

THE TADPOLE SHRIMP

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Like the fresh water fairy shrimp, the Tadpole Shrimp provides a good substitute for the well known brine shrimp resting eggs. They hatch into larger nauplii and are easier to maintain on account of being fresh water organisms. The 3/4 to 7/8 inch adults makes an excellent live food for our larger aquarium fishes.

The Tadpole Shrimp (Triops longicaudatus) are also known as Apus longicaudatus. They are common in temporary sloughs frequented by wild ducks in Saskatchewan and Montana where species of the very similar Lepidurus genus are also common along the border westward. In North America, there are only two known species of the Triops genus, and about five species of the Lepidurus genus. Both genera are much alike except for the last segment (telson) to which the two tail furcas are attached. In Triops species the telson does not extend between the two furcas, and in Lepidurus species the telson extends between the two furcas, and forms a paddle-like appendage. The T. longicaudatus are known to be a nuisance in the rice fields of California where they stir up the mud and chew the rice plant leaves. The Mexican use them to make a delicacy food dish.

Tadpole Shrimp are most easily recognized by their flattish horse-hoof contoured carapace that only covers the front dorsal half of the body. The two kidney shaped compound eyes are located close together on top of the carapace at the front end. Some of the internal organs can be seen through the transparent carapace and resemble a horse-shoe. They have three limb appendages that extend beyond each side of the carapace near the front end. The rear end trunk is flexible and appears segmented and terminates into two long tail furcas. They are reddish in color due to hemoglobin in their blood stream. They swim gracefully in a gliding motion, dorsal side upward. They have a tendency to forage among the bottom sediment and stir up the mud.

It is said that some species of Tadpole Shrimp reproduce parthenogenetically and some hermaphroditically, depending on the specie and the climate of their natural habitats. But if sexual relationship is observed it would indicate that sexual reproduction also occurs for that particular specie. Regardless of their breeding habits, they seem to produce only hard shelled resting eggs that resist summer desiccation and winter freezing, and hatch the following spring when water and proper temperature returns. With some species in mild climates a second or third hatch may occur during the summer months, when the pond dries up and refills again after a heavy rainfall. It is known that the resting eggs remain viable for a few years in a dry condition.

The eggs remain in the ventral brood pouch for only a short time and are dropped on the bottom. After the eggs are conditioned by drying and freezing, they hatch into nauplii in a couple of days in fresh water at temperatures from 60 to 70 degrees F. The nauplii develop into reproducing adults in about 15 days. Their life span is about one month, and they may produce only one or two batches of eggs during that time, depending on the species and how long the water lasts in the temporary habitat. There is only one generation at a time occurring in a pond, because the eggs have to dry before they can hatch to produce another generation.

The natural habitat of the Tadpole Shrimp is in temporary ponds with standing, muddy, alkaline fresh water. They are sediment feeders, but also feed on plants and animals near the bottom, and they capture swimming organisms above the bottom by flopping themselves over them and tear them apart into bite size.

Tadpole Shrimps are easy to culture in shallow aquariums because they will feed on fresh and prepared plant and animal matter that preferably settles on the bottom; but they feed also on floating lettuce and spinach leaves, etc., and on raw beef liver, and scrambled eggs. Dietary products such as desiccated liver, alfalfa, or spinach tablets, and veterinary calcim tablets (Calcidee) may also be used. Feed them with a variety of food every two days, using just enough of the food so that it will be consumed in two to three hours.

A culture of Tadpole Shrimps can be started with young shrimps collected from their natural habitat by netting or scooping them out with the bottom sediment and with some of the pond water, perhaps in late June when they seem to be most abundant in most areas. The dry sediment from a temporary pond that was populated with shrimps before it dried up will also do. Place the whole collection in a shallow aquarium filled with rain or pond water which was previously treated with dissolved sodium bicarbonate to the pH value of their natural habitat, perhaps to pH values of 7.2 to 8.0. Add some extra fine sediment such as screened pond muck, and provide mild aeration, subdued light, and a temperature of about 70°F. Feed them as previously stated. After the shrimps have lived through their natural life span of about one month and deposited their eggs on the sediment, drain out the water and let the sediment dry up completely. After drying the mixed eggs and sediment, condition the mixture with a few freezes and thaws by placing the mixture in and out of the freezing compartment of a refrigerator for a few hours each time. After those conditioning treatments, the resting eggs are ready to start a new culture. In repeated monthly cultures, the eggs don't have to be removed from the sediment when conditioning them for hatching, they can be left to accumulate until needed for separated distance shipping.

Under proper management, cultures can be started and maintained at any time of the year. The freezing treatment may not be required with some species of Tadpole Shrimp. In a well populated culture, the resting eggs can be collected with the sediment and placed in a dish with a little clear water and the eggs sorted out with a small eye-dropper and permitted to dry. Then the eggs can be mailed dry over long distances in small plastic coin or stamp envelopes, and would be worth whatever you feel like charging for them.

While looking for Tadpole Shrimp, you may find the rare and valuable 1/2" Paddle Shrimp (*Thamnocephalus*) which is recognized by its long, almost body-length comb like head appendage, and rounded, paddle like tail. Their habitats and habits are similar to those of the Tadpole Shrimp, and some have been found in temporary ponds with fresh water Fairy Shrimps out west.