

THE NAKED GOBY

By Robert T. Rosen

One of the more delightful species that can be called native is the Naked Goby, Gobiosoma bosci. This small member of the goby family is found in brackish and salt water all along the east coast of the United States. I realize that not everyone has access to such salt-water species, but those of us that do should consider their desirability and beauty.

I introduced the Gobiosoma bosci to an aquarium, but not before I had given the gobies' natural requirements much thought. I had captured this fish many times while collecting killifish, in Barnegat Bay, New Jersey, and in Oyster Creek, a stream warmed by the effluent from the local nuclear power plant. The gobies migrate to the New Jersey coast in late July, and this indicated warm water was a prime requirement for this species. But Barnegat Bay is at best 50% salt water on the mainland side of the bay, and in summer the water becomes so stagnant that its temperatures reach 90 degrees F. or more. In addition, when it rains, the salinity in the bay drops, and the rain and the flooded streams in the area rapidly drop the pH on the mainland side of the bay from basic to acid. Indeed, the species is very hardy and can tolerate wide fluctuations in water chemistry.

I set up a typical 29 gallon salt-water aquarium using bay water from which the gobies were to be taken. Collecting was a little difficult, as seines would easily pass over this little bottom dweller. My umbrella net would gather up a mess of crabs, but few gobies. I then tried a typical minnow trap made out of wire mesh and which has funnel-shaped entries at the ends. This seemed to work as I caught a few of the gobies (and a lot of killifish and mosquitofish). But I soon noticed that the thin gobies had enough instinct to try and dive through the wire mesh as I was hauling in the trap. While they are 1-1½ inches long, the fish are thin enough to fit through the mesh. I also found out that the gobies would not come in through the funnels, but would hang onto the side of the trap, inspect the contents, and then hop in through the sides. So I set the trap close to me, was very quiet, watched carefully, and hauled in very fast. I soon collected about a dozen and a half, and felt this adequate to study the fish further.

When I introduced them to my aquarium, the gobies hid behind the various pieces of coral, conch, and clam shells I set out for them to live in. I set the aquarium up for a specific gravity of 1.01 (50% sea water) and at a temperature of 80 degrees F. The pH was kept on the basic side, about 8.0. Obviously, since I captured them with bread, live food was not a prime requirement. The next day, however, I fed them adult San Francisco brine shrimp, and in two minutes a small portion was eaten. This treat lasted only a few days and then their diet was converted over to mainly frozen brine shrimp. Anyone who has kept a tank of darters will know exactly how these little bladderless fish greet you at feeding time, jumping up and down excitedly.

The male gobies set up territory after only a few days. The females were all kept in groups in various corners of the aquarium. The sexes were easy to distinguish, as the males were purple, and the female's body is light brownish. The males were extremely pugnacious, and within two weeks, all of the fish had big bites taken out of their dorsals. I realized that because of territorial requirements I had put too many of the little fish

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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.