HOW ABOUT BARNACLES?

By Charles Keller, Jr

Have you ever considered barnacles in your marine tank? Neither had I, until one wintry November morning, while beach-combing the shores of the Calvert Cliffs of the Chesapeake Bay, I happened upon a piece of driftwood with several barnacles encrusted on it. Curiosity is the mother of discovery, so I put a small amount of bay water into my one gallon plastic pail (which I always take with me on one of these forays), and placed the driftwood into it.

When I got home, I took my dubious treasure and placed it into my "Bay" tank. In about thirty minutes, I was rewarded with a stirring of life. Two of the barnacles began their characteristic combing of the water for some hopeful goodies in the form of microscopic plankton.

Barnacles belong to the phylum Arthropoda, class Crustacea, order Cirripedia. They begin life from hermaphroditic parents as free-swimming nauplii until they are fortunate enough to find a suitable substrate in the form of floating objects, oyster shells, mussels, rocks, or anything else not already occupied; and sometimes even when it is occupied. Immediately, they attach themselves by means of their antennules and begin the building of their home, which consists of a rounded, very hard, six sided, calcareous shell looking somewhat like an igloo with an open top. The closure to this opening is a trapdoor-like structure consisting of four triangular pieces of shell of the same substance as the main shell called an operculum. The animal itself is a soft bodied creature. It opens and closes its operculum at will. While feeding, it opens the trapdoor and sweeps the water with its "feet" (very delicate appendages looking like curved bird feathers). As it sweeps the surrounding water, it traps microscopic particles of food and literally "kicks" food into its stomach with its feet. It releases waste matter and detritus through the same opening.

There are numerous species of barnacles ranging from the common Rock Barnacle (Balanus eburneus), Goose Barnacle (Pollicipes polymerus), which perches on a long, leathery stalk of its own making, to the huge three inch diameter Whale Barnacle (Coronula diadema), found growing on the hides of many of the northern sea whales. They are found in nearly all parts of the world and offer no economic asset to mankind. Conversely, they form a very detrimental aspect by fouling the bottoms of sea craft to actually cause as much as a 50% power loss. There have been many attempts to control this obvious problem, but the only sure way is to remove the vessel from the water and scrape it.

My barnacles (Balanus eburneus) have been with me for well over six months and have acclimated themselves to taking fine particles of typical flake food and occasional feedings of newly hatched brine shrimp. Temperature is of no consequence since they are found under all temperature ranges. Water salinity apparently is not critical as again they are found in all seas, and are very common in estuaries such as the Chesapeake Bay. However, my barnacles are kept at a temperature of about 74° and a salinity of about 1.010 and a pH of about 8.4. The tank is equipped with an undergravel filter and an outside power filter. Natural Bay water is used as is a three inch layer of natural sand taken from the Chesapeake Bay shores.

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Perhaps one of the most surprising happenings was to see, one morning, that a blessed event must have taken place. Low and behold, there, on the stem of the undergravel filter was the typical igloo-shaped shell of a young barnacle.

One word of caution. Do not put barnacles in the presence of starfish, which happen to take a peculiar liking to the taste of barnacles. Otherwise, no marine decor is complete without its complement of barnacles.

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in one aquarium, and perhaps I should have kept only six.

After about a month I decided to experiment with breeding these fish, and dropped the water temperature to 77 degrees F. and kept it there for a few days. I then raised it to 83 degrees to see if temperature rises would trigger spawning activity. Indeed it did, as the males became quite active, dancing around the females and luring them into their shells. Due to the large number of competitive males, the only successful ones were the larger males that had set up homes in small conchs. The male and female would enter the shell and their little bodies would simultaneously quiver in a typical egg laying activity. The male would then chase the female out of the nest and guard the eggs. Several females would often be part of the ritual. The eggs were adhesive and elliptical, the long axis measuring about 0.7 mm. Since this fish can live in stagnant water, I had no qualms about removing a portion of the eggs from the nest and watching development in a plastic cup. After being removed, I noticed that the eggs stuck together at one end. As the growth of the embryo increased, it was evident that the tails were all glued together, and the heads of the fry came out of a central point like a starburst. Hatching took place in four to five days, and the fry were free-swimming several days later. I had success to this point many times. The adults were very prolific. The fry, however, would not accept newly hatched brine shrimp nauplii, and by the time I realized this, the weather had turned cold and it was impossible to go to the bay to gather food. "Having little experience with breeding salt-water species before, I have no knowledge on how to grow salt-water infusoria cultures.

Perhaps this summer I will again be lured by this pretty little fish and collect some more. I hope I will by then have worked out the problem of first food for the fry. If any of you have had some experience with this, please let me know.