

Toe atrophy caused by carpenter ants in Vaux's Swifts

EVELYN L. BULL and TOROLF R. TORGERSEN

USDA Forest Service, Pacific Northwest Research Station, La Grande, OR 97850 USA

Abstract - Three cases of toe atrophy caused by carpenter ants *Camponotus* sp. are described in Vaux's Swift in northeastern Oregon. We monitored 11 Vaux's Swift (*Chaetura vauxi*) nests in 1993 in Union, Umatilla, and Baker Counties in northeastern Oregon, USA.

We monitored 11 Vaux's Swift (*Chaetura vauxi*) nests in 1993 in Union, Umatilla, and Baker Counties in northeastern Oregon, USA.

These nests were in hollow grand fir (*Abies grandis*) trees in mixed conifer stands (Bull and Cooper 1991). We trapped 21 adults at these nest trees in July. We also trapped 161 swifts at communal roosts in the same areas in August.

Two adults and 2 juveniles had 1 or 2 carpenter ants (*Camponotus* prob. *modoc* Wheeler) clinging to their toes (Fig. 1). When the swifts were captured, all that remained of the ants was the head attached to the toe by the locked mandibles. One toe on an adult and 2 toes on a juvenile, both with ant heads attached, had atrophied and were no longer functional. The toes on the other 2 swifts were swollen and inflamed from the bite but still apparently functional.

We suspect there were colonies of ants in the nest trees (Sanders 1964), and that the swifts were bitten while they were incubating or roosting in the trees. At the time the affected Bull and Torgersen adults were captured, excavating dust or large ants were observed on the boles of these nest trees. Ants may have been foraging or on foraging trails inside the tree when they encountered the swifts. Ants are common predators of other arthropods, or scavengers of dead or disabled arthropods and small vertebrates (Ayre 1963, Borror and DeLong 1971, Torgersen *et al.* 1990). In 1990 we observed a carpenter ant colony in a tree that housed a swift nest. When we cut a hole in the side of the tree to observe the nest which was 6 m above the ground, hundreds of carpenter ants swarmed out of the tree wall.

Once bitten, the swifts probably pulled off as much of the ant as possible, leaving the mandibles and head attached. The bites appeared to have become infected, and with circulation impaired, the affected toes atrophied.

The 2 affected adults were captured during incubation at 2 different nests, and their nesting attempts failed. These were the only 2 failed nests of the 11 we monitored, including others where adults were captured. None of the adults at the other nests had



Figure 1. Head of a carpenter ant attached by its locked mandibles to the toe of a Vaux's Swift in northeastern Oregon, 1993.

ants on their feet or showed evidence of ant attack. We suspect disturbance on adults or possibly attacks on nestlings by ants contributed to these nest failures. Other authors have observed nest failures which provide circumstantial evidence that carpenter ants (*Camponotus* spp.) may have been involved. Conner and Lucid (1976) described nest failures of the European Starling (*Sturnus vulgaris*) and Eastern Phoebe (*Sayornis phoebe*), that they ascribed to possible predation or disturbance by carpenter ants. However, they also observed apparent coexistence of nestling Northern Flickers (*Colaptes auratus*) and a colony of carpenter ants in the same tree. Kilham (1971) speculated that a pair of Yellow-bellied Sapsuckers (*Sphyrapicus varius*) may have been forced to abandon a nest and their young because of disturbance by carpenter ants (*C. pennsylvanicus*). The incidence of ants we observed on nesting adults was quite high (10%), while the incidence on communally roosting birds was much lower (1%). This difference may be a function of the ability of roosting birds to readily move about within a roost or to a new roost tree. If ants attack early in the nesting cycle, the swifts could attempt to relocate. Whereas, if ants become a problem after a nest is in use, the consequences of a move would be abandonment of a clutch of eggs or of the nestlings. Typically, Vaux's Swifts in Oregon raise only 1 brood per year, so they would be unlikely to attempt to nest again. Ramifications of the presence of ants in nest trees could include disabling injury or death of either

nestlings or adults. If bitten by enough ants, the swifts would be unable to perch and would perish. Our data suggest that ants may affect the fitness of adults and directly or indirectly influence nesting success. Further, colonies in potential nest trees could limit the number of available nest sites, a resource already thought to be in short supply.

Riassunto - Si descrivono tre casi di atrofia delle dita di *Chaetura vauxi* causata dall'attacco di formiche del genere *Camponotus*.

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