

EARLY SPRING FLYCATCHING OF STONEFLIES BY BOHEMIAN WAXWINGS

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ABSTRACT — Bohemian Waxwings (*Bombycilla garrulus*) were flycatching two species of stoneflies (Order Plecoptera, Families Capniidae and Taeniopterygidae) on three days at the end of March, 1996. The location was northeastern New York State, in Clinton County, Town of Beekmantown. Environmental conditions and flycatching behavior are described.

KEYWORDS: Bohemian Waxwing, *Bombycilla garrulus*, stonefly, Plecoptera, Capniidae, Taeniopterygidae, New York State, flycatching.

INTRODUCTION

Bohemian Waxwings (*Bombycilla garrulus*) were observed flycatching insects in the early spring of 1996, from 29 through 31 March. Apparently these insects were two kinds of stoneflies (Order Plecoptera) that were emerging from a small stream, Ray (Rea) Brook, in extreme northeastern New York State, in Clinton County, Town of Beekmantown. Although Bohemian Waxwings are well known to practice flycatching, the details of species preyed upon, the seasonality of this type of food foraging, and the behavior accompanying it are not well documented. This account adds to knowledge in these areas.

I could find no formal, detailed definition of flycatching, although the term appears to be commonly used. I believe that common usage, and what I mean here, refers to the predatory behavior whereby a bird perches and waits for a passing insect in flight. The bird sallies out in pursuit and snaps up the insect in its bill. The prey insect is killed and ingested, not necessarily on the wing, but back at its perch.

OBSERVATIONS

A noticeable difference in Bohemian Waxwing flock size and behavior accompanied the flycatching behavior. Previous to the flycatching episodes, Bohemian Waxwings were seen in a compact flock of about 100 birds on 13 March, and similarly, a flock of about 50 birds occurred near the study area on 25 March. On these occasions, the birds were in compact groups, all in one treetop, a typical appearance. However, during the flycatching observations, only small, well dispersed flocks were observed. The numbers seen were: 20 on 29 March, 1 on 30 March, and 15 on 31 March. These birds were scattered over an area about 100 yards in diameter, occupying several treetops, with four or fewer birds per tree. Individual birds perched on the uppermost branches of the

leafless, deciduous trees, sallying out 15 to 25 yards and returning to the same perch, or flying on to another nearby treetop. Much of the time the birds remained perched on the tree branches, flying out occasionally, apparently only upon sighting a prey insect nearby.

It was not possible to see that the birds were actually catching something out of the air, even with 10 x 50 binoculars at a distance of about 100 to 200 yards. Only the typical flycatching flight behavior assured me that this was the case. This behavior consisted of flying out in a direct line, presumably with a target in sight from the beginning of the flight, and abruptly changing flight direction. The latter behavior apparently indicated the bird had caught the intended prey and was returning to its perch.

Parenthetically, an unexpected event occurred in the case of the lone Bohemian Waxwing observed on 30 March. Although it had previously been flycatching, it perched atop an isolated tree in an old pasture for about ten minutes without flying out. Suddenly, I realized that it had flown down into a nearby clump of trees and had positioned itself well down in the crown of a tree. It sat motionless against the trunk of a white ash tree. Its unusual behavior was soon explained by seeing a Sharp-shinned Hawk cruising among the nearby treetops. The hawk flew higher and moved away, but the waxwing maintained its motionless posture for at least ten minutes after the hawk had left the area.

STONEFLIES

The assertion that stoneflies were the targets of the flycatching Bohemian Waxwings is based on circumstantial evidence. It was probably too early in the season for other kinds of insects to have hatched or emerged from hibernation; there was no green vegetation for them to feed upon. Also, none were seen flying about or at rest. However, there were many stoneflies visible on tree trunks and on the bordering ice of the stream. Some were also flying about, landing on my nearby house (about 50 yards away). I collected a sample of two kinds and examined them under 70X magnification with a stereoscopic, dissecting microscope.

Using Borror and White (1970) for identification, I concluded that the small ones (about eight millimeters long, including the wings) were Small Winter Stoneflies (Family Capniidae). After a period of growth as aquatic naiads they mature into the adult form and emerge from the stream anytime from November through April. The sexes mate and the female deposits eggs in the water, completing the species life cycle. The larger specimens (about 16 millimeters long, including wings) were identified as Winter Stoneflies (Family Taeniopterygidae), which emerge from streams as adults from January to April. The Winter Stoneflies were much less numerous than the Small Winter Stoneflies. A rough estimate done by surveying the populations on the tree trunks determined that the Winter Stoneflies constituted only about 5% of the total. The stoneflies that I saw flying about did so with a weak, slow, fluttering

flight; they would be easy prey for a flycatching bird. Bent (1965) comments on the Bohemian Waxwing's ability, "It has sometimes been referred to as an expert flycatcher; it must be very smart at this, for it has been known to capture such swift and strong fliers as dragonflies."

ENVIRONMENTAL CONDITIONS

My observations indicated that flycatching took place from noon to four pm. Perhaps the sun had a necessary effect on the insects and also sufficiently warmed and dried the air to cause them to become airborne. The weather conditions during the three days I observed flycatching were: clear sky; winds five to ten mph, from both the north and the south; and air temperature 40° to 45°, Fahrenheit. The ground was still solidly frozen, only slightly thawed at the surface as the sun warmed it. Overnight air temperatures were in the upper 20°s, Fahrenheit. The stream still had some patches of ice along the sides. Its level and current were moderate, with clear water. The water temperature was around 38°F. I continued to look for flycatching Bohemian Waxwings each day until 12 April. Except for two days, 1 and 6 April (when it was sunny and the winds were light), this period was cooler, windier, and rainy or snowy. There were usually only small numbers of stoneflies on the stream side tree trunks.

FINAL OBSERVATION

Although the last time I saw Bohemian Waxwings flycatching was 31 March, on 1 April at 11 am, on this sunny, windless day, with the air temperature at 50°F, I saw three flocks of Bohemian Waxwings fly into the study area in quick succession. The flock numbers were about 25, 25, and 75 birds. The flocks united in a large tree, took off right away, and landed among the trees of the Ray Brook valley. An incomplete view of them allows me to say only that I do not believe they were flycatching. At any rate, after only five minutes the whole flock arose and flew westward. Apparently, they were not interested in flycatching stoneflies, although the conditions were suitable and the opportunity was present, as stoneflies could be seen flying about. At around the same time, about 25 Ring-billed Gulls were hawking over the Ray Brook valley (Klein 1997). It is possible that the presence of the hawking gulls may have inhibited flycatching by the waxwings. There was only one day (31 March) on which both waxwings and gulls were apparently pursuing stoneflies at the same time. However, they were not occupying the same area, being separated by a distance of about 200 yards.

With the study area under daily surveillance until 12 April (when the study had to be interrupted), I saw no Bohemian Waxwings until 12 April, 11 am, when a flock of about 75 birds appeared in the trees above my house. They were in a typical, tight group, vocalizing, but doing no flycatching. They remained only a short time. The air temperature was 50°F, with a strong north wind at

about 20 mph, and the sky was cloudy. It had rained overnight, stopping at about ten am. There were small numbers of Small Winter Stoneflies actively crawling on stream side tree trunks. Evidently, the numbers of stoneflies in the air, or the wind conditions, were not conducive for flycatching by the waxwings on this last date of their observed presence on the study area.

DISCUSSION

A search of some standard North American ornithological works yielded little information on the specific identity of insects that are cited as part of the Bohemian Waxwing's diet. Bent (1965) states that, in the early spring the Bohemian Waxwing "becomes a 'flycatcher' and may be seen sallying out from the tree-tops in pursuit of the tiny flies and beetles that fill the upper air even before the snow and ice have disappeared." Martin, Zim, and Nelson (1951) do not treat the Bohemian Waxwing separately, but under the account of the Cedar Waxwing states that there is slight information on the Bohemian Waxwing's food habits, but it seems to follow the pattern of the Cedar Waxwing. This species' food is nearly 90% fleshy fruits; animal food consists of beetles, ants and other Hymenoptera, flies, bugs, caterpillars, grasshoppers, crickets, and mayflies.

For those Bohemian Waxwings that happen upon a source of insects early in the spring, it probably represents an important addition to the diet, presumably being much richer in proteins and fats than the winter diet of fruits and seeds. This could be of significant benefit; presumably these birds would be flying long distances to their regular breeding range in western North America. For this group of waxwings, the discovery of the emerging stoneflies may have been incidental to foraging for fruits (mostly buckthorn) in the old pasture lands bordering Ray Brook. However, it would be interesting to know if Bohemian Waxwings actively seek out streams in the early spring because they know from experience that such places may be the source of emerging insects.

In any case, this instance of opportunistic food foraging is appropriate to the Bohemian Waxwing's nomadic movements and its need to adjust to varying conditions on a continental basis. In this regard, more observations on the feeding habits of the Bohemian Waxwing in New York and other parts of its non-breeding range might provide some interesting additions to the life history knowledge of this species, with special reference to survival during its nomadic travels.

ACKNOWLEDGMENTS

I wish to thank my wife, Carole, for advice and assistance in the writing of this article. Thanks are due to the State University of New York, College at Plattsburgh, for library resources and for laboratory and office facilities.

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