

and compare its locomotion on land with its locomotion on water.

Do they live singly or in colonies? Are they shy or otherwise?

Throw an insect, such as a small grasshopper, near some water-striders, and note the action of the latter. What is likely to happen to an insect that falls into the water where there are water-striders?

"Water-striders are dimorphic — that is, there are two distinct forms of fully developed individuals in each species. One form is winged, the other wingless." Try to procure both forms.

Do the striders belong to the order of bugs or beetles?

All the insects mentioned in the foregoing pass practically their whole life cycle in the water, all are provided with wings, by the aid of which they migrate from pond to pond, and all respire air in the adult stage. In sharp contrast with these, most insects are terrestrial and aerial, passing their whole life cycle surrounded by air; others again live only part of their life cycle in the water, the adult stage being passed as terrestrial and aerial forms. For an example of the latter, review the life history of the mosquito. See REVIEW, September 1914, page 59.

The mosquito is a good subject for school study. Collect several larvae in a fruit jar, cover with a cloth, and watch their metamorphosis. To what order of insect does the mosquito belong? Compare the life history of the house-fly. Does it pass part of its life-cycle in the water? Give lessons on the economic importance of these forms.

Chief among our common insects that pass the larval stage only in the water are the caddis-flies, dragon flies and May-flies.

With a strong dip-net collect small sticks, stones, and other sedimentary material from the bottom of ponds and streams. A long handled dipper or bucket may be used to advantage in gathering material in shallow water. For observation place this material in glass dishes — fruit jars, etc., and as the water clears watch for animal life.

At the bottom you will likely find several masses of small cross-piled sticks moving slowly along. Observe closely and you will soon find that the mass is in reality a little case, with a

small animal inside. Note the protruding head and the three pairs of legs on the segments next the head.

This is the larva of a terrestrial aerial four-winged insect, the caddis-fly. It is a wonderful little larva, and as it spins a coat of silk it fastens in among the threads little bits of sticks or stones, and by this means so thoroughly disguises itself that its worst enemy passes it by unnoticed or fears the formidable appearance of such a rough looking little fellow.

Place a larva in a shallow dish and touch its protruding head with a straw. What happens?

Some caddis larvae build their cases of stone, and others even of small shells. Collect as many kinds as you can find, and keep in an aquarium with a supply of water plants. On what do they feed?

The larvae are mostly free moving, but some are attached by silken lines to sticks and stones.

The larvae or nymphs of dragon-flies are not provided with protective cases, being quite capable of taking care of themselves. When full grown they leave the water to undergo their last molt, and the skin cases, exuviae, are often found in abundance, during May and June clinging to sticks and stones near the water. Look for such skin cases, and note the longitudinal opening in the dorsal side of the thorax; through it the winged form emerged to enjoy a new life in the air.

To day I saw the dragon-fly,
Come from the wells where he did lie;
An inner impulse rent the veil
Of his old husk; from head to tail,
Came out clear plates of sapphire mail,
He dried his wings; like gauze they grew;
Thro' crofts and pastures wet with dew,
A living flash of light he flew.— Tennyson.

The dragon-fly or devil's darning-needle is too well known to require any description. Note that it has two pairs of nearly equal wings, which it always holds level with its body when at rest; a near relative, the damsel-fly, folds its wings nearly parallel with its body when resting. Collect specimens of both kinds and compare them. In which are the eyes closer together? This is a constant distinguishing feature.

These flies feed on other insects which they capture on the wing. They have voracious appetites and eat large quantities of mosquitos and flies. Many superstitions have become