

# FURTHER OBSERVATIONS ON INTERACTIONS BETWEEN DRAGONFLIES AND HUMMINGBIRDS

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An earlier note (Miller, 1966) described a short series of territorial chases of a female Ruby-throated Hummingbird (*Archilocus colubris*) by a male blue-darner dragonfly (*Aeschna interrupta*) at Emma Lake, Saskatchewan in the summer of 1966. As this event was only observed once and no similar reports could be found in the literature, it was assumed to be an unusual and rare occurrence. However, further observations during the summer of 1967 suggest that the probability of such encounters is greater than one might expect.

During the summer of 1967, the area around the buildings of the University Biology Station on Fairy Island at Emma Lake was again used as a feeding territory by a female Ruby-throated Hummingbird. She visited flowers in the yard and artificial feeders made of test tubes filled with sugar and water and red vegetable coloring, and defended the area against intrusion by other hummingbirds. The fact that she visited the colored feeders before they were filled, following the same routine observed in previous summers, led us to believe that this was the same bird that was observed in 1966.

The first of two encounters between a dragonfly and a hummingbird in 1967 was observed by the author at about 1100 on July 21. While the hummingbird was hovering at a feeder located about five feet above the ground, a male *Aeschna interrupta* that had been patrolling the yard seized her from above. The hummingbird flew off, dislodging the dragonfly, but when she returned seconds later the dragonfly again attempted to seize her and she left the area. Because of the direction of his attack, his repeated attempt to grasp and hold the hummingbird, and the fact that this was a period when copu-

lating pairs of *Aeschna* were especially numerous, there is a possibility that this was a case of "mistaken identity" in which the male dragonfly was attempting to couple with the hummingbird.

A second interaction was observed at about 1300 on August 21 by Dr. Maureen Rever and Floyd Connor, when a male *Aeschna interrupta* attacked the hummingbird, while she was feeding at a lily flower about two and one-half feet above the ground, and chased her for an estimated 30 feet. During the chase the dragonfly maintained a position slightly below and six to eight inches behind the hummingbird.

Dragonflies and hummingbirds do not compete for food or breeding sites, or any other environmental resource except air space, and there is no apparent advantage to either species in defending a territory against the other. Nevertheless, these interactions illustrate two evolutionary trends that have an important bearing on the process of interspecies competition, namely (1) convergence of forms of territorial behaviour in widely different taxa, and (2) a corresponding lack of species-specificity in aggressive interactions. In order for competition between species to occur, it is first necessary that their ecological requirements (niches) intersect to bring them into a common "arena" where they can interact. Once these conditions have been met, species which compete through territorial aggression must be able to recognize potential competitors and communicate their territorial claims in a language that is understood. In the case of dragonflies and hummingbirds, their co-occurrence in the same territorial space is largely coincidental, and is not due to intersection of their ecological niches, but in spite of their

great taxonomic and ecological differences, there is apparently enough similarity in habitat, body size, coloration and flight behaviour (Miller, 1966) to provoke an aggressive response from dragonflies. These observations demonstrate the relatively low level of similarity that is required for

aggressive interactions between species, in spite of natural selection for species differences that will contribute to reproductive isolation.

#### LITERATURE CITED

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## RED-BREASTED NUTHATCH "HAWKING" INSECTS

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One of the aids in identifying many species of birds is their characteristic feeding behaviour. Nuthatches, for example, customarily feed on the trunks and limbs of trees, climbing about and searching for insects in nooks and crannies, often upside-down. Sometimes, in response to environmental influences such as food availability, or weather, species behave in unusual ways which attract our attention. Such an activity of nuthatches (and other birds) is "hawking", a term which is used to refer to birds capturing insects in flight by flying out from a perch. This is characteristic behaviour in flycatchers, which make their living in this fashion, but it is only infrequently seen in nuthatches.

On May 26, 1966 I watched a Red-breasted Nuthatch (*Sitta canadensis*) hawking insects from a spruce tree in Brookside Cemetery in Winnipeg. The nuthatch pursued flying insects in the same manner as a flycatcher. Several times in the course of five minutes of observation time, the nuthatch flew out to capture insects, each time returning to perch again on the same tree. I could not identify the insects which attracted the nuthatch. Presumably these were small flies which were rising in some numbers.

A. C. Bent (1945) quotes E. A. Forbush (1929) and P. M. Silloway (1907) as saying that the Red-breasted Nuthatch occasionally engages in flycatching. The only other published reference to flycatching in this species appears to be by Aaron M. Bagg (1966); the latter cites obser-

vations on Monhegan Island, Maine, by Christopher M. Packard on September 4 to 6, 1965, and records of eight to 10 nuthatches seen in early September, 1965 by Richard L. Plunkett "launching themselves out to catch flies in mid-air" from the tips of spruce trees.

Hervey Brackbill (1950) records details of observations of at least two White-breasted Nuthatches (*Sitta carolinensis*) hawking for insects on August 13, 1949 about a white elm in Baltimore, Maryland. A European species, the Nuthatch (*Sitta europaea*), has also been known to "hawk" for insects in several instances (Cornish, 1949; Williams, 1949). The editors of *British Birds* (editorial comment in Williams, 1949) suggest that insect "hawking" may actually be quite frequent in the Nuthatch. It may be that this is also true for the Red-breasted and even the White-breasted nuthatches. For this reason, it would be of great interest to hear of similar observations by others.

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