

Order Diptera

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Order Diptera

Approximately 153 thousand species are known, distributed in 160 families around the world. In Brazil, there are around 8,700 species, with estimates of 60,000. It is a group that is present in most habitats. They are holometabolous, occupying different food niches, and can be parasites, and hematophagous, predators, in addition to feeding on leaves, fruits, flowers, nectar, and other sugary substances. Many dipterans play an important ecological role, especially as natural enemies of various organisms. Certain species have great economic, forensic, medical, and veterinary importance [1-16].

Suborder Brachycera: Flagellum of antennae nearly always fused into a compound 3rd segment, remaining diminutive segments form a stumpy “style” or bristle-like arista; anal cell of wing narrowed, nearly always closed on or before wing margin; palpi seldom with more than 3 segments, often 2 or 1, held forward (porrect); larvae usually with well-defined head, mandibles move vertically or parallel, cannot be opposed; adult escapes from pupa by a rectangular slit [1-16].

Series Schizophora: All flies with a ptilinal suture in head; larvae with no external head structure, mouth hooks visible through cuticle, one pair of prothoracic spiracles and one pair of posterior spiracles, each with either three slits or a mass of small pores; larvae with fore-end pointed and hind end truncate are called maggots; larvae with both ends blunt and fleshy, with bulges and tracts of spines, are called grubs [1-16].

Section Acalyptrate: Thoracic squamae (i.e., calypters that join the base of the wing to the thorax) are small or evanescent; small soft-bodied flies; major families well established; placement of genera uncertain; families can be grouped according to food preferences of larvae [1-16].

Suborder Brachycera-Cyclorrhapha: Usually shortened to Cyclorrhapha; characteristically forms pupa inside last larval skin as a puparium; adult fly pushes off a circular cap, hence the name Cyclorrhapha; most families (Schizophora) with a ptilinum (membranous sac inside head), which emerges from a horseshoe-shaped ptilinal suture (identifies adult Schizophora) above antennae, is puffed in and out to help fly escape from puparium or soil or to inflate fly’s body; ptilinum atrophies and only ptilinal suture remains; a small group of Aschiza, without ptilinal suture, are recognized chiefly by their wing venation [1-16].

Series Aschiza: Are a section of the Brachycera. Two large families, the Syrphidae and the Phoridae, and several smaller taxa are in this group. They are similar to most of the familiar Muscomorpha with one notable exception; they do not possess a ptilinum, so they lack the prominent ptilinal suture on the face as in other muscoid flies.^[1] They do still have

a puparium with a circular emergence opening, but it is not as precisely ellipsoid in shape as is typical for other muscoids [1-16].

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Section Acalyprate: A subsection of the Schizophora, which is a section of the order Diptera, the "true flies". In various contexts, the Acalyprate also are referred to informally as the acalyprate muscoids, or acalyprates, as opposed to the Calypterae. All forms of the name refer to the lack of calypters in the members of this subsection of flies [1-16].

Infraorder: Xylophagomorpha and Tabanomorpha.

Superfamilies: Diopsoidea; Empidoidea, Ephydroidea, Lauxanioidea, Nemestrinoidea, Nerioidea, Opomyzoidea, Sphaeroceroidea and Tephritoidea.

Section Pupipara

Section Pupipara disputed group, families may merely be convergent in habit; lay living larvae, adults of both sexes feed exclusively on blood [1-16].

Families: Hippoboscidae, Nycteribiidae and Streblidae.

Suborder Nematocera: Antennae consist of scape, pedicel, and flagellum with numerous similar segments; maxillary palpi with more than 3 segments, often pendulous; anal cell of wing open; larvae usually with well-defined head, mandibles horizontally oppose [1-16].

Infraorders: Tipulomorpha, Blephariceromorpha, Axymyiomorpha, Bibionomorpha, Psychodomorpha, Ptycopteromorpha and Culicomorpha.

Suborder Brachycera

Brachycera is a suborder of insects of the order Diptera, which includes species known generically by the common name of flies. Most species feed on detritus or are predators, including several hematophagous species. This group is distinguished from mosquitoes (suborder Nematocera) by its short antennae, with few segments [1-16].

Infraorder Muscomorpha

Muscomorpha is an infraorder of Diptera of the suborder Brachycera that includes a large and diverse number of insects.

The group includes most of the species belonging to the Brachycera group, and, consequently, most of the known flies, including houseflies, fruit flies, and blowflies. In this group, the antennae are short, usually tri-segmented, with a dorsal ridge [1-16].

Cyclorrhapha section:

Cyclorrhapha is a circumscription name historically used to designate an infraorder of Brachycera, one of the two suborders into which the order Diptera, the flies, is traditionally divided, which included those species whose pupae emerge from the puparium exuvia through a circular orifice [1-16].

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