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common name	Water Mite
scientific name	<i>Hydrachna</i> species
phylum	Arthropoda
subphylum	Chelicerata
class	Arachnida
order	Acarina
family	Hydrachenellae
habitat	vernal pools, other ponds and slow moving streams
size	2 to 3 mm long
description	Several species of Water Mites live in vernal pools. The most obvious one looks like a fat spider with a bright red, round body. It has eight small legs attached near the front end of its body. You can find the adult swimming on the surface of the pools, or scrambling around eating plants underwater.

fun facts

The larva of this red species of Water Mite is a [parasite](#) on the Water Boatman. The Water Boatman is a common insect in vernal pools. The Water Boatman helps the Water Mite larva in two ways. It shares its energy and provides a free taxi service. The Water Mite larva attaches to a Water Boatman and sucks out some of its body fluids for energy. When a Water Boatman flies to other vernal pools, it carries the Water Mite larva along. One Sacramento scientist collected 100 Water Boatmen from a vernal pool. He marked each one with a tiny drop of nail polish. Two weeks later, he found two of the marked bugs in a vernal pool 70 miles away! Any Water Mite larvae on those two Water Boatmen got a long ride to a new vernal pool.

life cycle

Water Mites go through four stages of life: egg, larva, nymph and adult. When a vernal pool fills with water, the larvae hatch out of the eggs. Each larva needs to find a Water Boatman to parasitize. The larva will cling to the outside of a Water Boatman until the larva is fully grown. Then it drops off the host and turns into a nymph. The nymph is a predator that swims in the vernal pool. When the nymph is ready to become an adult, it clings to an underwater plant and changes into its adult form. After finding a mate, the female produces a jelly-like glob of eggs, which she attaches to a plant. Then she dies. The eggs remain there as the pool dries up. They are adapted to survive the long, hot summer. When the winter rains fill the vernal pool, the Water Mite repeats its life cycle.

ecology

When a Water Mite larva hatches, it attaches to a weak spot in a Water Boatman's exoskeleton (outside shell), usually near the head. The larva sucks body fluids out of the Water Boatman. The larva eventually drops off its host and molts to become a nymph. The nymph is a predator that grabs young Water Fleas and Seed Shrimp. It sucks nutritious juice out of them with its piercing mouthparts. It also snacks on Aquatic Snails. Then the nymph turns into an adult. The adult is an [herbivore](#). It feeds on plants in the vernal pool to gather the energy to search for a mate and produce eggs. Biologists have not reported which species prey on the Water Mite eggs, larva, nymphs or adults. However, it is likely that they are eaten when Mallards and other ducks filter vernal pool water with their bills.

investigate

The bright red color of an adult Water Mite probably comes from the food it eats. This bright color seems like it would attract predators, much like a red sign that says, "Eat me". However, sometimes bright colors act as a warning sign to predators to say, "Remember me? I tasted bad" or "I made you sick once". Identify another critter in vernal pools that is bright red. Talk to the student studying this species to see what eats it. Think about ways you could discover what eats Water Mites in vernal pools.

Sometimes species have bright colors to help attract a mate. Some of the male birds in the vernal pool grasslands have bright colors to attract females. Talk to your classmates to discover which bird species use color this way. Is it possible that the bright red of a Water Mite adult helps it to attract a mate? Can you think of ways you could investigate this hypothesis?