Freshwater Crustaceans

Amphipods
Species: *sp.*
Genus: *Gammarus*
Family: Gammaridae
Order: Amphipoda
Class: Malacostraca
Phylum: Arthropoda
Kingdom: Animalia

Copepods
Species: *sp.*
Genus: *Cyclops*
Family: Cyclopidae
Order: Cyclopoida
Class: Maxillopoda
Phylum: Arthropoda
Kingdom: Animalia

Ostracods
Species: *sp.*
Genus: *Cypris*
Family: Cyprididae
Order: Podocopida
Class: Ostracoda
Phylum: Arthropoda
Kingdom: Animalia

Conditions for Customer Ownership

We are a USDA compliant facility and hold all necessary permits to transport our organisms. Each state is assisted by the USDA to determine which organisms can be transported across state lines. Some organisms may require end-user permits. Please contact your local regulatory authorities with questions or concerns. To access permit conditions, click here.

Never purchase living specimens without having a disposition strategy in place. Live specimens should not be released into the wild! Please dispose of any unwanted organisms using the guidelines below.

Primary Hazard Considerations

Wash your hands thoroughly after handling freshwater crustaceans.

Availability

Our crustaceans are cultured in our labs and are available year-round.

Immediate Requirements

- Your crustaceans will arrive in a 4 oz. plastic jar with water. Your amphipods will come with a small piece of aquatic plant to cling to. Upon arrival, loosen the lid to allow air exchange.
- We over-pack each order of crustaceans. It is normal to have some deceased crustaceans in the container. You will receive at least the quantity of live crustaceans stated on the container.
- The crustaceans should be transferred to their new habitat as soon as possible. If you cannot transfer them immediately, aerate the water in the jar with a pipet.
- Amphipods are shrimp-like freshwater crustaceans that range from a few millimeters to about 1 cm in length. Copepods are very small crustaceans, about 1 millimeter in length. To the naked eye, they appear similar to immature Daphnia, but can easily be distinguished by their forward darting movements. Ostracods are a type of bivalve crustacean that move by rapidly beating their antennae. They range from about 0.5–3.0 mm, depending on the species.

Captive Care

Habitat:

- Amphipods will do well in many aquatic systems, but for ease of collecting, they are best kept in clear plastic jars filled with pond water and pieces of aquatic plants. An air stone can be added to the habitat. The amphipods can be collected with a pipet or rinsed from the plants.
- Copepods can be kept in any tank with gentle aeration. A soil or peat humus substrate will provide proper water conditions.
- Ostracods can be kept by placing them in a clear jar of pond water with a small amount of plant material and one or two wheat seeds. The ostracod shell is shed with each molt, so empty shells will accumulate on the bottom of the culture container, and should not be taken as a sign that the culture is failing.

Care:

- Amphipods are detritivores and feed on decaying plant matter.
- Copepods feed on algae, Euglena, or Paramecium.
- Ostracods feed on filamentous algae.

Information

Method of reproduction:

- **Amphipods:** Sexual. During mating, the males carry the females on their backs. Paired individuals feed and swim about for up to a week or until the female is ready to molt. The two animals separate for a short while as the female sheds her old shell. The two pair up again, and mating occurs shortly thereafter.
- **Copepods:** Sexual. Males locate females by following their pheromone trails in the water. Males place a single sperm packet on the female's abdomen. The sperm escapes the packet, enters the female's body through the opening of her reproductive system, and is stored in special sacs.
- **Ostracods:** Sexual. The male must transfer sperm to the female using a special long leg, and then the eggs are laid.

Determining sex:

- **Amphipods:** Some species have morphological characteristics that differentiate males from females, such as an enlarged male posterior leg.
- **Copepods:** Males generally have a modified fifth leg used to transfer the spermatophore to the female during mating. Tufts of fine spinules on the end of the leg are also used in this transfer.
- **Ostracods:** In many species it is impossible to determine gender from a study of the shell alone. In others, though, it is possible to distinguish male from female by a pronounced difference in the form of the carapace.

Life Cycle

- **Amphipods:** The female keeps the fertilized eggs in a brood pouch, or marsupium, where the eggs hatch after 1–3 weeks. Hatching occurs after all the appendages of the embryo have developed. The young usually remain in the mother's marsupium until it is delivered by the female.
- **Copepods:** Eggs are sometimes laid directly into the water, but many species enclose them within a sac attached to female's body until they hatch. The eggs hatch into nauplius larvae, which consist of a head with a small tail, but no thorax or true abdomen. The nauplius molts five or six times, before emerging as a "copepodid larva". This stage resembles the adult, but has a simple, unsegmented, abdomen and only three pairs of thoracic limbs. After a further five molts, the copepod finally takes on the adult form. The entire process from hatching to adulthood can take anything from a week to a year, depending on the species.
- **Ostracods:** Eggs are either laid directly into the water as plankton, or are attached to vegetation or the substratum. However, in some species, the eggs are brooded inside the shell, giving them a greater degree of protection. The eggs hatch into nauplius larvae, which already have a hard shell. The larva molts eight times before reaching adulthood.

Wild Habitat

- There are marine, freshwater, and terrestrial species of crustaceans found all over the world.
- Predators of freshwater crustaceans include fish, other crustaceans, and insect larvae.

Special Notes

- Many species of copepods have neurons surrounded by myelin, which is very rare among invertebrates. Even rarer, the myelin is highly organized, resembling the well-organized wrapping found in vertebrates.
- Ostracods have a long and well-documented fossil record from the Cambrian to the present day. Freshwater ostracods have even been found in Baltic amber of Eocene age, having presumably been washed onto trees during floods.

Disposition

- In order to protect our environment, do not release any of these organisms into the wild. When you are done with the crustaceans, add bleach to the culture and dump it down the drain.

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