Cichlids of the Americas - More Cichlasomines

Festivum...severum, severum...festivum - a cichlid fish introduction.

By Wayne Leibel

Arguably the two most recognizable and commonly kept of the South American cichlasomines, as defined in the last introductory installment of this series (Part 24, November 1995), are the festivum and the severum. The severum, in particular, is a commonly referred to as a "beginner's" cichlid. In fact, as is true for another "beginner's" cichlid, the oscar (Astronotus ocellatus), which we will cover in a later installment, the severum is hardly a beginner's fish.

The Severum(s)
There are actually at least two described severum species: Heros severus and Heros appendiculatus (and see below). Of these two, the former, the green severum, is the most commonly available in the hobby. However, the turquoise or Peruvian blue severum is becoming popular.

The severum, or banded cichlid, was first described as Heros severus by Heckel in 1840. Although known as Cichlasoma severum for most of its aquarium history (it was introduced into Germany in 1909, according to Sterba 1966), the Swedish ichthyologist Sven O. Kullander resurrected the genus Heros Heckel to contain the two species, one of which — appendiculatus from Peru — he plucked from synonomy with severus in his monograph on Peruvian cichlids (Kullander 1986). He did this for reasons explained in detail in the previous installment — see the sidebar entitled "What's In A Name." In so doing, Kullander noted the affinity (monophyly, same ancestral lineage) of the deep-bodied, strongly compressed severums, both the discus (Symphysodon sp.) and the uaru (Uaru sp.) and, to a lesser extent, the festivums (Mesonauta spp.) and angelfish (Pterophyllum sp.), which we will meet in a later article.

The true severum, Heros severus, is found throughout the Amazon (Brazil), north into Guyana, in the Orinoco Basin of Venezuela, and in the Tocantins drainage in eastern Brazil. Heros appendiculatus is found in Peru and in bordering Brazilian and Colombian waters. Kullander (1986) has suggested that the Venezuelan forms of H. severus, which are more slender and generally brownish in color, may yet warrant description as a third new species. Similarly, given its extended range throughout tropical South America, the Brazilian "H. severus" may well be split into still more species following additional study, as has been the recent case with the festivum, Mesonauta festivus, newly recognized as at least five (described) species (Kullander and Silfvergrip 1991).

In a recent article that appeared in the German aquarium magazine DATZ, Rainer Stawikowski (1995a) recognizes H. efasciatus Heckel 1840 from Belem, eastern Brazil, H. fasciatus (Castelnau 1855) from the Rio Negro and H. notatus (Jardine 1843) from Guyana, in addition to H. severus and H. appendiculatus, and has published photos distinguishing them. Thus, he feels that the real H. severus is actually the Venezuelan severum mentioned above. And what is even more intriguing is that the Venezuelan H. severus, unlike the rest of the Heros species, which are biparental substrate spawners, is apparently a delayed mouthbrooder (Stawikowski 1995b)! No reaction from Kullander as of yet.

Because the severum has been such a popular aquarium resident, most of the stock available in the hobby comes as tank-bred fish from the Far East or Florida, including the ever-popular golden severum, a xanthistic fish lacking melanin and which is thus solid pink/yellow/orange. Wild severum are still imported, and these are typically from Guyana.

The Guyanese severum (and most of the farmed versions) are green in base coloration and more yellow/gold toward the ventral surface (ventrum: belly). In wild specimens, this green has a distinct and beautiful orange/gold tint. They resemble discus in being high-bodied, laterally compressed and having eight distinct black vertical bands distributed equidistantly along their sides, starting from just behind the operculum and back to and including the caudal peduncle — hence the common name "banded" cichlid. These are prominent in juveniles and sub-adults, changing to ventral half-bars or smudges in adults unless the fish is stressed. Often, the seventh band (from head) persists and ends in distinct blotches or even vague ocelli ringed in yellow at the dorsal and anal fin bases.

Particularly beautiful specimens, usually males, have a series of red to red-brown spots/streaks on their heads extending onto the flanks. Of course, given the wide distribution of nominal H. severus, there are numerous color forms that are imported from time to time, but a "good" Guyanese red-streaked green severum is tough to match!

In contrast, the Peruvian turquoise severum (available increasingly as fish-farmed specimens) is basically blue to indigo in base coloration. Adults lack the striping of juveniles, with these turning into black ventral blotches or half bars in large

specimens. In males particularly, there is a complex pattern of dark red spots arranged in a network of blue lines on the head, nape and into the body, not unlike the vermiculations of the turquoise discus — hence the name "turquoise" severum coined by myself in 1989 (Leibel 1989). When courting and spawn-tending, females turn dark indigo blue with bright-red eyes and white bellies. Often, in females, the ventral and anal fins are orange-red.

I have had a severum of Venezuelan provenance only once about six years ago — six individuals. These were the ugliest severums I have ever seen. At 5 inches they were uniformly khaki-brown/green and much more elongate. I've never seen them again in the trade, and I could kick myself, in view of Stawikowski's (1995b) recent observations of delayed mouthbrooding in these fish, for not having taken better care of — and spawning — these fish.

Both the green and turquoise severums can grow to impressive size. I have seen males and females both reach 10 inches in total length, with considerable girth. At that size they are wonderful show fish and can certainly hold their own in the mixed rough-cichlid community.

As is true for most cichlids, males tend to be more elongate than females. This is more apparent when one observes the body profile from the paired ventral fins to the insertion of the anal fin. Females, when ripe, tend to be rounder and thicker in the abdomen.

In both species, but particularly in H. appendiculatus, males tend to have more extensive red-spotting and iridescent vermiculations, but not always. The dorsal and anal fins are extended to filaments in both sexes. Of course, the best way to arrive at a pair is to buy three or more juveniles of varying sizes (from the same batch) and grow them up.

The severum favors still or slow-moving waters — commonly lakes, often with turbid water. They are omnivorous, but with a significant emphasis on plant material. According to Lowe-McConnell (1969), who did gut analyses on Guyanese severums, the stomach contents included green algae and chewed vegetable matter. According to Knoppel (1970), who analyzed stomach contents in nine specimens of H. severus from Manaus, Brazil, fruits made up 47 percent of the total volume, with "detritus" (i.e., unrecognizable vegetable material) making up 23 percent, fishes 8 percent, and crustaceans 7 percent. In the aquarium this herbivorous propensity can be solved by feeding spinach or romaine lettuce, or parboiled green squash, along with a Spirulina-based flake or pelleted food.

In the aquarium, neither of the severums pose much difficulty. They are hardy eaters and willingly accept a variety of foods. However, their predilection for veggies, as noted above, should be taken into account.

With respect to water chemistry, they don't seem particularly fussy, however I'd recommend pH values of 7.4 or lower and hardness in the low to moderate range, particularly if spawning is your aim. As with most South American cichlids, attention should be paid to water quality — good filtration and regular water changes are certainly indicated here. For a discussion of filtration choices see either previous articles in this series or a more general discussion in Leibel (1993 or 1995).

The main problem with severums is managing their aggression. In particular, wild, non-gold severums can be quite belligerent among themselves, particularly if there is a size discrepancy. As juveniles, larger individuals will chase and outcompete smaller individuals, growing larger and more belligerent at the expense of these smaller fish.

While both large and small juveniles are the suggested mix in growing up small groups to sexual maturity so as to ensure both males and females, there should not be a large size discrepancy between the largest and the smallest. Large adults (around 6 to 8 inches) can be a nightmare to pair up on a blind-date basis. Potential mates should probably be separated by a tank divider until acquainted. More importantly, they should be separated until the female is healthy and ripe and begins courting the male across the divider (see Leibel 1993, or 1995, for a discussion on breeding incompatible pairs).

This belligerence, however, does make the severum a good choice for the moderately rowdy cichlid community. And, in fact, the hustle and bustle of such a community often channels the prospective pair's aggression outward and cements their compatibility.

Breeding any of the severums poses no problem outside of that associated with their aggression and the sometimes difficulty in establishing a compatible pair. All of the severums I have kept and bred — green, turquoise and gold — have proven to be rather straightforward biparental substrate spawners whose fry are not particularly hard to raise. Conditioning with healthy foods, followed by water changes and elevated temperature (around 84 to 88 degrees Fahrenheit) will often do the trick in triggering spawning.

They often choose a vertical surface — typically a leaning piece of shale or slate — or a piece of bog wood on which to lay

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their eggs. These typically number 300 to 500; however the delayed mouthbrooder described by Stawikowski (1995b) produced only 100 to 200 (which makes sense given the limited space available for incubation in the mouth).

They make good parents and vigorously defend both eggs and fry from other fish. The fry are easily reared on newly hatched brine shrimp (Artemia nauplii), but may occasionally need powdered fry foods (e.g., O.S.I.'s encapsulated rotifers) or microworms for the first day or two.

The gold severum is the result of a mutation that was line-bred and fixed by aquarists. These fish, favorites of beginners, lack melanin and consequently are pink to gold to orange in coloration. The actual coloration — orange is my preference — is a combination of breeding and diet: foods rich in beta carotenes, such as krill, fed over the lifetime of the fish will intensify the red or orange coloration of all such fish.

There is always a demand for these fish in the aquarium trade, and an aquarist looking to make some money or support his or her fish room is well-advised to make the effort. The downside, however, is that males of this cultivar (man-made) strain seem particularly inclined to be sterile or only partially fertile. Thus, it is a real coup to find a productive pair.

The Festivum(s)
The festivum, Mesonauta festivus, is another cichlasomine that is well-known to hobbyists. Called the flag cichlid or bandeiro, this cichlid is immediately recognizable for its peculiarly angular, highly-compressed shape, and for the prominent black oblique band that runs from the mouth, through the eye and back to the insertion of the "soft" (soft-rayed portion) dorsal fin.

There are seven irregular vertical bars below the band ventrally, and an eighth, prominent ocellated spot on the caudal fin base. The ground color is yellowish-green with a metallic gleam. The ventral fins are as highly filamented as in angelfish, with filaments that may exceed the length of the fish itself. It is not surprising, therefore, that the festivums' closest relative is the angelfish, according to Kullander and Silfvergrip (1991). The fish is essentially sexually isomorphic (gender differences are not apparent). However, males are often larger, slightly more elongate and have a more pronounced "nose."

This fish was a regular import from Guyana, but these days most of the festivums in the trade are tank-bred in the Far East. They can reach lengths exceeding nearly 8 inches in the aquarium (Stawikowski and Werner 1989), although those collected in the wild are typically much smaller (around 6 inches) standard length (SL) (Kullander and Silfvergrip 1991).

Well, Dr. Sven (Kullander and Silfvergrip 1991) has done it again and there are now five described festivums, and counting. These, of course, include Mesonauta festivus and M. insignis, both described by Heckel in 1840, along with the new species M. acora, M. egregius and M. mirificus.

Kullander resurrected Gunther's (1862) genus Mesonauta for the festivums in 1983 when he restricted and redefined the genus Cichlasoma. The name "Mesonauta" means "middle sailor," referring to the insertion of the dorsal fin behind the pelvic fin, Gunther's original diagnostic for this genus. In revising the diagnosis of Mesonauta for his monograph on Peruvian cichlids (Kullander 1986), Kullander had occasion to examine a large number of "festivums" from all over. It became clear to him that "festivum" was a complex of distinct species.

Interestingly enough, the real M. festivus (festivus = merry, handsome), is found only in southern Peru and in Bolivian Amazonia and the Rio Paraguay drainage, and is probably not the fish introduced into the hobby. Mesonauta insignis (insignis = distinguished, remarkable) is found in the Rio Negro and north into the Rio Orinoco system. Mesonauta egregius (egregius = eminent, distinguished) hails from the Colombian llanos, including the Rio Meta system. Mesonauta mirificus (mirificus = wonderful) is found in Peru along the Ucayali and the Peruvian Amazonas. Mesonauta acora (acora = "acara," native name) is found in the Rio Xingu, Rio Tocantins and Rio Araguaia. The Guyanese festivum, the original aquarium fish, is, as yet, undescribed, as is a seventh species from the Rio Tapajos according to Kullander and Silfvergrip (1991).

How do you recognize what species you have? Obviously, if you have collecting locality data (i.e.,. "Peru" or "Colombia" or "Brazil") and it is credible, you can probably make a good guess. Kullander and Silfvergrip (1991) distinguish the five festivums based on differences in the coloration and barring, and have produced a line-drawing diagnostic for identification purposes. The main diagnostics involve the state of the oblique band (solid or broken, dark or light), the scale reticulation on the dorsal back-nape area (reticulated or not), spotting of the unpaired fins (spotted or not), and the number and darkness of the ventral vertical bars (see the quick visual dichotomous key I have prepared in the sidebar entitled "Identifying Your Festivum").

Regardless of the exact species of festivum you are keeping, these are unusual and wonderful fish, which, unfortunately, are all but ignored in the hobby these days. For hints on how to care for them in the aquarium, we turn to the excellent natural history data of Lowe-McConnell (1969) and Kullander (1986, and Silfvergrip 1991). Kullander (1986) reports that festivum have been taken from white, clear and blackwaters in streams, lakes and even rivers. What these habitats all have in common is that they are still or only slow-flowing, and they have floating vegetation or tree litter. Often the fish are found near dense stands of aquatic plants or near sunken trees, much like the angelfish, Pterophyllum scalare.

They seem to be highly social, traveling in small groups, usually near the surface. Castelnau (1855, according to and translated by Kullander and Silfvergrip 1991) wrote that in the lakes of the Rio Araguaia "It lives at the surface of the water, among tall grasses, and rests lying on its side; when it is disturbed it dashes into the air by prolonged jumps." Kullander (1986) likewise notes that when disturbed with a net, festivums escape by jumping out of the water, unlike most cichlids, which dive to the bottom. In fact, they can be caught at the surface at night by jack-lighting them, much like angelfish — by stunning them with the bright light and scooping them out.

Dr. Rosemary Lowe-McConnell (1969), observing Guyanese M. sp. affin. festivus, reported that when pairs were captured, males were generally about one-third larger than their consorts and they had a noticeably more elongate snout. The smallest ripe females were around 4 inches SL. The young fish did indeed "wander round the trenches in small shoals of a dozen or so fish."

She then goes on to describe the breeding behavior in trenches in Georgetown, Guyana. Apparently the pairs chose submersed sugarcane stems to hold their eggs, laying them near the surface of the water. Once hatched, the young were likewise hung, presumably by their hatching gland secretions, on the cane near the surface (within an inch). Both parents took turns guarding and tending the fry. Lowe-McConnell estimated the average brood size as about 100 (less than the 100 to 200 range).

The parents use their filamentous pelvic fins to signal the fry, and apparently the caudal peduncle ocellus is highly visible underwater and functions to orient them. When disturbed by predators, such as Cichla ocellaris (the tucanare) or Acaronia nassa (the basketmouth), which live with them in the trenches, or by birds, they used the aquatic vegetation as shelter.

According to gut analyses, M. sp. affin. festivus eats mainly large algae ("aufwuchs," organisms coating rock), plants and small benthic invertebrates (Lowe-McConnell 1969). Knoppel (1970), in his exhaustive gut analysis of Amazonian fishes, reports that M. sp. affin. festivus from around Manaus, Brazil (probably M. insignis), for which he examined 46 specimens, ate primarily plant matter and fruits (84 percent total, of which 46 percent were fruits and 7 percent were coarse litter). Fish, ants and insect larvae made up a total of only 16 percent.

In the aquarium, festivums can be quite shy. They are best kept in groups, although wild fish can become fairly aggressive. I have had best success using a tangle of bog wood for shelter. If you have a green thumb, plants, such as Sagittaria sp. or Vallisneria sp., planted densely, or anything that grows well for that matter, would probably be appreciated. If your thumb is black, plastic plants will suffice.

As they do come from still or slow-moving waters, "slow" filtration is appreciated. A 600-gallon-per-hour power filter probably is not the answer for a 30-gallon tank! A smaller power filter, or a large internal sponge filter, is.

The water should be kept warm (around 80 to 86 degrees Fahrenheit) and well-aerated. It should also be kept clean, with biological filtration (i.e., sponge) and regular water changes. Although festivums are found in all three water types in South America, they do seem to do better in water of pH less than or equal to 7.2, and low to moderate hardness. If you're having difficulty in breeding these fish, I'd try softening the water with peat moss filtration (see Leibel 1993, or previous articles in this series).

They make suitable cichlid community tank inhabitants if the species they are housed with are not too aggressive. Wild angelfish (Pterophyllum scalare) are a reasonable choice, as are any of the mouthbrooding acaras (Bujurquina sp.). They won't rip up the plants if you choose to go this direction. However, because they are quite definitely herbivorous, if you want to save your plants (or if you have no plants) you should offer them vegetable matter in the form of romaine lettuce, spinach (but not excessively: oxalic acid is toxic) or, at the very least, a good flake or pelleted food containing Spirulina. You might experiment with parboiled squash or even frozen peas.

Festivums can be somewhat difficult to breed. The problem is primarily the shyness of the fish. Getting eggs is not the hard part, but getting the parents to rear their fry in the aquarium is. Again, attention to the aggression of tankmates is key. The fry themselves present no particular problems in rearing, requiring the usual first fare (i.e., newly hatched brine shrimp, etc.) to get them going.

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Identifying Your Festivum
The visual characteristics useful in identifying Mesonauta species cited here were abstracted from Kullander and Silfvergrip (1991) and put into a visual dichotomous key for aquarists. The characteristic "reticulated back" refers to the black edging of scales on the dorsum just above the characteristic dark, oblique band that runs from the eye to the insertion of the soft-rayed dorsal fin. The second visual character in the key, "continuous lateral band," indicates that the oblique band is dark and uninterrupted. "Discontinuous" means the band exists as a series of confluent blotches that are more or less distinct. When in doubt, the geographic origin of your festivum will finish the equation.

1a. Reticulated back:

M. insignis: single wide dark vertical bar above the abdomen (not two), dark continuous lateral band, unpaired fins spotted, most slender, long-nosed species

Distribution: upper Rio Negro, Rio Orinoco

1b. Non-reticulated back:

2a. Discontinuous lateral (oblique) band:

M. festivus: unpaired fins indistinctly spotted, most deep bodied , short nosed species

Distribution: Paraguay and Bolivian Amazon basins, Rio Jamari and lower Rio Tapajos

M. acora: distinctive mottled color pattern lateral band runs only 1/3 way to dorsal fin, then fades out

Distribution: Tocantins and Xingu drainages

M. egregius: back brownish, but with no reticulation, lateral band is a row of dark blotches, unpaired fins unspotted

Distribution: Colombian Orinoco basin

2b. Continuous dark lateral (oblique) band:

M. mirificus: lateral band fades slightly toward dorsal, back not reticulated, dorsal fin indistinctly spotted, caudal and anal fins unspotted

Distribution: Peruvian Amazon

These are only two of the three best-known South American cichlasomines, although they are among the most beautiful and interesting. In the next installment of Goin' South we will meet the chocolate cichlids, genus Hypselecara, another readily available small grouping of South American cichlasomines that is commonly kept.

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