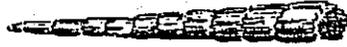




WILD Kids



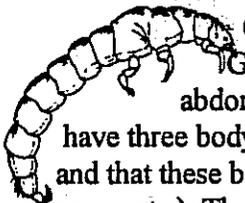
Trichoptera

Trichoptera are an order of aquatic insects commonly called caddisflies. The name caddisfly comes from the 15th or 16th century English word "cadise." At that time, cotton and silk were often referred to as cadise. Peddlers of cotton and silk, called cadisemen, often displayed their wares by attaching pieces of cotton or silk ribbon, braids and yarn to their coats.

There are more than 975 species of caddisflies in North America, and over 4450 species worldwide. Caddisflies are common and can be found near just about every pond, lake, creek or stream. Adults are mothlike. At rest, adults hold their wings over their body and head in a tent-like manner. Adults are nocturnal, resting during the day in a cool place. Eggs are laid in strings or in masses directly into the water, on rocks in the water or on vegetation overhanging water.



Caddisflies play a vital role in freshwater biology and it is the larvae that are important, not the adults. Many types of fish and predacious insects depend upon caddisflies larvae for food. They are an intricate link in the food web.



Caddisfly larvae are long and slender. Gills for respiration are found along their abdominal segments (remember that insects have three body parts - head, thorax, and abdomen, and that these body parts are further divided into segments.). There is also a hook-like appendage on the last abdominal segment. This hook helps to anchor the larvae in their "mobile home" or case.

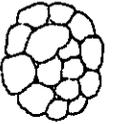
Caddisfly larvae make cases that surround their bodies. These cases protect larvae from predators. Cases also help the larvae maintain their position on the bottom of streams and lakes. Two or more ballast stones are attached to each side of the case to help keep it, and the larva, from floating.



Caddisfly larvae cases are constructed of small objects that are held together with a glue-like substance or silk



(similar to cadisemen.). Materials include objects like sand grains, bits of leaves, pebbles, twigs, strips of vegetation or even small snail shells. Case shape varies also, from tubular to bowl-shaped. Many species of caddisfly can be identified by the type of material used to make its case and its shape.



Most caddisfly larvae are either herbivores or detritivores. Herbivores eat living vegetation. Detritivores eat dead or decaying material, called organic matter. Organic matter can be either vegetable or animal in origin. Caddisfly larvae can be grouped into one of four functional groups, depending on the manner in which they obtain food. These functional groups are: scrapers, shredders, collectors or predators. Scrapers tend to graze on algae that is attached to surfaces such as rocks, sand or wood. Shredders chew the leaves, flowers or stems of aquatic plants. They also chew large organic pieces into smaller ones.



Collectors feed on very small pieces of organic matter, less than 1 mm across. Some collectors are net makers. They will make a net of silk and cast it out into the current. The net filters out fine pieces of material. Caddisfly larvae then gather up the net and feeds on the contents. Other collectors feed on material that has settled to the bottom of the pond or stream. Finally, predacious caddisfly larvae eat other aquatic arthropods. Predacious caddisfly larvae do not make protective cases, but may construct shallow burrows from which they ambush prey.

Caddisfly larvae and adults are easily found in Arizona. All one needs to do is find a pond or stream. To find the larvae, look for a clear, shallow area along the edge. Then look for objects that you would not expect to move, such as bundles of vegetation, mounds of pebbles or ridges of sand. These objects are caddisfly larvae in their cases. Happy hunting!



Activity I: Larva Verses Adult

Many aquatic insects undergo metamorphosis. Metamorphosis means "change during growth." There are two type of metamorphosis - simple and complete. In simple metamorphosis, the egg hatches into a nymph. Insect nymphs have essentially all the features of an adult. As they grow they are similar at each stage.

Larva hatch from eggs of insects that undergo complete metamorphosis. The larva grows through several stages, then forms a pupa. Pupae are usually stationary (do not move about) and are encased in a protective covering.

Once the pupae finish growing, adults emerge from the covering. Adults at first are soft and pale-colored, but will harden and darken in a short period of time. There is little resemblance between the adult, pupa and larva.

Below you will find two groups - adult and larval/nymph stages of a few aquatic insects. Match the adult form on the right with its corresponding larval/nymph stage on the left. You may need to do a bit of research to complete this activity. Try using the Peterson Feild Guide to Insects.

