A Review of Cichlids

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By Wayne Leibel

Given the sheer number of cichlids from South America, a review of these fishes benefits from any attempt at organization. Although the biogeographic approach seems, at first, a promising scheme, many South American cichlids are rather widespread in their distribution, causing difficulties in assigning them to "Guyanan" or "Venezuelan" or "Amazonian" assemblages. A more profitable approach is to treat them as natural systematic groupings; for instance "acaras" or "eartheaters" or "pike cichlids." For the remainder of this series, some dozen or so projected articles, we will do just that.

The "port" cichlids, or "port" acaras, if you will, seem a logical starting point for our discussion. They are rather generalized primitive cichlids, perhaps not far removed from the great-grandaddy ancestral South American cichlid from whence radiated all of the more specialized lineages. Historically, these fishes were among the first cichlid species in the aquarium hobby, making their debut in the 1890s in Germany and somewhat later, via Germany, in America. Finally, they are among the hardiest and easiest of the neotropical Cichlidae to spawn, and once a rather common "beginner's" fish.

The "port" had much to recommend it as an aquarium fish early on. It was medium-sized, relatively peaceful, tolerant of low temperatures, easy to spawn, an exemplary parent and a beautifully iridescent fish to boot! Needless to say, it became quite a popular aquarium resident and figures prominently in the pre-war (WWII) hobby literature.

The "Port" Cichlid and the Name Game
The "port" cichlid was first described by Hensel in 1870 from specimens caught in stagnant ponds near the city of Porto Alegre in Brazil. He bestowed the specific nomenclatural name portalegrensis to enshrine the type locality (hence "port" cichlid) and installed the fish in Heckel's (1840) genus Acara. Later, Eigenmann (1910) moved the fish to the genus Aequidens, where it has remained until only very recently.

Owing to the introduction of vigorous commerce by the Germans near the turn of this century in the Buenos Aires (Argentina) and Rio de Janeiro (Brazil) areas where the "port" cichlid is also found, Aequidens portalegrensis was a common aquarium resident in this country. That is, until World War II, which put an abrupt end to commercial fish exportation from this area. Following the war, the commercial focus turned to Guyana and the Amazon Basin and was not reestablished in this part of South America until the mid-1980s. Because captive populations were lost after the war, the true "port" cichlid became extinct in the American hobby.

Guyana and the Amazon basin, however, yielded some A. portalegrensis-like fishes that the aquarium trade was quick to saddle with the vernacular "port cichlid." The name has become a catch-all for any stocky-bodied, brown, nondescript Acara-like fish, including Cichlasoma bimaculatum, the "black port" from Guyana. (In fact, the American hobby probably saw no true "port" acaras for nearly 40 years after the war!)

In truth, the two fish do resemble each other. Interestingly, Haseman (1911) was the first ichthyologist to point out the apparent similarities between Cichlasoma bimaculatum (Linnaeus 1758) and Aequidens portalegrensis (Hensel 1870), the chief difference being the number of hard rays in the anal fin: four or more in C. bimaculatum and three in A. portalegrensis.

I mention all this seemingly irrelevant confusion (and you can read about it in more depth in Leibel 1984 or 1988) because it has caused a recent revolution in the nomenclature of the neotropical Cichlidae, one which we need to broach early on in this series. Please be patient. We'll be getting to the aquarium fish themselves shortly.

The Swedish ichthyologist Sven Kullander (1983) has reviewed the bimaculatum-portalegrensis situation and has concluded that the differences between the two species are relatively minor in view of the overall similarity in body plan shared by both. He has therefore lumped the species portalegrensis and bimaculatum into a single genus, and, on the basis of historical precedence, that genus' name is Cichlasoma! The genus Cichlasoma was erected by Swainson in 1839 (45 years prior to Aequidens), and because Swainson chose C. bimaculatum as the type species of his new genus, any lumping together of species must — by convention — occur under the older name Cichlasoma.

The consequences of this conclusion are profound and somewhat confusing, particularly for aquarium hobbyists.

Aequidens portalegrensis now becomes Cichlasoma portalegrense (the specific nomenclature altered to agree in gender) and is thus sharing the genus with C. bimaculatum.

But what of the 100+ South and Central American cichlids bearing the genus Cichlasoma? Strictly speaking, they are no longer Cichlasoma, according to Kullander. Loiselle (1984) initially suggested — and has extensively used (Loiselle 1987) — the next available generic name, Heros, in reference to these fish. However, that usage, while initially correct, was premature in that Kullander (1986) has since restricted that name to the severum and its relatives. Kullander (1983) intimated that he would, and has since followed through on, carving up the Cichlasomines, originally related principally on anal fin hard ray count, into smaller genera with unfamiliar (to aquarists) names such as Hypselacara, Hoplarchus, Caquetia and so on.

A more conservative approach, and the one to be followed here, is the designation of these orphaned species as "Cichlasoma" rather than grabbing the next historically available name, for several reasons. To begin with, Kullander's work is not yet universally accepted, and while I believe his work at the generic level is on the money, we are well advised to let the dust settle before adopting his scheme in its entirety. Certainly, we might wait for him to complete his entire revision of the neotropical Cichlidae before accepting or rejecting his ideas.

More importantly, in the context of the hobby, is access to available aquarium literature. There are few, if any, texts that have incorporated Kullander's scheme as yet. Obviously, the pre-1980s texts do not.

In this series of articles I will share the taxonomic changes wrought by Kullander with you, and I will try my best to also preserve the earlier nomenclature as well. One thing does seem certain, and that is the obvious affinity of the true "port" cichlid from southeastern Brazil with the "black port" from Guyana, and their consequent inclusion together in a single genus, Cichlasoma, a result of an accident of nomenclatural history.

The "Port" Cichlids in the Hobby
The regional distributions of the true "port" and "black port" are nowhere near as geographically separated as I have suggested in my discussion above. In fact, there are a number of 3-spined and 4-spined "port" lookalikes found from Guyana west to Venezuela and south through the Amazon to Paraguay, Uruguay, Bolivia and Argentina, and these have also been included in the newly restricted genus Cichlasoma. The additional species include the four-spined taenia (Bennett 1831) and the new species orinocense, amazonarum, boliviense, orientale, sanctifranciscense, paranaense and araguaiense, as well as the three-spined forms dimerus (Heckel 1840) and newly described pusillium.

Of the currently described 12 species, only seven or so have been knowingly seen in the hobby. Cichlasoma bimaculatum is the commonest, and perhaps the drabbest, of the group. The "true port," C. portalegrense, trickles in as a contaminant in shipments from Argentina and it is a marvelously iridescent fish, just as the earlier pre-WWII literature portrayed it!

Cichlasoma amazonarum, and C. taenia are occasionally found in Peruvian and Brazilian Amazon shipments respectively. Some of the others have been collected by European amateurs (e.g., C. boliviense, C. orientale), and I have recently obtained C. araguaiense from a chance shipment from the Rio Araguaia-Rio Tocantins area. However, when all is said and done, the old standby C. portalegrense is the most beautiful and most rewarding of the port acaras in the aquarium! We shall look at it exclusively in the sections to follow, but in general, what I have to say about this species holds true for the other ports.

Meet the "True" Port Acara

References

Kullander, S. O. 1983. A Revision of the South American Cichlid Genus Cichlasoma (Teleostei: Cichlidae). Monograph, Swed. Mus. Nat. Hist., Stockholm.

Kullander, S. O. 1986. Cichlid Fishes of the Amazon River Drainage of Peru. Monograph, Swed. Mus. Nat. Hist., Stockholm.

Leibel, W. S. 1984. A Case of Mistaken Identity: Cichlasoma portalegrense (Hensel 1870). Buntbarsche Bulletin, J. Am. Cichlid Assoc. 105:3-12.

Leibel, W. S. 1985. Movable Platform Spawning in an Increasing Number of Neotropical Cichlids. Buntbarsche Bulletin, J. Am. Cichlid Assoc. 107:2-11.

Leibel, W. S. 1988. Return of a Classic: The True Port Cichlid. Freshwater and Marine Aquarium 8(11):24 et. seq.

Loiselle, P. V. 1984. On the Correct Usage of the Nomen Cichlasoma Swainson 1839 and the Status of the Nomina Heros Heckel 1840, Parapetenia Regan 1905, and Caquetaia Fowler 1945. Buntbarsche Bulletin, J. Am. Cichlid Assoc. 107:21-24.

Loiselle, P. V. 1987. The Cichlid Aquarium. Tetra Press.Unlike the rather nondescript brown coloration of the "black port," Cichlasoma bimaculatum, the "true port," C. portalegrense, is a rather beautiful iridescent fish. The center of each black-edged scale is a gleaming blue-green, as are the lips and gill covers. Three black blotches — one below the eye, one in the mid-body and one on the caudal peduncle, complete the coloration, along with a behaviorally variable black stripe that runs from the eye back to the mid-lateral blotch. The stripe and blotches come and go.

The pectoral fins are bright lemon yellow to orange. The dorsal, anal and, particularly, the caudal fins are beautifully reticulated: Near the peduncle the spots fuse to form alternating concentric black and white bands, a character that is diagnostic of this species. Oh yes, there are three hard rays in the anal fin!

The "true port" has been available over the past eight years as a contaminant of Argentine shipments. It is found mixed in with other cichlids such as Aequidens (Laetacara) dorsigerus, the chanchito ("C." facetum) and the eartheater Gymnogeophagus balzanii, which accompany the "royal farlowella" (Sturiosoma sp.) from this area.

Cichlasoma portalegrense is a rather undemanding beginner's cichlid. Like most acaras, the port cichlid is omnivorous in its dietary requirements. Pairs can be conditioned to spawn on a modest diet of prepared flake and pelleted foods, but the inclusion of carotene-containing supplements, such as dried krill and Spirulina-based foods, and other excellent foods like frozen bloodworms and live red earthworms are strongly recommended to bring out the full iridescent beauty of this superb fish.

Water quality and chemistry likewise seem unimportant. These are very hardy fish. Normal water changes and filtration suffice. Coming as they do from the temperate south (e.g., Argentina), C. portalegrense is quite tolerant thermally and can easily survive brief drops to 60 degrees Fahrenheit (16 degrees Celsius) and even lower. This is one reason why the port was successfully kept in the pre-heater days of our hobby.

Although full-sized at 5 to 6 inches (13 to 15 centimeters) total length, pairs are best housed in tanks of at least a 20-gallon (76-liter) capacity — preferably long rather than high. Two caveats regarding this otherwise exemplary cichlid: 1) Despite published accounts, sexually active pairs (and any pair is constantly in this state) can be somewhat rough on tankmates, and 2) they may dig as a prelude or adjunct to spawning.

Touted as "typical" hard substrate spawners that choose rocks or the excavated tank bottom to hold their eggs, C. portalegrense, like several other acaras, may in fact prefer movable platforms (e.g., waterlogged leaves) to stationary receptacles if available (Leibel 1985). For example, although my pair routinely chose a flat rock to hold several sequential spawns, they would routinely drag small clay flowerpot shards around the tank with their mouths just prior to spawning. I came to believe that if they were provided with lighter, more leaf-like movable platforms, these would become the spawning substrate of choice for these fish.

While looking for a suitable movable platform to offer them, I discovered a trashcan full of dried "rubber plant" leaves in the school's greenhouse. These are large (6 to 8 inches [15 to 20 centimeters] long), thick, ovoid (egg-shaped) leaves with long, tough stems. The dried leaves rehydrate within a week or so and sink to the bottom. Although waterlogged, they remain sufficiently buoyant so that even small fishes can tug them around the tank by their edges or stems. (Note: Dead leaves will and certainly do rot over time in the water.)

I set up a pair of C. portalegrense to spawn in a 100-gallon (379-liter), 5-foot (1.5-meter) long tank whose sole occupants were a smaller (about 4 inches [10 centimeters] total length) pair of C. bimaculatum. Within a day or so, the two pair had split the territory roughly in half and had begun pre-spawning courtship. Both pairs began moving and cleaning various leaves, ignoring the assorted other substrates in the tank (e.g., rocks, slate, PVC pipes).

The "black ports" were the first to spawn — on a leaf — which they attempted to defend from the increasingly bellicose "true ports." The female C. portalegrense, in particular, with male consort in tow, spearheaded several raids with the apparent intention of stealing the egg-laden leaf. They were successfully rebuffed by the angry C. bimaculatum parents time and time again. However, the marauding "true port" female finally succeeded in grabbing the leaf and hauling it back to her own territory, with the male C. portalegrense holding the frenzied C. bimaculatum pair, in hot pursuit, at bay. The

robbers promptly ate the eggs and then spawned on a leaf themselves within 24 hours.

Being larger and more belligerent than the C. bimaculatum, the "true ports" successfully reared the clutch to the free-swimming stage. The pairs each spawned several more times and each time selected a leaf, not immovable substrate, to hold their clutch. I don't necessarily advocate the use of leaves, nor is it necessary — I've had many other spawns on rocks or in bare tanks — but their preference is certainly interesting.

Spawning is preceded by a brief courtship consisting of opercular (gill cover) flaring and head-snapping displays by both sexes. If waterlogged leaves are the intended substrate, these may be dragged past the consort. Lip-locking, while part of the original pair-bonding behavior, is absent in well-established pairs. Although I have never put their monogamy to the test, and despite the fact that established pairs rarely quarrel during or between periods of sexual activity, I wouldn't be surprised to find that male "ports" are harem polygamists if multiple ripe females are available.

As spawning approaches, sexual displays increase in frequency and intensity, and the pair — together — carefully mouth and clean the intended egg receptacle. Tubes appear, the fish darken and become velvety black on their ventrums, the pair make preliminary dry runs and finally...eggs!

The eggs are moderate-sized, ovoid (1.0 x 1.5 millimeters) and attached via their long axis to the substrate. Spawns numbering in excess of 600 eggs are not unusual for full-sized females (about 5.5 inches [14 centimeters] total length). The eggs hatch in four days at 70 to 75 degrees Fahrenheit (21 to 24 degrees Celsius). The fry wriggle for an additional four days as they are moved from excavated pit to pit by both parents and can eat newly hatched brine shrimp and crushed flake foods as soon as they are free-swimming.

The parents are rather vigorous in their defense of the free-swimming young for several weeks post-spawn until the female ripens another spawn. The sooty coloration developed as a prelude to spawning is maintained during brood care. The jet-black ventral fins are flipped alternately to signal the threatened fry to "hit the dirt," while the male, in particular, flares his opercula and threatens any and all with great vigor. They are excellent parents. As I said in the first part of this series, neotropical cichlids are the essence of "cichlid!"

The young develop at a moderately slow rate, reaching nearly 3 inches (8 centimeters) at one year of age. They are reproductively competent six months later. The young are generally egg-shaped and drab gray-brown in coloration, with little hint of the splendid iridescence accompanying their metamorphosis into reproductive adulthood. However, the transformation is well worth the wait!

Conclusion

For years, the "port" cichlid has languished in the cichlid hobby, in part due to the promiscuous application of the common name "port" to any brown, egg-shaped acara. In fact, the true port, Cichlasoma portalegrense, is a beautifully iridescent cichlid whose relative peacefulness, ease of maintenance and exemplary and easily induced parenting should guarantee their future in the aquarium hobby now that they have been reintroduced.

Other members of its genus, variations on the theme of "port," are likewise reasonable choices for beginners wanting something easy or for advanced hobbyists into carefully selected rare oddball fish. Several of them, C. amazonarum, C. taenia and C. paranaense have trickled in sporadically over the past several years in "mixed-cichlid" shipments from the Amazon. Others (e.g., C. boliviense and C. orientale) are available occasionally from Germany — all have proven interesting aquarium residents and worthy of the tank space and fish food.

In the next installment in this series, we will turn our attention to the "true acaras," members of the genus Aequidens. We will also consider some of the fishes often confused with and sold as "port" cichlids.