks for food. Placing eggs in a nest exposes her to predation and she must visit many nests during the breeding season. She has to remember the location of all the nests that contain her eggs and make sure she is not putting eggs in a previously parasitized nest. Otherwise her earlier eggs will hatch before eggs deposited later, and her offspring will be competing with each other for food. Once the chicks hatch, she has to monitor all her nests to ensure that her chicks know they are cowbirds.

In short, the female cowbird has to have a great deal of intelligence, a good memory, and stealth. Parasitism requires an exotic set of skills, although perhaps the kind one associates with the mafia rather than birds. Perhaps we shouldn't judge raw nature, but it is tempting.



*Cowbirds (m) at feeder – photo by Kurt Schwarz*