

Chapter XIV —Family Culicidae



(Mosquitoes)

- (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

Although the Culicidae is a relatively small family (only some 3,065 species world-wide), it is the best known of all the Diptera and, in many parts of the world, mosquitoes are the most familiar type of insect to Man. The reasons for this revolve around the blood-sucking habits of the females and the associated spread of many debilitating and often fatal disease organisms, particularly those responsible for malaria, dengue and yellow fever. Apart from the diseases spread throughout the settlements in warm climates, in temperate and high latitude regions these suburban invasions create considerable human discomfort from their bites. The family Culicidae is divided into three subfamilies, the **Anophelinae**, the **Culicinae** and the **Toxorhynchitinae**.

Although populations of certain northern species may be very large, diversity in temperate regions is generally not high, for example only 74 species occur in Canada (compared with 520 species of Tipulidae and 546 species of Trichoptera).

Life History, Habitat and Feeding

Mosquito larvae are all aquatic and take in atmospheric oxygen at the water surface through spiracles borne on the dorsal side of abdominal segment 8. Mosquitoes are typical holometabolous insects, passing through four life cycle stages: egg; 4 larval instars; pupa; and adult.

Many temperate and higher latitude species have only one generation per year, but some others have as many as time, temperature, food resources and rainfall permit. In the tropics and subtropics, most species are multivoltine with life cycles as short as two weeks. Species rarely overwinter as larvae, but one Canadian species does so frozen solid in ice.

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.