

Fire Eel

Fire eels (*Mastacembelus erythrotaenia*) can be amusing — but they're not for beginners.

By Spencer Glass

Fire eels can easily abrade themselves. Mastacembelid eels are susceptible to fungal infections or bacterial infections after scraping their bellies or fins. Photo by Oliver Lucanus

One of the truly enjoyable moments of this hobby is trekking down the dark aisles of an amazing aquarium shop and coming upon a new find. I liken this to a suburban safari, with myself as the itinerant explorer, and the store, my pithy Amazonianlike lair. Such was the case some time ago as I came upon a freshwater fish aquarium with one reluctant, yet spectacular-looking resident. It was a fire eel (*Mastacembelus erythrotaenia*) curled up in a corner, subtly probing the gravel, perhaps for a morsel to eat. Here's where fish addiction plays havoc on the wallet.

I was somewhat familiar with this creature for some years through literature, but I had never seen a live fire eel. It was smaller than I imagined it would be but was still imposing, compared to other eels I had seen for sale. The tire track eels (*Mastacembelus armatus*) and zebra eels (*Mastacembelus zebrinus*) I have kept and seen for sale never exceeded 8 inches, with a girth of no more than 1 1/2 to 2 inches. This fire eel was longer than a foot in length and perhaps 4 inches in body circumference. And so began a long, exciting experience with this Asian creature.

The Eel Acquisition

To start with, this particular fire eel was gorgeous. I had to have it. The base body color was charcoal black (flat, not glossy) with fire engine red stripes running laterally. At points, these race-carlike stripes broke into spots but ran straight through from nose to tail. The pectoral fins and tail fin were also black, but circled with red around the margins. The eel's belly was creamy white.

The head of this species tapers down at about a 35-degree angle. These eels, along with other mastacembelid species, have unusually mobile heads compared to more conventional fish. There is a stemlike projection that forms at the base of the fish's nasal area that branches out at the tip. This device protects the fish's eyes, and aids in the digging and probing of the substrate, where it seeks out small worms and insects to eat.

After recovering from the awe (then subsequent sticker shock), I carefully considered exactly how was I going to house this monster. Luckily, I had a great relationship with the store owner (I highly recommend cultivating one with the best of shops), and he was willing to hold the eel while I prepared a suitable living arrangement for it, which I dubbed King Arthur (I assumed it was a male for no good reason). I decided to purchase a 35-gallon hexagon, thinking that this would suit my viewing pleasure the most. I later concluded that it was perhaps too small.

As this was a brand new aquarium that had to be established, I felt I needed a good month to cycle the aquarium and stabilize the water chemistry. I certainly did not want to put luck to chance and lose an amazing, expensive creature. In the aquarium business, space is money, so I was lucky that my relationship was solid enough for the store owner to hold the eel for that length of time (I did pay in advance, as well as buy most of my equipment from him).

House for a Fire Eel

Obviously, one doesn't want measurable ammonia in the aquarium. A pH level from acidic (6.5) to just above neutral (7.4) is fine for the eel. In their natural river and stream habitats of Asian countries (Thailand, Cambodia, Indonesia), these parameters are variable, and the fish is adaptable, as long as extremes are avoided. The same is true with water hardness. My tap water is slightly hard at 10 ppm, according to standard hardness test kits.

I covered the bottom of the aquarium with fine-grained black aquarium gravel. On the gravel bed, I placed several pieces of sinking driftwood. Do not use lava rocks, tufa stone or other abrasive materials. Fire eels are burrowing fish, and they will easily abrade themselves on these materials. The scraping of the fish's belly or finnage can possibly lead to secondary bacterial and/or fungal infections.

Once the aquarium was properly cycled, I brought home my prized eel. The store owner encouraged me to handle the eel first, as we were going to try to direct it into a bag using our hands rather than netting it. King Arthur was surprisingly docile and squirmed through my relaxed hand. It was surprisingly smooth, feeling much like a sausage-shaped

water balloon. Its stubby dorsal projections (not really finlike) are spines, but they are not sharp enough to cause any injury. I was able to eventually coax it into the bag for the journey home.

I placed the eel in the aquarium, and it quickly swam to the bottom — disappearing underneath the driftwood labyrinth I constructed for it. After several hours, it reappeared to check out its new home. It was even more impressive-looking in this taller, wider aquarium than the 10-gallon tank where it was held for me in the store. One sweeping stroke of its tail sent the fish right to the top of the aquarium, while its two smallish, oval pectoral fins waved vigorously for stability.

Fire Eel Temperaments

What disappointed me was the overall timidity I found the eel to possess. It would come out now and then, but never with any regularity that I could depend on. At the time, all reports on this species indicated that they prefer a temperature at or around 76 degrees Fahrenheit. What I discovered by accident is that they truly prefer a temperature in the lower 80s. Once I carefully regulated the aquarium temperature to that level, King Arthur became more active — not quite like some aquarium fish, but at least I could enjoy watching it for longer stretches than before.

Despite its size, the eel was not a voracious eater. It would only accept live bloodworms or brine shrimp. This could become problematic owing to the varying availability of the same. I could assume it was an adult by its size. More than likely, this would account for the fact that it was only accustomed to foods it had eaten in nature — these not being flake, pellet or frozen varieties.

There is some controversy as to the behavior of adult fire eels, probably because adults are not commonly kept, or they are individualistic in their behaviors. However, my personal experience with King Arthur was that of a gentle giant. Its tankmates were several cory cats and neon tetras. Not only did it not make meals of the neons, it would not even compete for fish food. I used a kitchen turkey baster to squirt the eel's food directly at it. It never squabbled with tankmates (or I certainly never noticed it) — that is, until I introduced some others of his own kind.

Photo by Oliver Lucanus

The brownish-gray color of elvers will turn black, while the cream color will transform into the vivid fire red that garnered the eel its colorful common name.

I obtained what I believed to be 1-year-old specimens. They were 8 inches in length and about an inch in girth. Aside from a difference in size, they were identical in coloration to their senior counterpart. Prior to these young fire eels, I had found even younger versions in the 4-inch range, which I had introduced with no incident. They had more subtle coloration (most likely natural camouflaging), being brown where the stripes become red as adults.

Eels this young are called elvers. These had an awkward swimming technique — a herky-jerky version of an inchworm in water. The older youths were very curious in nature, often prodding and poking at King Arthur. These intrusions were often met with overtly aggressive thrusts and nips before it retreated back into its driftwood cave where no visitors were allowed.

One year later, I found King Arthur dead beneath the driftwood. Prior to that, Arthur would rise to the surface on occasion while I was doing aquarium maintenance or take some offered food — sometimes. I believe its death was caused by a prolonged fungal infection that I unfortunately had not noticed. Mastacembelid eels are susceptible to these maladies, so it's important as a prophylactic curative to add 1 teaspoon of aquarium salt per gallon of water, as well as making regular partial water changes. Make certain there are no abrasive surfaces in the aquarium. Also, check the fish regularly for any signs of infections or skin abrasions so that appropriate remedial measures can be taken, if needed.

The year-old elvers continued to thrive, and I was able to coax them to eat frozen varieties of live fish foods, but never flake or pellets. Fire eels, to my knowledge, have still not been bred in captivity. What is known of their breeding habits is that they are egg-scatterers, thrusting their fertilized eggs into plant thickets, with no parental care being given to the resulting fry.

The elvers began developing their adult coloration about six months after I purchased them. Elvers' initial coloration is a brownish-gray with two cream lines running from the eyes to the back of the head. Another single line runs from the base of the neck to the back of the body. Various dots and dashes of cream coloration run laterally down the elver's body. These dots and dashes eventually will join to become complete lines, as does the one running the length of the spine. The brownish-gray color will turn black, while the cream color will transform into the vivid fire red that garnered the eel its colorful common name.

Unlike King Arthur, all of these younger eels became quite sociable, not fretting too much with each other. They would

swim about the aquarium, occasionally taking a break by draping themselves unceremoniously across one of the artificial Amazon swordplant leaves. As the eelers reached the 7- to 8-inch range, they began developing adult coloration (which coincided with Arthur's death).

Over the four years I kept fire eels, I found their antics amusing at times. Feeding time brought them to the surface for a first taste. They would follow the rest of their fish food to the aquarium floor. Other times, they would seemingly relax by burrowing themselves in the soft gravel bed, with only their heads protruding. You can imagine my dismay the first time I saw three heads that appeared to be decapitated on the aquarium floor.

Not for Beginners

If you seriously want to keep these eels (especially more than one in the same aquarium), you would be better off with the longest aquarium possible. A 48-inch, 55-gallon aquarium would suffice to grow them out. Keep an eye on them for an outbreak of fungus or other bodily growth, and treat immediately.

The fire eel is not a beginner's fish. But with the right information as to their care, they make very interesting additions to an experienced aquarist's collection.