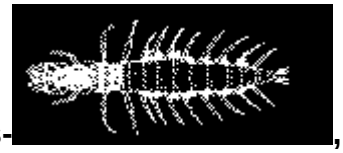
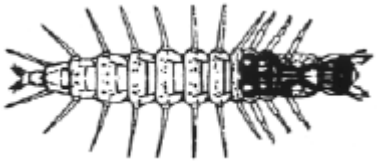
# Chapter X —Order Megaloptera

**(Alderflies-**  **, Dobsonflies-**  **, Fishflies-**  **)**

- (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

The order Megaloptera is a small order of insects in the infraclass Neoptera, division Endopterygota. The Megaloptera are closely related to the Neuroptera (spongillaflies). The Megaloptera comprise only two families, the Corydalidae (fishflies and dobsonflies) and the Sialidae (alderflies).

Larvae of all species of Megaloptera are aquatic and attain the largest size of all aquatic insects. Larval Corydalidae are sometimes called **hellgrammites** or toe biters. The adult Corydalidae are large, having a wing span of up to 16 cm (Megaloptera = “large wing”).

## Life History

Females of this holometabolous order lay elongate eggs in masses on vegetation overhanging the aquatic habitat, on large rocks projecting from the water, or on bridge abutments. After about a week at cool temperatures, eggs hatch at night and first-instar larvae fall into the water. As young larvae swallow air, gas bubbles form in their guts, possibly providing the buoyancy necessary to transport to riffles first instars that land in pools. The metabolic consequences of this air bubble are unknown for most species. Megalopteran larvae go through 10-12 instars before crawling out of the water onto shore to pupate. Some have been reported to pupate as far as 50 metres from the shore.

Most sialids have one- or two-year life cycles, whereas corydalids in cold mountain streams and in intermittent streams may live for up to five years.

## Habitat and Ecological preference

The larvae of the Corydalidae live in clear waters and are predaceous. The Sialidae are also widely distributed but are confined to temperate latitudes. The larvae tend to live in more turbid waters, or at least those with silty or muddy substrates; they prey upon smaller insects.

Some species of Megaloptera inhabit temporary streams. In these ephemeral habitats, the female lays her eggs on the surfaces of rocks on the dry stream bed. Upon hatching, the larvae burrow into the bed to await the return of the water. The larvae feed and grow while the stream is flowing and, as it begins to dry up once more, bury themselves under large rocks on the stream bed where they construct their pupal cells.

**Corydalids are found in well-oxygenated streams and lakes, as well as in productive ponds or swamps where dissolved oxygen may be very low. Sialids occur in the same broad habitat categories, but usually require muddy or silty deposits and accumulated detritus.**

Sialids are classified as burrowers, while corydalids are generally clingers or climbers.

## Feeding

The larvae of both families of Megaloptera are active predators, feeding on aquatic insects, annelids, crustaceans, and mollusks. Little is known about the predatory behavior of these groups, despite their conspicuous presence and apparently voracious appetites. Some classify them as engulfers.

## References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