

Batfish Biology 101

Supplement to the August 2008 AFI article “Batfish: For Big Tanks Only.”

By Scott W. Michael

The Ehippidae family comprises 15 species that are grouped in eight genera. The only two genera encountered by aquarists are Chaetodipterus and Platax, which are composed of three and five species, respectively. The Chaetodipterus species, called spadefish, are found in the tropical Atlantic and Eastern Pacific. Members of the genus Platax, called batfish by hobbyists, occur in the Indo-Pacific. The general body plan of family members is circular and compressed with sail-like dorsal and anal fins. In the case of Platax, these fins are proportionally longer/larger in the young fish. The spadefishes also differ from batfishes in having two separate dorsal fins, and the median fins are not as large and have pointed tips (they are rounded in the Platax). The spadefishes' bodies are also slightly more elongated. Members of both genera have blunt snouts with rather small mouths located at the end. The ehippids get rather large. The most sizeable of the Platax is the tieria batfish, which attains a length of 28 inches (some sources report that this species as only reaching 16 inches). The Atlantic spadefish (Chaetodipterus faber) gets even larger, attaining a maximum length of 36 inches and weighing in at a whopping 20 pounds.

The young of many batfish species are found in mangrove areas or on shallow, sheltered reefs. These reefs are often more nutrient-rich, sometimes silty, and often have terrestrial plant material floating on the water's surface or lying on the substrate. As juveniles, the orbiculate (*P. orbicularis*) and tieria batfish (*P. tieria*) mimic this leaf litter. Just look at their coloration and shape—they look like a leaf that has lost its chlorophyll. These batfishes enhance this mimicry by hanging near the water's surface. Juveniles often drift along with floating clumps of algae (e.g., Sargassum) and miscellaneous debris, sometimes a long way from coastal habitats (it may be an effective way for them to emigrate from one reef to another). The beautiful juvenile zebra batfish (*P. batavianus*), which sports bold black and white stripes on the body, is usually found in deeper water, hovering near feather stars (Crinoids) and sponges. It is thought that its color pattern may help it to blend in with crinoids.

The pinnate batfish (*P. pinnatus*) engages in a different kind of mimicry. It resembles a polyclad flatworm in shape, color and how it swims (they both move by undulating the edges of the “body”). Most predators avoid ingesting these flatworms because they taste bad, so it is advantageous for the young batfish to look like the worm. This is an example of Batesian mimicry.

There is relatively little information on the feeding behavior of the Platax species, but they are generally reported to eat algae and a variety of invertebrates. Their relatively short teeth have three cusps. They use their dentition to scrape sponges and tunicates off of hard substrate, or to browse on soft corals and hydroids. Batfishes also ingest floating invertebrates, such as jellies. It would seem that the sting of a nematocyst-laden cnidarian does not deter the batfish from eating it. The food habits of the Atlantic spadefish are better known. Their diet comprises a variety of invertebrates, including sponges, hydroids, soft corals, zoanthids, polychaetes, amphipods, crustacean larvae, echinoderms and tunicates. Two favorite foods are hydroids and polychaete worms (they often nip the feeding crown off of feather duster worms). They also ingest some plant material.