# Chapter XVI —Family Simuliidae

## (Black flies)

- (Williams & Feltmate, 1992)
  - Superphylum Arthropoda
    - (jointed-legged metazoan animals [Gr, *arthron* = joint; *pous* = foot])
  - Phylum Entoma
  - Subphylum Uniramia
    - (L, *unus* = one; *ramus* = branch, referring to the unbranched nature of the appendages)
  - Superclass Hexapoda
    - (Gr, *hex* = six, *pous* = foot)
  - Class Insecta
    - (L, *insectum* meaning cut into sections)
  - Subclass Ptilota
  - Infraclass Neopterygota
  - Order Diptera

The simuliidae, or black flies, comprise a cosmopolitan family of biting flies of great importance in many parts of the world as bloodsuckers and vectors of certain parasitic organisms (e.g. filarial worms).

Synchronised, mass emergences frequently occur, particularly in temperate regions, and these may persist for much of the spring and early summer as successive species mature. The sheer numbers of blood-seeking adults make such outbreaks especially dangerous to livestock and humans. For example, in Algonquin Park, Ontario, Canada, maximum attack rates of *Simulium venustum* on humans, in June, have been recorded at 78 flies/6.5 sq.cm. of skin/min (landing rate) and 17 flies/6.5 sq.cm./min (biting rate).

## Life History, Habitat and Feeding

The larvae and pupae are aquatic but are confined to running waters where they attach themselves to firm, usually smooth, substrates. The outlets of ponds and lakes are particularly favoured and productive habitats.
Most temperate and subarctic black fly species are univoltine but those in the tropics and subtropics, which may breed continually, may have four or more generations in a year.
Larvae may moult from 6 to 9 times (typically 7) before pupating, with the rate of growth depending largely on water temperature and the amount and quality of food that each larva can catch.
The duration of the pupal stage is commonly 1 week or less.

## References


- Narf, R. 1997. Midges, bugs, whirligigs and others: The distribution of insects in Lake "U-Name-It". Lakeline. N. Am. Lake Manage. Soc. 16-17,57-62.
- Peckarsky, Barbara L., Pierre R. Fraissinet, Marjory A. Penton, and Don J. Conklin, Jr. 1990. Freshwater Macroinvertebrates of Northeastern North America. Cornell Univ. Press. xii, 442pp.
- Williams, D. Dudley, and Blair W. Feltmate. 1992. Aquatic Insects. CAB International. xiii, 358pp.

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