



Figure 1: Nashville Warbler probing Pin Cherry flowers, 15 May 2007, Algonquin Park Visitor Centre, Nipissing District, Ontario. Photo: Rick Stronks.

Nectar-Feeding by a Nashville Warbler

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Introduction

On 15 May 2007, at 1530h, I observed a male Nashville Warbler (*Vermivora ruficapilla*) foraging in a mature, blooming Pin Cherry (*Prunus pensylvanica*) tree located at the Algonquin Park Visi-

tor Centre (Sproule Township, *Nipissing*, Ontario). The warbler moved deliberately from one umbel of blossoms to the next, systematically and finely probing each flower that was within reach. It would then quickly hop or fly a short distance to another umbel and repeat the routine. In so doing, the Nashville Warbler covered approximately three cubic metres of the cherry's crown volume over 20 minutes.

In watching the warbler's behaviour I began to wonder whether it might be nectar-feeding at the cherry blossoms. I alerted my colleague Rick Stronks, who began taking photographs of the bird (Figure 1). The warbler did not conduct an exaggerated gross visual inspection of each flower prior to probing it, nor did the bird appear to discriminate between flowers equally within its reach. With binoculars, I confirmed that the warbler was not moving its bill or head in such a way that would suggest the seizing and ingesting of arthropod prey, nor did it bill-swipe. I later inspected some of the umbels of this cherry tree up-close, as well as those of a nearby blooming Pin Cherry stand (20+ stems), and saw no evidence of arthropods either on or inside the flowers, or on the foliage. The temperature at the time of the observation was 13.3° C, with overcast skies, fog and intermittent light mist.

On 17 May 2007, a sunny and mild day, I again observed a male Nashville Warbler foraging in the same cherry tree; this time, it was vigorously gleaning

and hawking. Insect activity was well in evidence as many flying insects including hymenopterans were visible about the cherry, attracted to its blossoms. This second Nashville Warbler did not exhibit any behaviour that suggested nectar-feeding as had the warbler of 15 May 2007.

Discussion

Nectar-feeding is a well-documented behaviour among various Neotropical migrant wood-warblers on their wintering grounds in Central and South America. This includes the Tennessee Warbler (*V. peregrina*; Rimmer and McFarland 1998), the Cape May Warbler (*Dendroica tigrina*; Baltz and Latta 1998) and the Palm Warbler (*D. palmarum*; Wilson Jr. 1996). The Cerulean Warbler (*D. cerulea*) and other species have been observed nectar-feeding at the tubular blossoms of the *Erythrina* tree in shade-grown coffee plantations on the warblers' wintering grounds in Mexico (Jones *et al.* 2000). I found one published account of nectar-feeding by the Nashville Warbler in winter; it was observed at two species of *Salvia* in Mexico during early return migration in February (Del Coro Arizmendi 2001). The Nashville Warbler has also been observed flocking with other warbler species in flowering trees on its wintering grounds (Howell and Webb 1995 in Williams 1996).

The extent to which the Nashville Warbler or other wood-warblers feed on

nectar later during spring migration, or on their breeding grounds, is much less well-documented. The Nashville Warbler's diet at all times is thought to consist almost entirely of insects (adults and larvae), which it captures mainly by gleaning, but also occasionally by hovering (Bent 1953, Williams 1996). Observations of nectar-feeding made in North America during spring migration, however, suggest that flower nectar may serve as a surrogate food source for some warblers during periods of low insect activity. Sealy (1989) observed Cape May Warblers nectar-feeding on Peach-leaved Willow (*Salix amygdaloides*) in Manitoba during an unseasonably cool spring migration, but never during five previous springs with seasonable temperatures. Nashville Warblers, Cape May Warblers and Tennessee Warblers were observed nectar-feeding on a species of native plum (*Prunus* sp.) in Minnesota during May 1997, following several days of unseasonably cool weather in a late spring migration (Rogers 1997).

Weather conditions at Algonquin Park during the period of 10 through 15 May 2007 were highly variable. Temperatures were unseasonably mild at first and then seasonal, but this was followed by a hard frost on the night of 12-13 May (temperature several degrees below 0° C) and a lighter frost on the night of 13-14 May. Nighttime temperatures thereafter moderated through 15 May; however, daytime solar radiation decreased and relative humidity increased

to above 90%, creating what can be described as damp and unpleasant conditions on the day of the observation. Insect activity was visibly depressed. In addition to the lack of insects on the cherry trees already noted, no flying insects were observed on 15 May. In this context, it appears that the Nashville Warbler I observed was opportunistically exploiting the nectar in the Pin Cherry blossoms as an alternative food source due to the unavailability of otherwise staple arthropod prey.

This observation is further evidence of dietary plasticity by warblers during migration, and suggests that nectar-feeding during migration or on the breeding grounds may actually be more common than previously thought. Whether Neotropical migrant warblers by their nectar-feeding are significant pollinators of *Prunus* and other flowering plants along their migration routes and on their breeding territories remains undetermined.

Acknowledgements

I would like to thank Rick Stronks for assistance with the literature and Ron Tozer for helpful comments on an earlier draft.

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