Palo Alto
BAYLANDS

Microscopic Crustaceans

Nature Notes

Crustaceans are a very large family of animals, all of which have a hard external chitinous shell, jointed appendages, two pairs of antennas, and feeding appendages called mandibles and maxillae. Crabs, lobsters, and shrimp are three common crustacean families, and there is a wide range of species sizes in all of these families.

Some crustaceans however are microscopic, smaller than the period at the end of this sentence. Like their larger cousins, they are also important parts of the food chain, but at the lowest end. They feed on phytoplankton (algae and diatoms) and in turn fall prey to other crustaceans, fish, and even whales. These microscopic crustaceans are found in all the oceans of the world and most fresh water bodies as well. Two different types are especially prominent in the San Francisco Bay waters: *Ostracods* or seed shrimp, and *Copepods* or one-eyed shrimp.

Ostracods have a shrimp-like body housed inside two hinged carapaces - transparent clam-like shells. A dark eye spot may be seen through the carapace. Overall, this gives the impression of a seed, hence the name *seed shrimp.*

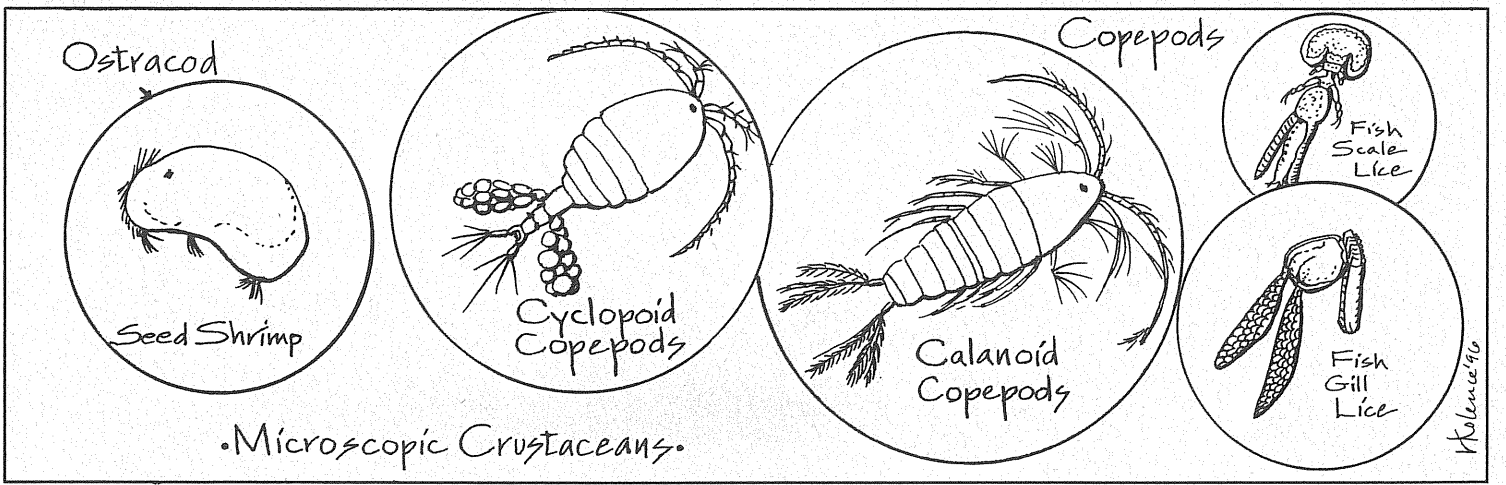
Most Ostracods feed only on phytoplankton using filters in their mouths, but some species are scavengers, parasites, or predators. A few Ostracod species are not so tiny, growing as large as an inch or so. About 70% of Ostracods are marine, with the others inhabiting freshwater. They can reproduce with or without fertilization by the opposite sex.

Copepods usually have a bulging head end and a skinny tail, but sometimes are more tapered. They have two pairs of antennas and many pairs of legs. They have a single eye spot between the antennas, which is where they get their common name, the *one-eyed shrimp.* Female Copepods may have one or two egg sacks near the end of their bodies.

Copepods are also called fish lice because they are common parasites on marine animals. Some move to various places on their hosts, but many are permanently attached to the mouth, gill cavities, or gill filaments. They can cause serious damage to their hosts. Some Copepods burrow into the flesh, and even the heart, of their host fish.

Copepods are prominent in both fresh and salt waters, and are very common in San Francisco Bay waters. They vary considerably in size and shape.

Edited and Illustrated by Virginia Kolence



City of Palo Alto Department of Community Services