Yellow-throated and Solitary Vireos in Ontario: 2. Arrival of Females

by

Ross D. James

Arrival of a female

There are several changes in the behaviour of a male vireo when a female arrives on a territory, so that it is very apparent what has happened. Even when you cannot actually see this, you can hear it clearly. I have not actually witnessed the moment of appearance of a female in front of a male. But, I have been present nearby a couple of times with each species to hear the events when a female arrived. and within a minute or two was able to see what was transpiring. On several other occasions, I have returned to territories where males had been unmated fewer than 24 hours previously (and probably only an hour or two previously), and newly formed pairs were not yet building a nest. A few other times with each species, nest building had already started, although the males had been unmated 24 hours previously.

In these two species, the male's first reaction to a female definitely is one of courtship and not aggression. I once saw a silent Solitary Vireo (V. solitarius) appear suddenly before an unmated singing male. The singing bird immediately began a courtship display. Then, when the silent bird apparently did not make the appropriate response, it was chased, weakly at first and then more strongly out of the area. Only then did the newcomer sing to reveal its sex as male.

A territorial male might be expected to chase any other similar looking vireo from his territory as often happens in other species of songbirds where the sexes are similar looking. But, in some way as yet unknown, the female Yellowthroated (V. flavifrons) and Solitary Vireos are able to indicate their sex. The males almost instantly change behaviour from that of singing territorial birds to courting birds. Each stops his persistent singing and begins to give the same sort of display he gives immediately prior to copulation, although not as prolonged or complete from what little I have been able to hear and see. He flies back and forth between displays. excitedly calling with contact calls, trills and soft cheee calls in front of the newly arrived female.

After the initial contact and courtship displays by the male, the focus of displays shifts very quickly to the male's chosen nest sites (James 1978). The male flies to one of his chosen nest sites and begins to sing quickly. If the female does not come soon, he flies back toward her singing and calling, and then immediately returns to a nest site. He will sing and give more trills and cheees, until the female comes close to him. As soon as she arrives, he begins to give a nest building display. This is a ritualized display in which he does not have any nest material in his beak, but goes through motions that now only vaguely resemble nest building (James 1978). Instead of, or prior to, his nest building display, sometimes he may again give a precopulatory display.

As he displays, the female will supplant him at the nest site (she flies in

and lands right where he was). He hops to one side only 20 to 30 cm away and continues to give his nest building display, rapidly and vigorously. At this time, of course, there is no nest below him, but he is obviously doing the same thing he was doing over the nest site.

The female will hop back and forth a few times and examine the site. She may manipulate some material if there is any there. After a brief examination that may be only 5 to 10 seconds, she leaves. The male hops back to the nest and continues the nest building display. But, as the female moves away, he stops displaying. If he has a second site, whether there is any nest material there or not, he immediately flies there and the sequence is repeated. Male Yellowthroated Vireos will fly to a third and fourth site if available, and Solitary Vireo males may fly back and forth between two sites, or may fly to a third site (that I was previously unaware of). But, for five or ten minutes, males excitedly fly back and forth, giving courtship or nest building displays as appropriate, each time the female approaches.

Following this initial flurry of activity, the pair forages about together exchanging contact notes. After a short while, the male will again return to one of his chosen sites and the same events will take place. He may also start to examine crotches wherever he happens to be as they forage together. The female may also supplant him at such times, and he begins to display as if at a chosen site, but his display is not likely to be as pronounced or prolonged.

If a male had no apparent prechosen sites, however, he might display at almost any site he had found that could have been an appropriate crotch. I have even seen displays at what appeared to me to be rather inappropriate places, the display probably being more important than the site during the early contact period at least.

Right from the start then, the males use courtship behaviour rather than an aggressive response. I have very rarely observed males chasing a female on the first day together. When seen, it is more likely an outlet for aggressive energy than an attempt to chase off another bird, as is a type of chasing that may be seen later. Since the males use courtship at the beginning of the relationship, it is also likely that the females use a courtship display or a courtship-like response to identify their sex, so that they will not be chased.

When just pairing, the females are very sensitive to any disturbance. If I have been close enough to observe the behaviour, she has likely seen me and that has been enough to cause her to go and look elsewhere for a mate. In every instance, except for one Solitary Vireo pair, where I found one or more nest starts of the male, the final nest was at a place where I did not find a preselected nest start. I do not know whether this was because I did not find the sites before, whether they abandoned all nest starts I had found because of my presence when they were pairing up, or if the males' nest starts only serve for display purposes anyway.

In a couple of instances where I observed no nest building before the female arrived, the pair had chosen a site and was building a nest within 24 hours. This suggests that even if a male does not begin building before a female's arrival, probably he has one or more sites chosen already.

Where nest sites have been preselected, the males of both species will be seen carrying nest material, usually within an hour of the females' arrival. They take material to a nest site and again begin to call and display when the female comes near the site. Although I have not observed females carrying nest material at this very early stage, presumably she can influence the selection of the site, by either coming and showing an interest there, or by refusing to come back to it, in which case the male will soon abandon it. But again, I am uncertain just how the final nest site is decided, as my presence near a selected site causes it to be abandoned.

Other behaviour changes

With both species, once a pair has been formed, the male and female stay very close together throughout the day. At this early stage, it is probably important to successful pair formation, as the birds become familiar with each other. Right from the time a female arrives, the male is seen "fluffing" (James, in prep.). He raises all his body feathers somewhat, as if he were cold (see Figure 1). After each flight, when feathers are sleeked, he can be observed fluffing his feathers again. This makes him look somewhat larger than the female that does not do this at this time. On the day of pairing, all the time he is with the female, he will maintain this fluff (except when involved in another display). The fluffing rather quickly wanes and vanishes within the first couple of days of early nest building. When seen after the first day, it tends to last for short periods only. While the function of fluffing is unclear, it probably serves to enhance the male's apparent size, and hence his attractiveness to a female.

ONTARIO BIRDS DECEMBER 1996

Much more obvious is a sudden change in singing. When unmated, males sing continually at a fairly rapid rate. Suddenly, they literally almost cease to sing, except as it is associated with specific displays at a nest site. The total amount of song heard once mated is perhaps only 20 percent of what it was when he was unmated (James 1984). Contact calls become the predominant means of communication within the pair, and territorial defense is usually minimal anyway.

Difficulties

The reader should appreciate the challenges in gathering the preceeding observations. In a wooded environment, with the birds tending to remain high in trees and on the move, it can be difficult to see them most of the time. Nest sites of Yellow-throated Vireos are typically also high in the trees and readily obscured by leaves. Even when fully formed, nests may be difficult to find. Then, one has to find unmated birds and follow them daily hoping to be present when a mate shows up. But, you have to remain far enough away and unobtrusive so that the birds do not abandon their territories or newly arriving consorts. This makes it difficult to observe subtle behaviours. It can take several years of patient observing before being fortunate enough to get one chance not only to be present on the right day at the right time, but also to be in a position to see what is happening, and hopefully without having to move about making your presence obvious, probably destroying any chance you have to get follow up observations. Hearing it happen is considerably easier, and more frequent once you figure out what is going on, but doesn't provide as many details.



Figure 1: Drawn from a slide of a Solitary Vireo, in the company of a female shortly after pairing, this shows a *fluffing* display in which all body feathers are just slightly erect, making the bird appear somewhat larger, but not aggressive.

Discussion

Among most species where males and females have similar plumage, it would not be surprising that a territorial male might at first treat an arriving female as a potential rival. Only by having a different behaviour can she communicate her intentions. In some species, such as thrushes of the genera Catharus and Hylocichla, it may take as long as a week for a female to overcome male aggression (Dilger 1956). Even among vireos, initial chasing of females seems to be normal to some extent, and has been described as violent for several species (Barlow 1962, Lawrence 1953, Howes-Jones 1985, Barlow and Rice 1977).

The initial courtship responses of male Yellow-throated and Solitary Vireos, and essentially immediate recognition of a female by some means, appears to be characteristic of only these two species among the vireos. However, more detailed studies of other vireos may reveal allied behaviour in additional species. But, it allows these two species to begin nest building within a few minutes or at most a few hours of the formation of a pair.

The behaviour of birds during initial contact is very important in getting a mate of the right species and in coordinating activities in order to avoid wasting time and energy in unproductive nesting attempts. The use of courtship

103

displays right at the start would seem to be a way of ensuring mating with an appropriate partner. The precopulatory displays of these two species are somewhat different and certainly display vividly different plumage colours (James, in prep.).

As important as courtship displays at the time of pairing, however, are the ritualized nest building displays. These displays are unknown among any other vireo species (James 1978). Although further studies of other species are needed to verify that they are unique to the Yellow-throated and Solitary Vireos, the nest building display is also given later during nest building and is given rather conspicuously. There seems to have been considerable opportunity to have seen it, if it was present in other species.

It cannot be said that males with preselected nest sites are more successful at getting mates than those without. Even if I could not detect a prechosen site, the male may have had one or more, and my presence near nest sites at the time of pair formation would undoubtedly have influenced the ability of a male to attract a female.

Since most males of both species appear to preselect sites, I would think they are important at least in pair formation. And, given that males often spend considerable time searching for and examining crotches prior to the females' arrival, and that nest building is often under way within 24 hours of the female's arrival, I suspect they are also important as potential nest sites. My inadvertent interference has probably prevented their more widespread use as final nest sites.

Although most male Yellowthroated and Solitary Vireos preselect nest sites, the female may still influence the final site selected. They could presumably indicate their willingness to accept a preselected site as easily as indicating a later site that the male begins to build. Graber (1961) also felt that female Black-capped Vireos (V. *atricapillus*) chose the final site, although males may preselect. Among Bell's Vireos (V. bellii), where the males do most if not all of the initial nest building, Barlow (1962) also felt that the female chose the site. Quite likely the females have an influence on the final choice of site in all species.

Apparently, it is normal among many species of songbirds to have a marked reduction in the amount of primary song once a pair has been formed (Catchpole and Slater 1995). Its function in attracting a potential mate is no longer needed. A similar reduction is probably to be expected among most vireos, except those such as the Red-eyed Vireo (V. olivaceus), where the males take no part in nest building. However, the fluffing display used by both Yellow-throated and Solitary Vireos is another behaviour that is not known in any other vireo. It is another display that helps to indicate the close relationship of these two vireos.

Literature Cited

- Barlow, J.C. 1962. Natural history of the Bell's Vireo, Vireo bellii Audubon. University of Kansas Publication 12: 241-296.
- Barlow, J.C. and J.C. Rice. 1977. Aspects of the comparative behaviour of Red-eyed and Philadelphia Vireos. Canadian Journal of Zoology 55: 528-542.
- Catchpole, C.K. and P.J.B. Slater. 1995. Bird Song: Biological Themes and Variations. Cambridge University Press, Cambridge.
- Dilger, W.C. 1956. Hostile and reproductive isolating mechanisms in the avian genera *Catharus* and *Hylocichla*. Auk 73: 313-353.

Graber, J.W. 1961. Distribution, habitat requirements, and life history of the Blackcapped Vireo (*Vireo atricapilla*). Ecological Monographs 31: 313-336.

- Howes-Jones, D. 1985. Nesting habits and activity patterns of Warbling Vireos, Vireo gilvus, in southern Ontario. Canadian Field-Naturalist 99: 484-489.
- James, R.D. 1978. Pairing and nest site selection in Solitary and Yellow-throated Vireos with a description of a ritualized nest building display. Canadian Journal of Zoology 56: 1163-1169.
- James, R.D. 1984. Structure, frequency of usage, and apparent learning in the primary song of the Yellow-throated Vireo, with comparative notes on the Solitary Vireo. Canadian Journal of Zoology 62: 468-472.
- James R.D. (in prep.). Ethological relationships of Solitary and Yellow-throated Vireos,
- Lawrence, L. de K. 1953. Nesting life and behaviour of the Red-eyed Vireo. Canadian Field-Naturalist 67: 47-87.

Ross D. James, Department of Ornithology, Royal Ontario Museum, 100 Queen's Park, Toronto, Ontario M5S 2C6

Trumpeter Swans in the Kenora District of Ontario

by

Lillian J. Anderson, Harry G. Lumsden and W. Bruce Ranta

Introduction

Efforts to restore Trumpeter Swans to their former range in the mid-west and Great Lakes Region started in 1962 at the Lacreek National Wildlife Refuge in South Dakota. In 1966, Hennepin Parks in Minnesota started their program followed by the state of Missouri and Ontario in 1982. The Departments of Natural Resources in Michigan and Wisconsin began their projects in 1987, Iowa in 1994, and Ohio in 1996.

Pioneering swans from the Lacreek NWR have colonized the Porcupine Forest in Saskatchewan, and Minnesota birds have started to breed in the Kenora area of northwestern Ontario.

Released Trumpeters are usually colour marked so movements can be traced. Minnesota uses orange wing tags with three black digits. Wisconsin uses yellow neck collars. Michigan birds are marked with green wing tags and Ontario stocks carry yellow wing tags. There has been substantial wild reproduction from released birds over the years and many offspring carry no markers. Marked Minnesota and Michigan swans have been recorded in southern Ontario and unmarked Trumpeters have also been recorded by reliable observers.

Trumpeter Swans

in the Kenora area of Ontario

David Schneider, a local baitfisherman, found swans nesting in the English River system in four consecutive years. In 1993, he brought these sightings with confirming photographs to the attention of Bruce Ranta and Lil Anderson of the Ontario Ministry of Natural Resources