# Chapter VIII —Order Lepidoptera

## (Butterflies and moths)

- (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

Lepidoptera (butterflies and moths) are closely related to Trichoptera, having diverged from the Trichoptera probably in the early Mesozoic. They belong to the infraclass Neoptera, division Endopterygota. The larvae of only one family of moths, the Pyralidae, have become truly aquatic.

### Life History

Lepidopterans are holometabolous and have 1 to 3 generations per year. Larvae of most species go through 4 or 5 instars before pupating underwater in silken cocoons spun inside either the larval case or the oval pupal case. Adults live for at most 2 weeks. The females of some species are larger than the males.

## Habitat and Distribution

Table VIII-1: Major families of aquatic and semi-aquatic Lepidoptera (Williams & Feltmate, 1992)

| Family | Habitat |
|---|---|
| Pyralidae | lakes & ponds, on aquatic macrophytes (submerged & floating); emergent vegetation; rapid streams & rivers, on cobbles or bedrock; bog pools- includes both free-living forms & leaf miners/stem borers |
| Nepticulidae | lakes & ponds, on aquatic macrophytes especially in emergent zone- primarily leaf miners & stem borers |
| Cosmopterigidae | lakes & ponds, on aquatic macrophytes especially in emergent zone; often in mosses, lichens & algae at margins- primarily stem borers & leaf miners, with some free-living forms |
| Noctuidae | lakes & ponds, on floating and emergent macrophytes- generally leaf miners/stem borers, with some free-living forms |
| Tortricidae | lakes & ponds, on floating & emergent macrophytes- leaf miners & stem borers |

## Feeding

Like their terrestrial counterparts, aquatic caterpillars are strictly herbivorous. The lentic species are leaf miners, shredders, or stem borers. Some lotic species have mandibles specialized for scraping periphyton from stones and have been reported to compete with purse-case-making caddisfly larvae for algae. As adults, many aquatic moths are known to feed on plant nectar an will drink water.

## References


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