Year of the Catfish

A monthly column about Catfish

Walking... (Clarias batrachus)

by Derek P.S. Tustin

(Author's Note: I started The Year of the Catfish with the intention of writing an article relating to some aspect of Catfish in the aquarium on a monthly basis. Last month, April 2013, I did not. I know this caused a bit of consternation on the part of Klaus Steinhaus, the editor of Tank Talk, and he had to find another article to fill the space. As such, I offer both he and the readers of Tank Talk my sincere apologies and to make up for it, give you a double helping of The Year of the Catfish this month. – Derek P.S. Tustin)

One of the things that I've come to realize over my years of being involved in this hobby is that if you don't make mistakes, you never learn. Sometimes it is with a great deal of embarrassment that I admit to having done some of the things I have done, and one of the most embarrassing was trying to keep *Clarias batrachus*, the Walking Catfish.

The year after I joined DRAS, I lost the companionship of Nikki, my Black Lab / Dalmatian cross that I had since my years in university. She was a great dog, and I could go on and on for hours about the memories I have of her, but one of the two funniest memories I have of her involved a Walking Catfish. While a student at the University of Windsor, I had traded for a 190 litre (55 gallon) aquarium, and it was my first true large aquarium. Prior to that I had several small tanks, each about 20 litres (5 gallons) and each had been stuffed with fish. When I upgraded, I went slightly crazy and, after placing the inhabitants of my various other tanks in, purchased almost everything that caught my interest and that I could afford to full up the big tank. One of these fish was a piebald Walking Catfish. Now in those early days of my involvement with the hobby I didn't know much about water changes and proper maintenance. My idea of cleaning was to drain the tank, place the fish in buckets and scrub almost everything. The first time I did this after getting the Walking Catfish, I was in the process of re-filling the aquarium, filling and carrying buckets up from the downstairs bathroom, when Nikki, who was still upstairs, started a frenzied barking. I ran up the stairs to see what was wrong, and as I got to the top I saw Nikki crouched, her ruff up, barking at… the Walking Catfish flopping across the carpet towards her. You see, I hadn't covered the bucket and fish had obviously jumped out. I scrambled around trying, but not succeeding, to pick up the fish and every time I almost had it, the fish squirmed out of my grasp, heading each and every time towards Nikki, who continued to bark at this strange creature seemingly intent on reaching her. After about five minutes, I managed to get the Walking Catfish back into the bucket, throwing a towel over the top. But from that day on, I don't think poor Nikki ever trusted that anything good would come out of that aquarium.

In retrospect, I should have done a lot more research before I even considered purchasing the fish, but the local aquarium stores weren't all that helpful or knowledgeable, Windsor didn't (and still doesn't) have an aquarium society, and the boundless knowledge of the internet was not yet common. Detroit, for all its physical proximity, remained a foreign land, and I knew nothing about the clubs that I now know have been there for decades. So maybe my error is forgivable, but for those who aren't familiar with this fish that I will always remember with a smile, let me tell you a bit about it.

The Walking Catfish

The Walking Catfish, *Clarias batrachus*, is native to South East Asia, being found in India, Sri Lanka, Pakistan, Thailand, Vietnam, Cambodia, Malaysia, and Indonesia amongst others in the region, and has also been introduced, both accidentally and intentionally, to other countries around the world. In its native range, the Walking Catfish is a valuable food fish, and is extensively utilized by both subsistence and commercial fisheries.

The fish now known as *Clarias batrachus* was first described by Carolus Linnaeus in 1758 as *Silurus batrachus*, with the current genus name of *Clarias*, derived from the Latin for "shining", being erected by Johannes Scoploi in 1777. It belongs to the family of fish known as *Clariidae*, which encompass 84 species across 15 genera. The genus *Clarias* is by far the largest in the family, with 34 species.

In terms of body shape, the fish has a broad and flat head that then tapers to the tail, calling to mind the shape of a tadpole's body. It has small eyes, a broad mouth (which cannot actually open very wide) and four pairs of barbels arranged around the snout. The dorsal and anal fins are long, terminating before the caudal fin, and the pectoral fins are very rigid. It is also able process oxygen through its gills. Unlike many other species of fish, the gills are actually supported by a special organ, and as a result when out of water, the gills, unlike those fish lacking the support for the gills, can still absorb oxygen directly from the air. The body is actually quite powerful, and the Walking Catfish is able to laterally flex its body back and forth. It is through the flexation of the body and the support of the body on the stiff pectoral fins that the fish is able to "walk" on land, and it can successfully do so utilizing the special gill organs to continue to process oxygen while out of water.

But why walking? In nature, it is known to inhabit lakes and rivers, but is more commonly found in areas where water can be intermittent. Such areas include muddy ponds, canals, ditches, swamps… basically areas where water can be present at one time and absent at another. Once the water disappears from a given location, the fish possesses the ability to locomote and continue to breathe until it reaches another body of water. The only limitation to its movement is the necessity for the skin to be kept moist.

There are three main variations of the Walking Catfish that are available to the aquarium hobbyist; the standard or natural strain, the piebald strain and the albino strain. The natural strain is usually a uniform brown-gray or gray colouration, with a light grey ventral surface, and has many small white spots along the lateral surfaces. The piebald strain, sometimes referred to as the calico strain, has a pinkish body and brownish coloured spots, similar in colour to the natural strain, scattered across the body. The third strain, the albino, has a pink body with red eyes. The latter two are by far the more commonly available in aquarium stories, probably due to their different appearance.

Due to its sheer tenacity, ability to survive, and its predatory nature, it has become an invasive species in many parts of the world. The website Environmental Graffiti lists it as #7 on the *12 Worst Invasive Fish on Earth* (www.environmentalgraffiti.com/news-invasive-fish?image=7). In the United States it has become a significant invasive species, most notably in Florida, and all members of the *Clariidae* family are actually illegal to possess anywhere in the United States without a federal permit.

In Canada they are not deemed to be an invasive species, and likely will not be deemed one, given their inability to survive temperatures below 9.5°C (50°F). As such, they remain occasionally available for sale in aquarium stores, with the piebald and albino strains being most often seen.

If keeping this fish, a large tank is recommended, with a soft substrate and decorations such as driftwood or smooth rocks placed to create hiding spaces. As I (and Nikki) discovered, the fish is an excellent jumper, and a tight fitting cover is a necessity. The fish is also known to occasionally gulp air from the surface of the aquarium, and seeing the fish do so should not cause undue concern.

They are greedy fish, eating everything that is offered, and as they grow, they will show no hesitation in eating smaller tank-mates. A varied diet of both meaty food and vegetable matter is recommended, but it should be noted that they will eat as long as food is provided, so it is very easy to overfeed. They also do not need to be fed every day.

Given their ability to survive, it is perhaps not surprising that given the proper environment they are actually very easy to breed. If you are trying to do so, it is recommended that you either obtain a sexed pair, or begin with a small group of these fish in order to ensure that you have one of each gender. Once they reach sexual maturity, usually when the reach 30 cm (12”) in size, and assuming you have one of each gender, a pair will be formed. Sexing of the fish is determined by examination of the genital papillae, with the male’s being longer and pointed. The female may also appear rounder in the belly. Once the pair is formed, they will become very territorial, attacking any other fish in the area. All other fish, including any other *Clarias batrachus*, should be removed from the breeding tank, leaving the pair alone.

The pair will begin to swim side-by-side, with increased body contact. In nature, they would dig a cave in a riverbank, but in the aquarium they will substitute this by digging a pit in the substrate, where the eggs will be deposited. Over a period lasting almost a day, the pair will mate above the nest several times, producing as many as several thousand eggs. These eggs are negatively buoyant and will sink to the substrate, adhering where they fall.

After depositing the eggs, the female will retreat, and the male will begin to guard, swimming above the nest. After a period of 24 to 36 hours, the eggs will hatch, and the female will also start to engage in care, guarding the perimeter of the pair’s territory, while the male continues to guard the area immediately above the nest.

For another two days the parents continue their sentinel duty, but then will begin to loss interest. After another three days, the fry will become free swimming, and should you be interested in rearing the fish, it is recommended you remove the fry to another tank, where small foods such as brine shrimp can initially be offered. The fry will apparently grow very quickly, soon reaching the point where bigger foods can be provided.

In many ways it is a shame that the size and legality issues make the keeping of *Clarias batrachus* problematic, because it truly is an interesting and fascinating fish that has the capacity to expand the horizons of an aquarist.

Latin Name	*Clarias batrachus*
Common Name	Walking Catfish
Length	60 cm (48" or 2 feet)
Temperature	20 – 36ºC (68 – 78ºF)
pH	5.5 – 8.0
Difficulty	Easy
Compatibility	Predator – Non-Community