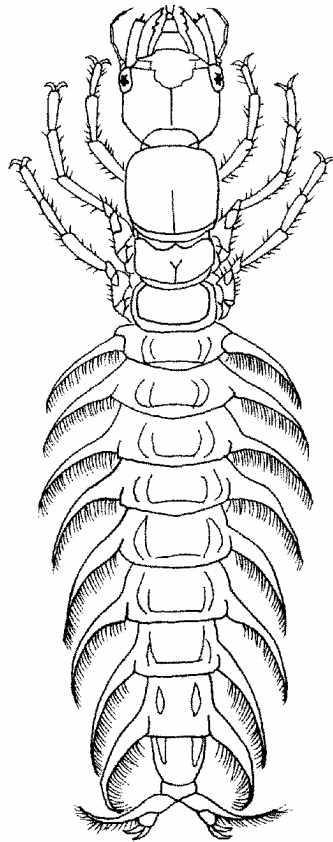


CHAPTER 8

MEGALOPTERA

(Fishflies, Alderflies & Dobsonflies)



Citation:

Bouchard, R.W., Jr. 2004. Guide to aquatic macroinvertebrates of the Upper Midwest. Water Resources Center, University of Minnesota, St. Paul, MN. 208 pp.

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ORDER MEGALOPTERA

Fishflies, Alderflies, & Dobsonflies

There are only two families in the order Megaloptera and they are both aquatic as larvae with terrestrial eggs, pupae, and adults. Megalopteran eggs are laid on vegetation or rocks overhanging the water. Eggs hatch at night, and the newly hatched larvae drop into the water to begin their larval stage. The larvae of both families are predators and are found in a variety of habitats. When megalopterans are ready to pupate, they leave the water and crawl 2-10 m to find a location to pupate. For protection during the pupal stage, the larva digs into the soil or under a log and pupates within the excavated cavity. After 1-4 weeks the adult emerges from the cavity. The adults, some of whom are very large, generally remain in the vicinity of the larval habitat.

Megaloptera Morphology

The abdomens of megalopteran larvae terminate in either a long filament (Fig. 8.1) or two pairs of hooks (Fig. 8.2). These larvae also possess lateral filaments on most abdominal segments (Figs. 8.1, 8.2). In both families each leg terminates in a pair of tarsal claws. In addition, the head and thorax is sclerotized (hardened) while the abdomen is soft.

The position and number of lateral filaments can be used to discriminate between Megaloptera families. Terminal appendages on the last abdominal segment are also diagnostic between the two families.

Key to Megaloptera Families (Larvae)*

1. Last abdominal segment with a long median filament (Fig. 8.1); abdominal segments 1-7 with lateral filaments (Fig. 8.1) **Sialidae p. 109**

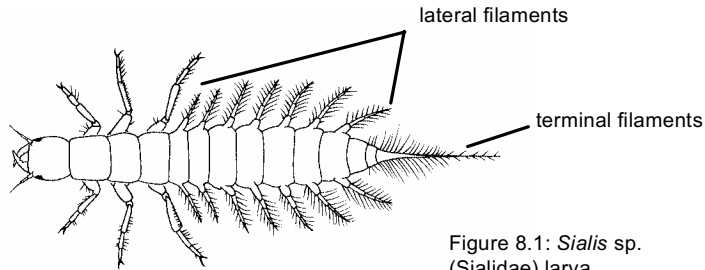


Figure 8.1: *Sialis* sp. (Sialidae) larva, Dorsal View.

- 1'. Last abdominal segment without a long median filament, instead two pairs of hooks present on last abdominal segment (Fig. 8.2); abdominal segments 1-8 with lateral filaments (Fig. 8.2)..... **Corydalidae p. 109**

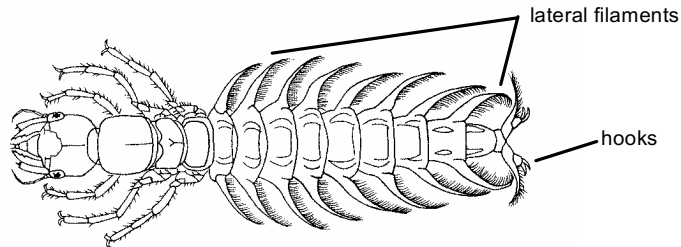


Figure 8.2: *Corydalis cornutus* (Corydalidae) larva, Dorsal View.

* Keys for adults and pupae not provided.

Megaloptera Family Descriptions

Corydalidae

Common Name: Dobsonflies, Fishflies, Hellgrammites

Feeding Group: Predators

Tolerance Value: 0 (Low)

Habitat: Corydalids most commonly live in riffle areas in streams where they are found under rocks. One genus is primarily restricted to standing waters such as ponds and marshes.

Size: Medium to large (25-90 mm)

Characteristics: Elongate, dorsally flattened body; large jaws projecting forward; all three thoracic segments with notum sclerotized; first eight abdominal segments and abdominal segment 10 with paired lateral filaments; fleshy appendages each bearing a pair of hooks extending from apex of abdominal segment.

Notes: Some species of corydalids are very sensitive to pollution while others are very tolerant. For example, species found in standing water are usually tolerant, but species found in streams may or may not be tolerant to pollution. Corydalids leave their hiding places at night to hunt for prey. The larvae, which are sometimes used as bait, are usually called hellgrammites. Many of these larvae are large and can inflict a painful bite when handled.

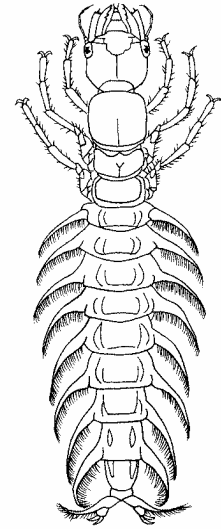


Figure 8.4:
Corydalus cornutus
(Corydalidae) larva,
Dorsal View.

Sialidae

Common Name: Alderflies

Feeding Group: Predators

Tolerance Value: 4 (Moderate)

Habitat: Alderfly larvae live in a variety of habitats including streams, rivers, lakes, ponds, bogs, and marshes. They are most commonly found in standing or slow moving water in depositional areas.

Size: Medium to large (10-28 mm)

Characteristics: Elongate, dorsally flattened body; large jaws projecting forward; all three thoracic segments with notum sclerotized; first seven abdominal segments with paired lateral filaments, each filament with 4-5 segments; abdomen terminating in long filament edged with setae (10th segment).

Notes: Adult alderflies are poor flyers and can be observed flying along the margins of the larval habitat. Adults resemble caddisflies because the wings are held over the abdomen in a tent-like fashion.

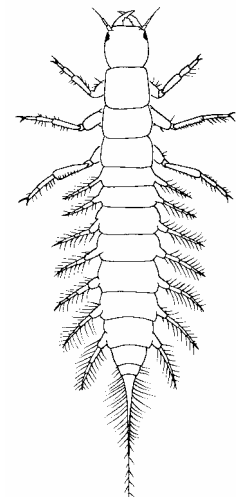


Figure 8.3:
Sialis sp. (Sialidae)
larva, Dorsal View.