

Carnus hemapterus

A parasite of nestling birds



Figure 91. Family CARNIDAE

https://en.wikipedia.org/wiki/Carnus_hemapterus



<http://diptera.myspecies.info/carnidae/content/introduction-carnidae>

<http://www.nhm.ac.uk/nature-online/species-of-the-day/scientific-advances/disease/carnus-hemapterus/index.html>

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Carnid Flies (Carnidae) – p. 313

Carnid flies can be identified using the fly family key of

Arnett (2000). Grimaldi (1997) discusses the species, of which the most well known is *Carnus hemapterus*, and lists all avian hosts.

Carnus larvae scavenge in nests. Wingless adults either suck the blood of nestlings or feed on their skin secretions. Infestations are characterized by scabby axillae. Heavy infestations cause reduced pack-cell volumes in Barn Owls (*Tyto alba*) (Schulz 1986), reduced body mass in Common Kestrels (*F. tinnunculus*) (Heddergott 2003), and nestling mortality in Northern Saw-whet Owls (*Aegolius acadicus*) (Cannings 1986). The fly seems harmless to American Kestrels (*F. sparverius*) (Dawson and Bortolotti 1997). *Carnus* occurs in North America, Europe, Africa, and Malaysia. Specimens can be collected from hosts by hand or from nests by Tullgren funnel extraction of nest material (Mullen and O'Connor 2002), and then preserved in ethanol. Insecticide dusts can be used to treat hosts and control infestations in nests.

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Carnus hemapterus NITZSCH FROM SWAINSON'S HAWK

by

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The wingless ectoparasitic fly (*Carnus hemapterus* Nitzsch) was first reported on North American birds by Bequaert (1942) although in Europe, *C. hemapterus* seems to be fairly generally distributed. Bequaert (1942) identified the fly from 2 birds, a nestling flicker (*Colaptes cafer*) collected at Penn Yan, New York and a Screech Owl (*Asio otus*) taken in Florida. Capelie and Whitworth (1973) have since reviewed the distribution of *C. hemapterus* in North America, citing records for 9 host species including 3 woodpeckers, starling (*Sturnus vulgaris*) Black-billed Magpie (*Pica pica*) and American Kestrel (*Falco sparverius*). Main and Walli (1974) found *C. hemapterus* on nestling Osprey (*Pandion haliaetus*) in Massachusetts and Wilson (1977) found Pileated Woodpecker (*Dryocopus pileatus*) nesting material to contain the parasites. These records, seem to indicate that *Carnus* is widespread in the United States. Its distribution, however, will be unclear until there is a systematic study of bird ectoparasites in this country.

Bequaert (1942) reports the *C. hemapterus* has been observed on 12 families and 26 species of birds in Europe. Seven raptor species, White-tailed Eagle (*Haliaeetus albicilla*), Imperial Eagle (*Aquila heliaca*), Peregrine Falcon (*Falco peregrinus*), Kestrel (*F. tinnunculus*), Saker (*F. cherrug*), Barn Owl (*Tyto alba*), and Tengmalm's Owl (*Aegolius funereus*) have been noted as host.

In July of 1980, while examining nestling Swainson's Hawks (*Buteo swainsoni*), we found that 12 of the 15 nestlings we studied were parasitized by *C. hemapterus*. The flies occurred in groups of 3 to 5 and were found only in the axillary region of the hawks. No flies were attached and on being disturbed they moved from the bare axillary region to nearby feathered areas. The exact nature of the diet of *C. hemapterus* is unknown. Noller (1920) reports that the fly sucks blood from its host, while Hendel (1928) felt that *Carnus* feeds most probably on skin secretions. We observed dried blood spots on the hawks axillary region which is supportive of Noller's (1920) claim. The true diet of the fly is presently in question, but the fly could act as a vector of certain avian blood parasites.

Our findings are of interest, since few records have been reported for *C. hemapterus* in non-cavity nesting birds or from long-distance migrants like the

Swainson's Hawk. Our report is also the first record of this dipteran parasite on the Swainson's Hawk.

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