

OBSERVATIONS ON AQUARIUM MAINTENANCE OF THE SKILLETTFISH,  
GOBIESOX STRUMOSUS by C.A.E. Bergesen, Bethesda, MD

An interesting fish little known to aquarists, the Skilletfish, Gobiesox strumosus Cope, enjoys wide distribution in tidal waters on the East Coast from the mid-Atlantic states to Florida (Hildebrand and Schroeder 1927). There are a large number of Gobiesocids--or clingfish, as they are commonly known--found worldwide in both temperate and tropical coastal waters.

Relatively little work has been done on the species, insofar as can be determined. Several papers dealing with the life history and ecology of the Skilletfish are available (Martin and Martin 1972, Runyan 1962, Saksena and Joseph 1972), with the Runyan paper by far the most ambitious. Other ecological data can be inferred from such works as the revision of the genus published by Schultz (1944). Hildebrand and Schroeder (1927) also provide a limited amount of ecological data.

According to Runyan (1962), the Skilletfish is nearly always closely associated with empty oyster shells, which provide the main spawning location for the fish. Skilletfish have also been captured in eel grass flats in company with sticklebacks and other fish (Runyan 1962). While this species has been collected by trawl at 110 feet (Hildebrand and Schroeder 1927), it should certainly be considered a shallow-water, benthic species.

Near Chesapeake Bay

Several years ago, I began my first experiences maintaining Skilletfish after bringing home some half-dozen specimens from a collecting trip to the lower Rappahannock River in Virginia's Northern Neck. These clingfish were captured in shallow, somewhat turbid waters that reach temperatures in the mid-70s by the end of the summer. Salinity varies widely, as the collection site is only two miles upstream from the Chesapeake Bay.

The Skilletfish were caught immediately offshore using a hand net dragged up the face of a clay shelf about 18" high. The bottom in this area, only two feet under at low tide, is composed of sand with some silt. The top of the clay shelf is dry at low tide. Higher plants are entirely absent, though various kinds of algae (both red and green) are to be found floating and attached at the shoreline. In the immediate vicinity of this collection site live a blenny (probably Chasmodes bosquianus, the Banded Blenny) and a killifish (probably Fundulus heteroclitus); grass shrimp (Palaemonetes sp.); juvenile Blue Crabs; and lots of sea nettles, which tend to make summer collecting trips difficult on occasion.

### Odd-looking

Once captured and examined closely, clingfish can hardly be mistaken for any other fish. They have a broad body, depressed anteriorly, with small eyes set on top close to the mouth. The dorsal and ventral fins are set fairly far back on the body. By far the most notable physical attribute of the family (Gobiesocidae) is the enormous sucking disc, a modification of the pelvic fins, which enables individuals to cling securely to almost any surface.

Seen from above, Skilletfish look much like large tadpoles. Color is extremely variable and the fish darken and lighten rapidly depending on substrate. Various blotches, bars, and stripes may be present. On a sandy or silty bottom, they are difficult to see.

Also notable is the large mouth, equipped with remarkably strong teeth. Adults are capable of giving a good pinch, especially when they enter their "feeding frenzy," but more on that later. According to several accounts of the feeding habits of Skilletfish in the wild, their diet seems to consist primarily of amphipods and isopods with an occasional annelid (Runyan 1962). They appear to be entirely carnivorous. In the aquarium, Skilletfish are not loath to attack organisms of their own size.

According to Runyan (1962), Skilletfish spawn in late June and July, and large numbers of juveniles may be collected in late summer. Newly collected specimens acclimate smoothly to aquarium conditions. I have kept them both in slightly brackish water (1 to 5 ppt) and in aquarium-strength seawater. Their dissolved-oxygen requirements seem to be relatively low, on the basis of not very scientific observations that they are the last to die in a collecting bucket. Saksena and Joseph (1972) found that Skilletfish larvae had a lower oxygen demand than larvae of two other common estuarine fish found in the same locale. Temperature would also seem to be relatively unimportant. In short, physiologically, Skilletfish appear to be fairly durable estuarine organisms.

### Aquarium Care

While Gobiesox strumosus is a small fish (maximum length of my specimens was two to two-and-one-half inches), they should probably not be kept in tanks much smaller than 15 gallons. A bottom of Number One fine gravel with chunks of tufa, coral rock, and oyster shells has proven satisfactory. The fish become more territorial as they grow, so ample cover is necessary. They were observed to be aggressive towards each other; after raising some to adult size, I began to experience losses, probably from overcrowding and resultant fighting. Skilletfish proved to be fairly active during the day, a conclusion not in agreement with Runyan (1962).

Feeding Skilletfish is simplicity itself. My specimens ate everything that was offered to them, including flake food, frozen food, frozen brine shrimp, chunks of smelt, fresh fish of various kinds, and various pelleted food. When their tank was being fed, the Skilletfish would dart from their caves and hiding places and cluster on the glass at the water line. There, with much splashing and excitement, they would wait to seize the incoming viands, which were promptly devoured, or, if too large, were taken to the bottom to be worked over at leisure.

G. strumosus has proven to be a good community fish despite its gluttonous appetite. I have kept them in a temperate, brackish community tank (killies, blennies, and grass shrimp) and in a 65-gallon tropical marine tank fully equipped--undergravel and outside power filtration; a layer of four to six inches of coral rubble, dolomite, and crushed oyster shells; and numerous chunks of coral rock interspersed with coral heads, etc. Inhabiting the tank at the time were only a few small fish and crustaceans.

The first sign of impending reproductive activity was a series of short chases around the tank by a pair of the Skilletfish. This went on for a week or so, after which one of the Skilletfish, the largest, was seen to be keeping to one corner of the tank a great deal of the time. The fish would sit in one place whipping its tail back and forth and generally appearing agitated (prespawning agitation by gravid females is reported by Runyan (1962)). A closer look after several days of this activity revealed that the Skilletfish was brooding a large number of eggs which had been placed on the uplift tube of the undergravel filter. It was not possible to say how long the eggs had been present. Skilletfish are reported to be paternal brooders (Runyan 1962).

Finally, the normal morning inspection revealed that the tank was full of hundreds of free-swimming fry. I immediately attempted to feed them brine shrimp nauplii, but lost all the fry within 72 hours. This experience parallels that reported by Runyan (1962), who was unable to raise the fry past the four- or five-day mark, and with that of Martin and Martin (1972), who reported that fry lived from three to five days. In smaller containers with a higher concentration of food organisms, it should be possible to raise a fair number of young.

I have recently started keeping these clingfish again after a gap of some two years. Interestingly enough, they have always proven to be a popular item in my fish room. In fact, I have been able to sell them in a local pet shop on occasion. They are perfect for breaking in new marine tanks, since they are good producers of filter food.

Skilletfish, and undoubtedly other gobioides, make good aquarium residents. They much to commend themselves to aquarists with access to estuarine waters.

Skilletfish References

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