

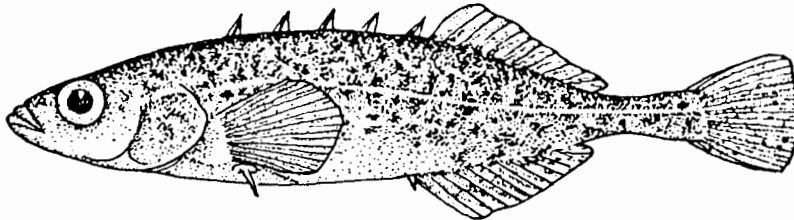
7/17/82



Natural History Notes

MIKE DOMBECK grew up in the Moose Lake area, graduated from Hayward High School, and attended the University of Wisconsin-Stevens Point and the University of Minnesota. He has a B.S. degree in Biology and an M.S. degree in Aquatic Biology and Zoology. Mike has taught Zoology at the University of Wisconsin-Stevens Point and is now a fisheries biologist with the U.S. Forest Service, living in Park Falls, Wisconsin.

The Brook Stickleback



Brook stickleback, *Culaea inconstans*

The brook stickleback is a very common fish here in Wisconsin. Because of its small size it is generally unknown; however, if you are an angler who uses minnows, you have undoubtedly seen many brook sticklebacks. This fish is a member of the Stickleback Family whose species occur across the northern hemisphere and include several marine species. They are also closely related to sea horses and pipefishes.

An adult brook stickleback is usually a slender fish about 2-3 inches in length. As the name indicates, it has spines on its back. These five dorsal spines are a distinguishing characteristic of the species. Various species of sticklebacks have from three to nine dorsal spines. For example, the ninespine stickleback also occurs in Wisconsin but is less common than its close relative, the brook stickleback. Count the dorsal spines and you will know which species you have.

The brook stickleback is a wide ranging species in north-central North America. It commonly inhabits cool, clear streams and the shallows of lakes and is common in the bait bucket as an incidental fish. It is not considered to be a good bait fish; however, anglers occasionally catch fish using a stickleback.

The spawning behavior of this fish is most interesting and well known. This classic of animal behavior is included in most basic biology courses. In the spring of the year when water temperatures reach about 50°F the male constructs a nest about the size of a golf ball. The tunnel shaped nest is made of bits of vegetation

glued together with mucus. The nest has an entrance and an exit just large enough for the fish to swim through. At this time, the male takes on his breeding colors, dark on the back with a reddish belly. While in breeding condition and full of eggs, the female has a whitish to silvery bulging abdomen. Here an important function of color in animals is shown. The male will chase anything that appears red out of his territory thinking it to be a rival male. During the experiments which revealed this curious behavior, a red delivery truck went by the window where the aquarium sat. The male stickleback made a charge toward the red truck in defense of his breeding territory. The red coloration is a very important signal to the male stickleback.

In contrast, if a female with a bulging silvery egg-filled abdomen approaches the territory, the male attempts to entice her toward his nest. This involves a highly ritualized "zig-zag" dance which, if successful, ends when the female enters the nest. Now the male bumps her on the side near her tail with his snout which stimulates her to deposit her eggs, usually 75 to 100. He then chases her out of the nest and swims in to fertilize the eggs. Then, repeating the ritual, the male will attempt to entice other females to spawn in his nest. He valiantly defends the nest from predators until the eggs hatch, usually within two weeks.

This little fish is easily kept in a simple home aquarium and can provide hours of entertainment. Perhaps you will find the "zig-zag" dance of the stickleback both fascinating and educational.