

* DELTA TALE *

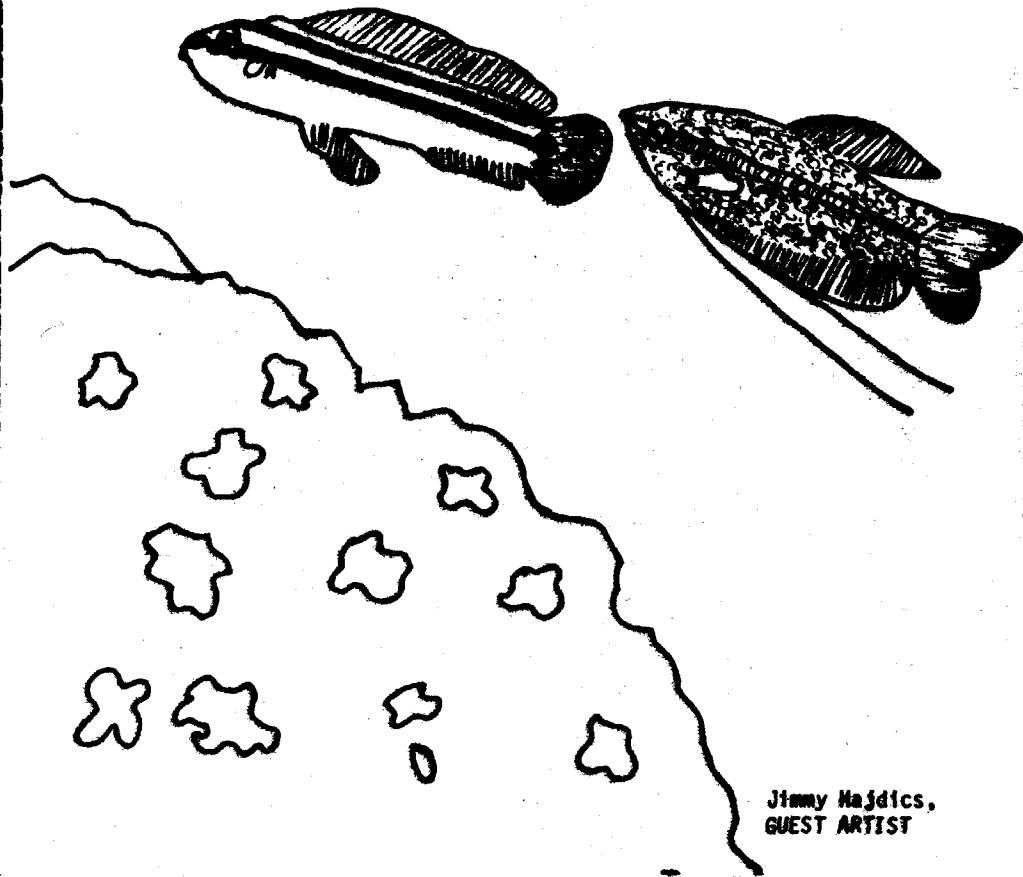
DECEMBER, 1981

OFFICIAL PUBLICATION OF

VOL. XII, ISSUE 12

potomac valley aquarium society

FIFTY CENTS



HAPPY HOLIDAYS!!



Delta Tale is published for the benefit of the Potomac Valley Aquarium Society (formerly the Potomac Valley Guppy Club), a non-profit organization, established in 1960 for the purpose of furthering the aquarium hobby by dissemination of information, encouraging friendly competition, soliciting participation in its shows, and promoting good fellowship. Correspondence should be addressed to:

Secretary, P.V.A.S., P.O. Box 6219 Shirlington Station, Arlington, VA 22206. Original articles and drawings may be reprinted if credit is given the author and Delta Tale. Two copies of the publication in which the reprint appears should be sent to Delta Tale, which will forward one copy to the author/artist. All material for inclusion in Delta Tale should reach the editor no later than the first Saturday after the monthly Monday meetings. The Potomac Valley Aquarium Society and the Delta Tale disclaim any responsibility for content or availability of advertised merchandise or service in these pages. Customer satisfaction is a matter to be worked out exclusively between the advertisers and buyers.

DELTA TALE STAFF: Editor, Vince Edmondson

Assistants: Carol Kaweck1, Barbara Edmondson

Exchange Editors: Gil & Bonnie Baldwin

P.V.A.S. OFFICERS, 1981

President : Woody Griffin
949-1290

Corr. Sec. : Chryss Guiler
864-1299

Vice-Pres.: Pat Mahoney
534-0006

Rec. Sec. : Maggi Mahoney
534-0006

Treasurer : Ruth Brewer

P.V.A.S. 1981 BOARD OF GOVERNORS

John Jessup, Nancy Griffin, Vince Edmondson, Kenny Warren

P.V.A.S. 1981 COMMITTEE HEADS

Auctions : Pete Tietjen
BAP : Gerry Hoffman

Bowl Show : Jim Hajdics
Programs : Gerry Hoffman/
Ruth Brewer

Library : Nancy Griffin
Membership: Wayne Hilburn

Ways/Means: Kenny Warren

MEMBERS OR NON-MEMBERS HAVING QUESTIONS ABOUT FISH, AQUARIUM KEEPING, AND BREEDING CAN CALL ONE OF THE OFFICERS LISTED ABOVE, WHO WILL BE GLAD TO ASSIST YOU, OR REFER YOU TO SOMEONE WHO MIGHT.

MINUTES OF BOARD OF GOVERNORS MEETING, NOV. 9, 1981

Meeting was held at John Jessups.

Present were: John Jessup, Pete Tietjen, Chrys Guiler, Pat and Maggi Mahoney, Darrel Holman, Ken Fisher, Woody and Nancy Griffin, Wayne Hilburn.

Woody called the meeting to order at 8:03 pm

Ken gave a financial report -- we neeted about \$1,000 at the fall auction as of this date.

Woody thanked everyone for their work during the banquet and auction week end.

The board thanked and praised Ken Fisher for his new system of keeping track of auction sales and bidders, billing and receipts. It workend extremely well.

As soon as elections are over we must send next year's spring show dates to T.F.H. & FAMA for publication early next year.

The board nominated the following members for the F.A.A.S. award to be given at the December Christmas party:

Jim Hadjics
The Wagners
Garland Neece

Christmas party discussed. We will have the meat, turkey and ham, catered - along with dressing and potatoes. Everything else will be brought by members as usual. Wayne Hilburn and Pat Mahoney will coordinate this year.

The board expressed the opinion that it is critical that we have an on time, monthly publication of the Delta Tale.

Wayne Hilburn has volunteered to do a new-member booklet -- the board voted to allocate funds for this purpose.

It was recommended that we go to bulk rate for mailing the Delta Tale next year.

Meeting was adjourned at 9:05 pm.

Respectfully submitted
Maggi Mahoney, Rec. Sec.

Classing Catfish

BY CHUCK DAVIS

There is a direct correlation between a fish that survives most disasters and a fish that is adaptable to almost any water conditions, food, or temperatures. A fish that is most often the sole survivor of a community tank disaster is the catfish. Is this just by chance? Obviously not. One of the main reasons for this, is the fact that most cats have the ability to breathe air at the surface of the water, much like a betta. Another contributing factor to their survival is that they are not choosy about water conditions and foods. That is probably why over the years, I've come to consider the entire catfish group with very high regard.

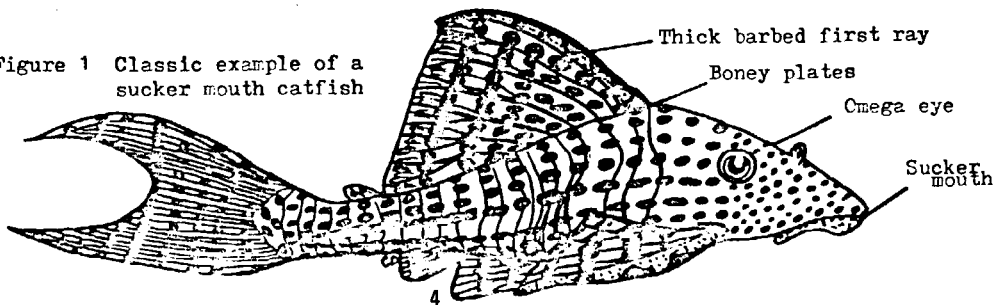
I study catfish from quite a different perspective than the ichthyologist. I concern myself with behavior and requirements by grouping catfish into three basic areas. I do this because it appears to be a more understandable approach from a layman's point of view. I direct the result of my observations towards the average aquarist and try to make easier the understanding of that primitive group of fishes called Catfish.

Basically, I use the mouth structure to divide catfish into the three groups. It should be clear that this in no way relates them genetically, or by family, in the suborder Siluroidea (catfish). This is simply a means of classifying these fishes in groups that will help the average hobbyist identify suitable fish for his or her tanks.

1. SUCKER MOUTHS

The first group I call "sucker mouths". This includes all *Plecostomus*, *Hypostomus*, *Pansque*, *Octolinus*, and *Farlowella* catfishes. These fish all have sucker type mouths on the underside of the head. The mouth is lined with teeth on both sides of the jaw. The odd shape of the mouth serves two purposes: it is used to rasp algae from rocks and other surfaces, and it is also used to cling to steep rock faces or stones in fast moving streams. Their basic diet is vegetable matter, but this is not to say, they will not strip meat from the carcass of a dead fish on the bottom. I have also had large specimens (over 15") which have attacked adult angelfish and expertly cleaned off the meat to the bone. This behavior, I do not consider normal, and perhaps shows a lack of something in their diet. By and large the fish in this group are excellent community tank specimens. Their diet consists mainly of a vegetable base, with a varied amount of high protein meaty foods, such as, shrimp, beef heart, or worms. A commercially prepared basic flake food with the addition of finely chopped cooked spinach will supply "sucker mouths" with enough protein and greens for a healthy existence. Ginny Eckstein, from Long Island, has found much success in feeding zucchini to her suckers. Most of these cats are heavily armored with a thick, boney plated, scaleless exterior. Their means of defense are the barbed first rays of the pectoral and dorsal fins and the sharp, slightly pointed, slightly toxic dorsal fin. For this reason, even the larger cichlids tend to leave them alone. They are normally nocturnal, but feeding time will bring them out front (they don't like to miss a meal). A very interesting observation of your "sucker mouth" will reveal, in most cases, that their eyes are 'omega' shaped. This is especially true in the 'pleco' grouping.

Figure 1 Classic example of a sucker mouth catfish



2. VACUUM MOUTHS

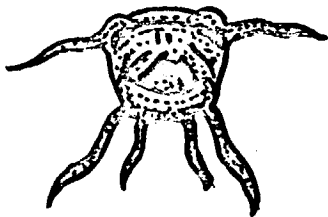
The second group is much larger, and spans quite a few species of catfish. I call this group "vacuum mouths". They have a rubbery snout on the lower front of their faces, usually accompanied by a few sets of short barbels (whiskers). This group includes such common fishes as Corydoras, Hoplosternum, Callichthys, Schilbeidae, and Synodontis. They use their rubbery snouts to rout through the substrata, rocks, and crevices for tasty little morsels of food. They are not very choosy eaters, and enjoy picking up after other fishes in the tank. They are especially fond of tubifex worms, earth worms, and beef heart; they are often seen in a feeding frenzy when they find a sizeable portion of a food they like.

This group being so large and varied, their habits are significantly different from one another. In the Synodontis species alone, habits vary to quite an extent. Some swim upside-down (like *nigriventris* and *davidi*) and even feed in that position on the water surface; while others often hide in the darkest and most secluded areas of the tank, are very shy and very nocturnal in their habits (like *angelicus*). Some Synodontis on the other hand are quite active and friendly such as, *S. decorus*, *S. alberti*, *S. multipunctatus*.

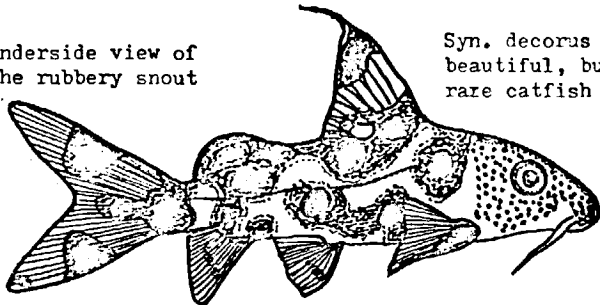
In this group you will find the most common species of catfish in the hobby, Corydoras. And of course, you will find a great deal of information written on this species, I would like to make a few points about this species, though. Their being so many varieties of corys, that one could spend a lifetime researching them. As a hobbyist you may find it interesting trying to collect the rarer, more striking ones, such as, the high-finned cory (*C. macropterus*), the spotted cory (*C. sterbai* & *C. haraldshultzi*) or the pigmy cory (*C. hastatus*). Many corys are not too difficult to breed and you will always find a market for them, "albino palaeustus" is a good example of this.

Also, in this group you will find two excellent tankmates for community set-ups in the 30 gallon and over category. They are the Hoplosternum and Callichthys species. Hoplos and Callichthys grow much larger than Corydoras, but are still very peaceful. I keep two large hoplos (8 inches) in a 40 gal. with a brood of molly babies without any trouble. Their biggest asset is that they are active, friendly cats that show well in a community environment. They are heavily armored and given a sanctuary, they will do well with larger fish.

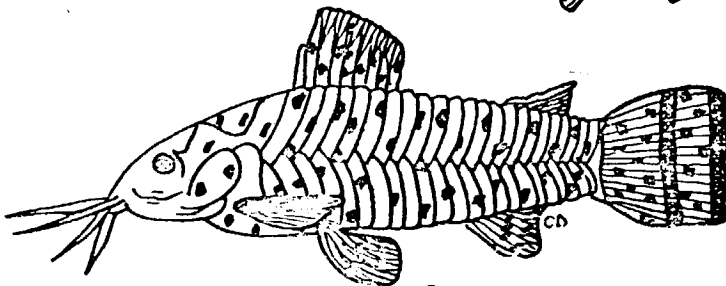
"Vacuum mouths" is the group beginners should try and stick with.



Underside view of
the rubbery snout



Syn. decorus
beautiful, but
rare catfish

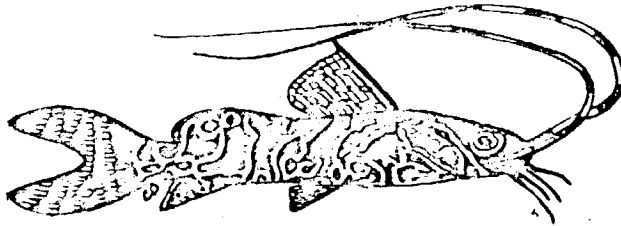


Hoplosternum
thoracatum

3. LARGE MOUTHS

The third group I call "large mouth cats". By that I mean, watch for catfish with mouths that stretch across the face, parallel to the bottom of the tank. They are a diversified group of catfishes whose large mouth and predatory instincts excludes them from most community tank set-ups. They range in size from three inches to three feet. More often than not, their large mouths are accompanied by a pair of lengthy barbels. In this group you will find such fish as all the Pimelodidae species, the *Leiarius* and *Ferrunichthys* species, the Bagridae family (grasscutter), the *Areiuridae* family (bullheads), and other fishes like the Redtail Cat (*Phractocephalus hemiopterus*), channel cats, and shovelnooses.

Harmless looking little beauties, like the angel catfish (spotted pimelodella) will systematically rid your tank (community) of small fishes, such as, guppies, neons and danios. As I have said they are predatory, and small fishes are part of their natural diets. Sometimes in the home aquarium, it is not feasible to feed "food fishes"; so depending on the size of the catfish, other live foods are recommended. Tubex worms, earth worms, meal worms, crushed snails, slugs, crickets, and tadpoles are all excellent live foods. A friend, Frank Dowling, has been feeding his larger fish bits of fresh fish (pollack) for quite sometime with good results. You might also try small pieces of squid, clams, or even ground beef. I have raised two *Leiarius pictus* (one to 24 inches, the other to 32 inches) on goldfish and Square Meal cat food. You will find that like most large fishes, the big cats, have personality and are always hungry.



Leiarius pictus
A good example of the
large mouthed catfishes.

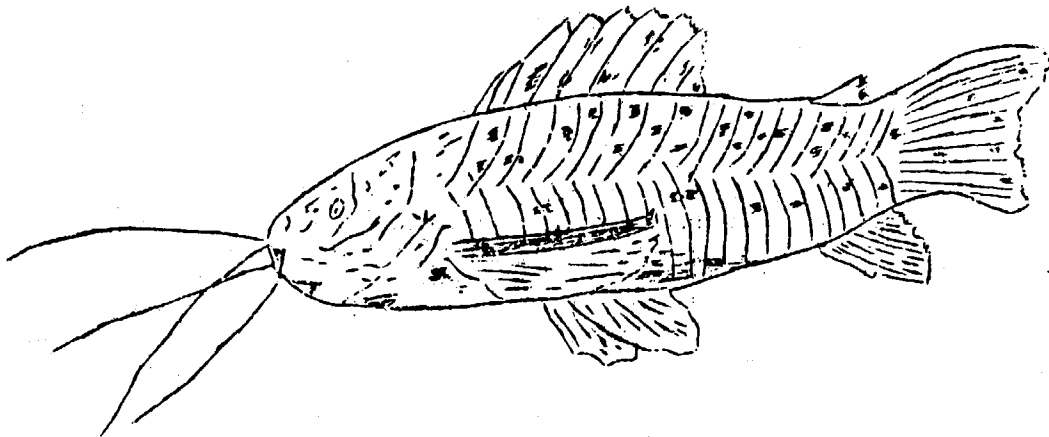
Keep in mind that with proper care and feeding, it is very easy to raise a prize winning catfish. They can be set up in community type groupings and do very well (Groups 1 and 2). If you have community tanks try mixing some uncommon cats from the first two groups. If you have a large aquarium available, you might try raising one of the larger brutes from group 3. Whatever you do, I'm sure no catfish will ever let you down.

Note: This article originally appeared in the June 1979 issue of FAMA. It has been updated and sketches added by the author.

Catfish are a varied and primitive group of fish; some of them being very specialized. Many catfish have remained suspended in an evolutionary back-water, unchanged in appearance or behavior for millions of years.

The different species of this large group of fish continue reproducing successfully and show little signs of becoming rare or extinct. The only real threat to them is pollution - by man. In general, catfish can endure worse conditions than most other fish. Catfish do not have to have clear or well-oxygenated water. In the wild they live quite well in water that is muddy, short of oxygen and full of bacteria.

If you have a tank in which you all of a sudden have a big loss in catfish, you will assuredly know that you do have a big problem.



The Hoplosternum thoroctum or Hoplo is found throughout South America except for Uruguay. They are found in all types of water, but probably prefer soft, acid water. The temperature of the water is not of much importance because in nature they are found in water which varies from freezing to 90° F.

These fish vary in the length and thickness of the barbels and there are variations in the location and intensity of the spots on the body. But sex can easily be distinguished in the following manner: the male's first ray of his pectoral fin will be very thick and bony, with orange coloration. The female's first ray of the pectoral fin will not be as thick and will be brown in color.

In nature these fish select a spawning site on a floating leaf. They would spawn under the leaf and then most times the leaf would float away - the pair never seeing the fry hatch or never tending to the fry in that case.

The first pair of Hoplosternum thoroctum we had and attempted to spawn resulted in a complete failure. We had placed them in a 10 gallon tank with nothing but gravel and no cover plants. The next thing we knew, the male chased the female out of the tank even though there was a full hood on the tank. Luckily she was found in time to save her. After this experience we drained part of the water out of the tank as to leave a head space of about three inches. Later this same pair was moved to a larger tank (20 gallon long) for spawning. We floated a plastic lid, then we tried a large leaf taken off a plastic plant. They seemed to take little or no interest. We fed tubifex worms and gave the tank frequent water changes; even changing the temperature - with no results. In the summer we moved them outside to one of our pools, floating several objects on top of the water for them to select a spawning site. Just as "luck" would have it, one

morning we found the female dead on the patio. So with disgust we sold the male.

Several years later, we decided to try again. We paid quite a sum for this pair, and then found out they had not ever been set up to spawn. We braced ourselves for possible failure again. When we bought them home we didn't have any place to put them. We know many of you have at one time had this same experience. We did have a 10 gallon tank at the time in which we were attempting to spawn Emperor tetras; so we removed the Emperor tetras, drained the tank about four inches from the top, then placed the catfish in the tank.

Several days later we removed most of the Java Moss on the bottom and replaced it by floating hornwort and duckweed on the top. At this time we also floated a lid from a Cool Whip bowl and turned the air supply down to the undergravel filter. We figured why not! These fish would have to be staying in this tank for at least several months for the lack of larger tank space. We operate quite well with the seven tanks we have cut back to - that is except when we want to spawn a fish and/or have had some other fish spawn. Then what do you do? Well, all we can say is "Good Luck"!

Early in the morning two weeks later, after a big rain we noticed that the male had a large bubble nest built under the plastic lid. Approximately three hours later the tank was checked and at this time to our sheer delight and quandry there were eggs all over the gravel, Java Moss, sides of the glass, in the floating hornwort and some in the bubble nest. We were in a quandry because we assumed that all the eggs must be in the bubble nest or they were probably no good and would not hatch. At this time I called someone we knew who had spawned these fish and asked what would happen to the eggs not in the nest. They did not seem to know, but had heard of one other report of the Hopos just scattering the eggs while spawning.

On this person's advice we shook the bubbles off the lid and there were about 30 eggs on the lid. We then placed the lid in a two gallon tank, added aqua-flavine and an air stone just trickling up on the lid. Then we removed the pair from the 0 gallon tank. We shut off the undergravel filter, added aqua-flavine (4 drops per gallon) and an air stone. Approximately five days later the eggs began to hatch in the two gallon tank and in the 10 gallon tank. The fry seemed to be swimming immediately or at least they were jumping around. There were so many eggs that hatched the 10 gallon tank looked like a tank full of fleas. The baby fish were fed at this point (powdered food) until they were big enough to eat flake food.

Now going back and picking up a few points. Number 1. When we got the pair, the female was extremely fat. We fed no condition food, just Diet 15 basic flakes. Number 2. The water in which they spawned was soft, acid water. (Remember we were attempting to spawn Emperor tetras in this tank). Number 3. The temperature was 78 F when they spawned. Number 4. And maybe of no importance, we had barometric changes within 24 hours of spawning.

Six weeks later these fish were set back up to spawn in the same tank with the same plants, arrangement, temperature, but with completely new water. They spawned this time in about one week, but again it was following a heavy rain.

We hope by writing this report, we will help others in the spawning of the Hoplosternum thorocatum.....

Reprinted from ITT of Greater Detroit Aquarium Society, Box C, Royal Oak, MI 48068 as a requirement for their BAP.

New Member November, 1981

Creg Clements, 8010 Orange Plank Drive, Springfield, Va. 22153 455-3171
Creg has been in the hobby for 7 years and keeps discus, goldfish, guppies;
Occupation: Patent Examiner

exasperate (ig.zas'.per.ət) v.t to irritate in high degree; to rouse angry feelings; to provoke beyond endurance. exasperating a. extremely trying; provoking. exasperation n. -r n. [L. ex, out; asper, rough].

Noah was probably thinking about the spawning and rearing of the Malay halfbeak when he framed this definition!

I received my first fish tank when I was nine years old. That was when FDR was President, there was a depression, someone named Hitler was building roads in Germany, there was no television, and sometimes we didn't have Christmas because there just wasn't any money. Thus, my fishtank, on the event of my ninth birthday, was a very important thing indeed, and my father's way of teaching me responsibility. Had I known then what I know now, or if he had given me halfbeaks, instead of bloodfins, on that happy occasion, I might have grown up a lot different. I certainly would not have wasted so much time in a hobby that led to the ordeal I have been going through for the last several months. Inside of the last seven weeks, specifically, I have seen almost all of the theories about fish raising dashed to smithereens by an ugly little fish with few redeeming attributes. I, like Noah, am referring to the Malay halfbeak, *Dermogenys pusillus*!

This little fish was first described by Van Hasselt in 1823. Bleeker then described it as *Hemirhamphus fluviatilis* in 1851, and then as *Demogenys sumatranus* in 1853. Van Hasselt's original description was confirmed by Mohr in 1935, and designated the species as belonging to the Order Syngnathiformes and the Family Hemiramphidae. The halfbeak is closely related to marine flying fish and to a number of other freshwater species such as *Nomorhamphus celebensis*. I have no question at all with the fact that it took that long to properly identify this species. It probably took that long to figure out what they were.

There is absolutely no doubt in my mind as to why the original Breeder's Award Program Committee assigned the halfbeaks to the Difficult Category. One might question this as the halfbeaks are livebearers which, everyone knows, are relatively easy to spawn. Well, that is true, of course, but the trick is not getting them to spawn, the trick is keeping the little @\$%&* alive afterwards.

We all know that the BAP requires 60 days of keeping at least 10 fry alive. I tried four times to keep 10 alive for a week! First of all, the halfbeak is peculiar little fish that requires some, as yet, unidentifiable trace

elements in their water so as to prosper. Certainly a good number of large healthy spawns are reported, but the hits and misses ratio is not detailed. The young are often born prematurely, or the fry are exceedingly weak, in which case the parents eat the fry. Then, the fry eat each other and, by day 30, you are lucky to have half your spawn. Sometime around day 30, those young that remain secretly draw lots to see who will commit suicide when so that, on day 60, you have exactly nine young halfbeaks left!!

As I said, this was to be my fourth, and my last, attempt at spawning the halfbeak. I had, by this time, acquired a fair stock from which to choose -- three pair, actually, that were kept together in a heavily planted 10 gallon tank. When the females began showing signs of increased roundness they were transferred to individual 2½ gallon tanks, where two were placed in large fry traps and one was allowed to swim free. Normal gestation is supposed to be six weeks and an insemination is supposed to carry through only one pregnancy. Neither fact is true. Gestation was about four weeks -- given the conditions, and I have seen at least two instances of consecutive pregnancies without insemination.

When the fry were born -- two females delivered almost simultaneously, in total darkness, the fry were a uniform 3/8" in length. As one of the females was in a trap, and the other free-swimming, I was able to determine that the free-swimming female ate most of her spawn, even though she was well-fed, and her tank thickly planted.

In the case of the trapped female, her spawn numbered about 30-35 and were a dark grey color. I removed the female to a slaking tank almost immediately, and began a mixed diet of live baby brine, frozen baby brine, and a very fine flake food. From the beginning the fish were fed on the average of four to six times daily. Within a week, the fry had grown to ½" but now only numbered about 25. After getting my initial BAP checks, I transferred the young to a 10 gallon tank by dripping the 10 into the 2½ g. for over an hour -- removing the excess water from the smaller tank so as to keep the water level below four inches, which seems to be critical in keeping the halfbeaks from eating each other.

The greater volume of the 10 g. soon proved both a blessing and a problem. The heavy feeding brought about even more rapid growth, but it also produced cannibalism as the larger young also ate their smaller brothers and sisters. As I had never gotten this far with a previous spawn, I decided to experiment by separating the fry, who were now about one inch. I placed no more than four in each of four 10 gallon tanks -- what people will do for points! One might note that by day 45, I was down to 15-16 young.

On day 57, I had exactly 15 remaining, including three that had stopped growing at one inch. I should say, on the morning of day 57 I had 15. That evening during the board meeting of the PVAS that was held at my house, one was discovered dead, and a second one, one of the dwarfs, committed suicide before our eyes by trying to climb into the box filter through one of the slits. On day 58, another dwarf disappeared. That left me 12! Today is day 59; I can only count 11, and one of them looks like it has a advanced case of blastomycosis! Tomorrow is day 60, and is Friday the 13th!! If Dad had only bought me an erector set, or a batch of girlie magazines!

If you get to read this, you will know I made it. If you don't get to read it, you will probably never know the joys of trying to raise halfbeaks.

P.S. I must have self-destructive tendencies as I just acquired three pair of *Nomorhanphus celebensis*. Here we go again!

Due to the press of business, at my busiest time of the year, I am resigning as Editor of the Delta Tale, effective with the completion of this issue. I would have preferred to continue, despite my recent illness and the thirty or so days lost from work, but I now see that it is going to be more and more difficult to take the time at the end of each month to devote to this magazine. I might add that a recent discussion with regard to the "critical" timing, which I unfortunately was not a party to, has somewhat influenced me in my decision. Since so few of us have had this opportunity, i.e., to serve as volunteers with deadlines, as opposed to the donation of time which we can spare, I would hope that the next editor can prompt the various contributors to get their respective reports and other information in on a more timely basis than that which I enjoyed.

Overall, I have gained a great deal of pleasure in doing the magazine, and I hope that our club will continue to do well in this area. We have received many compliments from other editors and clubs for our work, and there is no reason not to draw national attention to our club's accomplishments in the future.

I would like to thank those who have been of great assistance to me, particularly Maggi Mahoney, who convinced me that I could do this job. Following in her footsteps made it very easy, but I still called on her from time to time to get an idea or two. Woody Griffin's continual assistance and support shouldn't go unnoted, either. Not many people in this club would volunteer to lick stamps while on their job, to expedite the mailing. I didn't call on Carol Kawecky, partially because of the logistics involved, and to a greater extent because every now and then I enjoy having something to type, but I always knew that she'd be there if I'd needed her. Maybe at another time, I'll give this job another shot, but for now....

CICHLASOMA SEPTEMFASCIATUM (REGAN 1908)

A Costa Rican Treasure

by Paul V. Loiselle, A.C.A.S.C., & A.C.A.

(Reprinted from A.C.A.S.C. Bulletin Vol. 5 (3) July-Aug. 1977)

Connoisseurs of Malawian cichlids have grown accustomed to having a colorful new introduction become established under one name, then following its correct identification or scientific description, learning an entirely new one for the same animal. Indeed, a rather blasé attitude toward such nomenclatorial instability seems deliberately cultivated as a distinguishing characteristic by aficionados of these cichlids. The problem of erroneous identifications is not limited to African cichlids, however. The subject of this essay, Cichlasoma septemfasciatum, was originally introduced to aquarists under a different name...and it took almost ten years of research before the mistake was corrected!

In 1963, Mr. William A. Bussing, then a graduate student at the University of Southern California, brought back a number of potential aquarium fishes from Costa Rica. One of the most striking of these newcomers was a small Cichlasoma species characterized by a brilliant blue iris, a maroon to rusty brown base color, the presence of conspicuous mid-lateral and peduncular black spots on the flanks, and in non-parental females, an extensive area of pure metallic gold in the humeral region of the female. Both sexes possessed blue coloration of variable intensity on the cheeks, operculum, throat and breast, and sooty, black-edged ventrals. Stressed or parental fishes displayed a pattern of seven or eight narrow, irregular bars on their flanks, but normally these elements of the color pattern were absent.

Bussing identified the fish as Cichlasoma spilurum, and put the newly-imported specimens into the capable hands of the peerless Gene Wolfsheimer. He in turn successfully bred them, and by early 1964, had released several spawns into commercial channels. To the best of my knowledge, until last year, all individuals of this strikingly beautiful Cichlasoma in the United States were descended from the original stock brought back to Los Angeles by Bussing and subsequently bred by Wolfsheimer. Within the last two years, Dan Fromm has brought back new wild stock from Costa Rica, an accomplishment that will doubtless enhance the vigor of domestic strains of Cichlasoma septemfasciatum.

In 1969, Ross Socolof commercially introduced an Archocentrus-type Cichlasoma from Belize (British Honduras). This attractive species was identified by Dr. Robert R. Miller, noted authority on the fishes of Mexico and Middle America, as Cichlasoma spilurum. There is no question of the accuracy of Miller's determination, but as the Belizean fish is quite different from the Costa Rican species, the status of the latter shifted into taxonomic limbo.

In a review of this group of small Cichlasoma (Loiselle, 1974), I proposed referring to the Costa Rican member of this species-pair as C. spilurum/Costa Rica until such time as its taxonomic status was resolved. In that article, I inclined to the view expressed by Gilbert and Kelso (1971) that C. spilurum/Costa Rica was an undescribed cognate of the more northerly C. spilurum. This opinion proved to be erroneous. Bussing (1976), in the

course of his continuing research into the ichthyology of Costa Rica, has identified this species as C. septemfasciatum, originally described by Regan from the Rio Iroquois on the Atlantic slope of that country. In a recent article, Fromm (1976) introduced this name to aquarists, but considerable confusion over the identity of C. spilurum still prevails in aquaristic circles. As C. spilurum and C. septemfasciatum are quite different in their life colors, I think that this confusion is a very temporary phenomenon, easily corrected through a few years correct usage in the aquarium literature.

While I have already outlined the main features of the color pattern of C. septemfasciatum, there are a few more peculiarities in this regard that merit discussion. The first involves the specific name, septemfasciatum, which means "seven-banded". Under most circumstances, living individuals of this species are spotted, not banded. Parental fish usually display some irregular banding, but the real basis for the specific epithet is the coloration of preserved material. Such specimens display a very well defined pattern of bars on the flanks, which would account for Regan's choice of the name septemfasciatum.

The second is essentially an instance of a general phenomenon which occurs in all Archocentrus species characterized by iridescent orange, yellow, or gold female coloration. We are accustomed to the idea that sexually active or parental fishes will be more brilliantly colored than non-breeding conspecifics. This is not true of any of these small Cichlasoma species. Parental females (and to the extent that they share such features, parental males) have their brilliant metallic coloration masked by darker pigmentation. Concurrently with this expansion of dark coloration, there is a tendency for the remainder of the body to become lighter than normal. The result is a color scheme that is less brilliant, but more strongly contrasted. There is a general trend towards enhanced color contrast in breeding individuals in most substratum-spawning cichlids, but no other group known to me suppresses other species-typical elements of its color pattern in the fashion of these small Cichlasoma species. Does this strategy make the parental fish less visible to their predators while allowing them to more effectively deter those that prey on the fry? Does it make it easier for the fry to orient to their parents and respond to their signals? We simply do not know enough about the behavioral ecology of these fishes at this time to do more than speculate.

The maintenance requirements and behavior of C. septemfasciatum, are essentially identical to those of C. spilurum (Loiselle, 1977a). Like its Belizean cognate, this species does very well in a Cichlasoma community tank, where it is a model resident. It is a restrained digger, moving earth only at spawning time and can thus be housed safely in a planted tank if allowances are made for occasional lapses into herbivory. These can usually be eliminated entirely if the fish are offered some supplementary plant matter in their diet. Cichlasoma septemfasciatum is somewhat less effective as a snail predator than is C. spilurum. Even keeping individuals on the hungry side does not seem to enhance their performance as snail eradicators. This species is much less tolerant of lower temperatures than is C. spilurum. It is distinctly uncomfortable at temperatures below 19°C, and incapable of tolerating temperatures below 15°C for more than a very short period of time.

Cichlasoma septemfasciatum is easily induced to spawn under a wide range of conditions, ranging from a cichlid community tank to a specially prepared aquarium housing only a single breeding pair. The preliminaries to spawning resemble those of C. spilurum, but appear to be more protracted. One rather interesting, if somewhat frustrating, feature of this species' reproductive behavior is a tendency to "play house". A pair will go through all of the preliminaries to spawning, including excavating and cleaning a spawning site, but produce no eggs. Such fish even develop parental coloration, and sometimes these females will even guard clumps of Tubiflex or Daphnia for a brief period of time. These episodes are usually of brief duration, and after a few false starts, a pair will settle down and get on with the business of life.

The preferred spawning site in my cichlid community tanks is an enclosed space, either preformed, such as a roofed-over cement block or flower pot, or excavated by the breeders among a jumble of rocks. I have had over a dozen successful spawnings of this species since I first worked with it in 1964, but have never observed the actual event. The enclosed nature of the spawning site is probably in large measure responsible for this. Once spawning has occurred, the female develops the distinctive color pattern mentioned earlier, and the behavior of the pair towards intruders leaves few doubts about the presence of eggs. The division of labor at this stage of the spawning cycle corresponds to that seen in C. spilurum (Loiselle, 1977a).

The ovoid eggs are beige to brown in color and measure around 2.5 mm along their main axis. They are placed on a vertical surface. A very large female, c. .9 cm SL, can produce a spawn as large as 250 eggs. The average size is closer to half that number, regardless of the size of the female. The eggs hatch three days after spawning at 25°C, and the fry are mobile four or five days later. The fry are large enough to take Artemia nauplii, microworms, or finely divided prepared foods immediately upon becoming free-swimming.

Cichlasoma septemfasciatum is a good parent. My pairs have no trouble rearing about twenty-five percent of their fry to independence in my Cichlasoma community tank. Interestingly enough, the main predators on the fry are conspecific juveniles or juvenile C. spilurum. These small cichlids, barely 2.5 cm TL, are more persistent than are larger cichlids, who tend to learn after a few interactions that it pays to stay away from parentally colored C. septemfasciatum. When spawned on a single pair/single tank basis, parental C. septemfasciatum tend to get very casual about their responsibilities and allow the fry to wander far more freely than is the case when potential predators are present. This suggests the ability to perceive the level of potential predation upon the fry and modify their behavior accordingly.

The fry are heavy eaters, and with good management attain sexual maturity at about 3.5 cm SL for females, sometime between their sixth and eighth month post-spawning. They can be sexed at about 2.5 cm TL on the basis of their dorsal fin coloration. Females have a distinct, metallic yellow bordered black quadrangular marking in the spiny dorsal. This spot is either altogether absent in males of the same age, or else only faintly apparent and lacking the yellow trim.

It may sound trite to describe C. septemfasciatum as an ideal aquarium fish, but trite or not, the description is valid. It is brilliantly colored, small, unaggressive, easily managed, and while not very prolific, a ready breeder. It is not often that a single species combines all of these traits so successfully. Unfortunately this Costa Rican gem faces an uncertain future as an aquarium fish. Unlike C. spilurum, C. septemfasciatum has never been mass-produced by commercial breeders either in Florida or the Far East. Its persistence in the hobby has always depended upon the efforts of individual hobbyists. This has led to its near-disappearance from the West Coast, as initial interest in the fish is replaced by apathy and individuals sell or give away their stocks to persons either less-competent or less interested than themselves, who subsequently lose them. Coverage in the aquarium literature provides some insurance against losing such a species as C. septemfasciatum. So does the A.C.A. Trading Post. But in the final analysis, only recognition by cichlid fanciers that each has a responsibility to guarantee the availability of a particular species to the hobby as a whole, can safeguard against the loss of any species from the ranks of available aquarium residents. Such a commitment can manifest itself in many ways, ranging from a personal decision to maintain a favorite species on a long-term basis, through judicious distribution of fry to other interested parties, to large-scale production and commercial marketing. Whatever the approach chosen, we are all the richer when careful management assures the continued availability of such cichlids as this treasure from Costa Rica.

LITERATURE CITED:

- Bussing, W.A. 1976. Geographic distribution of the San Juan Ichthyofauna of Central America with remarks on its origins and ecology. Ex Thorson, T.B. (Ed.) Investigations of the Ichthyofauna of Nicaraguan Lakes, pp. 137 - 175.
- Fromm, D. 1976. Two Small Cichlasomas from Costa Rica. Buntbarsche Bulletin. (56): 23-26.
- Gilbert, C.R. and D.P. Kelso. 1971. Fishes of the Tortuguero area, Caribbean Costa Rica. Bull. Florida State Mus. (Biol. Sci.) (16): 1-54.
- Loiselle, P.V. 1974. A review of the Cichlasoma spilurum - Cichlasoma nigrofasciatum complex/ Bits and Pisces, 7 (5): 6-14.
- Loiselle, P.V. 1977. Cichlasoma spilurum (Gunther 1862) - A Central American compact. Buntbarsche Bulletin. (58): 2-8.

BOWL SHOW RESULTS AND STANDINGS, NOVEMBER, 1981

CICHLIDS

Haplochromis

No Entries

Rift Lake, Non-Mbuna

1st - Peacock - Jim Hajdics
No Other Entries

Open

No Entries

Angels/Discus

1st - Marbled Veil - Jim Hajdics
2nd - Black Lace - K&G Wagner
3rd - No Entry

New World, All Other

1st - Pink Convict - Jim Hajdics
2nd - Ram - K&G Wagner
3rd - No Entry

Mbuna

1st - Ps. lombardoi - Jim Hajdics
No Other Entries

Novice Class: No Entries

Members Choice: Aphyosemion sjoestedit - Jim Hajdics

Judges: Cichlids - Woody Griffin
Egglayers/Livebearers - Darrell Holman

EGGLAYERS/LIVEBEARERS

Sharks and Loaches

1st - Red Tail Botia - Michelle Mangan
No Other Entries

Anabantoids

1st - Giant Gourami - K&G Wagner
2nd - Ctenapoma ansorgii - Gerry Hoffman
3rd - Split Tail Betta - Michelle Mangan

Open

1st - A. sjoestedit - Jim Hajdics
2nd - N. rachovii - Gerry Hoffman
3rd - Epiplatys dageti - Jim Hajdics

Livebearers

1st - Half Beak - Jim Hajdics
2nd - Ameica splendens - John Mangan
3rd - Pineapple Swordtail - Jim Hajdics

Characins and Tetras

1st - Emporor Tetra - Gerry Hoffman
2nd - Buenos Aires Tetra - Amy Stirman
3rd - " " " - " "

Catfish

1st - Farlowella acus - Gerry Hoffman
2nd - Green Cory - Wayne Hilburn
3rd - Pimodella - Jim Hajdics

CICHLID STANDINGS(FINAL)

	M	Q	Y
Jim Hajdics	24	36	108
K&G Wagner	8	8	38
Amy Stirman	0	0	24
John Mangan	0	6	12
Woody Griffin	0	0	12
Wayne Hilburn	0	0	10
Bill Kent	0	0	6
Leslie Stirman	0	0	4
Garland Neese	0	0	4

EGGLAYER/LIVEBEARER STANDINGS(FINAL)

	M	Q	Y
Jim Hajdics	18	28	116
Wayne Hilburn	4	18	44
K&G Wagner	12	16	38
Gerry Hoffman	20	20	30
Michelle Mangan	8	14	30
Ruth Prendergast	0	0	30
Amy Stirman	6	6	22
John Mangan	4	4	16
Woody Griffin	0	0	12
Jimmy Hajdics	0	0	8
Leslie Stirman	0	0	6
Bill Kent	0	0	2

Quarterly Awards: Cichlids - Jim Hajdics

Egglayers/Livebearers - Jim Hajdics

Yearly Awards: Cichlids - Jim Hajdics

Egglayers/Livebearers - Jim Hajdics

Congratulations, Jim Hajdics, for a job well done. Maybe next year some new competition will appear on the horizon and give you a run for the title. Congratulations are also in order to the runners up and all the other club members who participated in this year's bowl shows.

There will be no bowl show in December, as we will have our annual Christmas Party on December 14th, in lieu of the regular meeting.

In that regard, each member or family should bring a dish, either vegetable, casserole, or dessert. Each dish should serve eight (8) to twelve (12) people. In order to avoid duplicity, call Wayne Hilburn at 354-1463 to register your dish and to advise what serving utensils you will also bring. Please bring an extension cord and a warming tray if necessary for your dish.

It is also requested that you bring a wrapped gift for each member and guest that you bring to the party. A fishy item would be appropriate, but should you forget to pick up something, please donate two dollars at the door, so that everyone will get a Christmas present. There will be some items available in exchange for your cash. Gifts will be distributed by our own Christmas Elves.

In closing out the year, I would like to congratulate President Woody Griffin, for his tireless efforts in behalf of our membership, and to his officers and board members as well, for a fun-filled year in which we gained quite a few new members and welcomed back to the fold some older participants. The fact that we have a few bucks in the treasury should propel next year's administration to an even better spring show/auction, picnic, and fall banquet. Good Luck, John Jessup, in the coming year.

BREEDERS AWARD PROGRAM REPORT (FINAL)

<u>NAME</u>	<u>POINTS AWARDED (Through November, 1981)</u>
Woody Griffin	525****
Gerry Hoffman	520****
Garland Neese	640***
Pat and Maggi Mahoney	535***
John Jessup	395***
Darrell Holman	355***
Vince Edmondson	330***
Ruth Brewer	305***
Jim Hajdics	190**
Art Lembke	115*
Kenny Warren	90*
Gene Aldridge	80*
Tom Wright	80*
Thompson Family	55*
Gerald and Karen Wagner	55*
Ken Fisher	30
Amy Stirman	20

RECENT POINTS AWARDED

Woody Griffin ----- Red Devil 20 points

Gerry Hoffman ----- Rasbora einthoveni (Brilliant Rasbora) 30 points#

Vince Edmondson ----- Etroplus maculatus (Orange Chromide) 20 points
Pseudotropheus Zebra (Albino) 10 points
Aequidens portalegrensis 10 points
Cichlasoma salvini 10 points

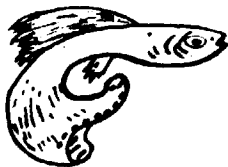
Darrell Holman ----- Ameca splendens (Butterfly Goodeid) 10 points

John Jessup ----- Dermogeny pusillus (Half Beak) 30 points#

#Difficult Species

Congratulations to Woody Griffin and Gerry Hoffman, who have reached the Master Breeder level of the BAP, giving the rest of us "breeders" some additional incentive to reach the top. With a lot of hard work and patience under their belts, these two gents have shown by their feat(s) that if we learn as much as we can about our fish and practice, practice, practice, success in the BAP is within our grasp.

Welcome to the BAP, Art Lembke, and welcome to PVAS, Creg Clements.



POTOMAC VALLEY AQUARIUM SOCIETY
PO BOX 6219, SHIRLINGTON STATION
ARLINGTON, VIRGINIA 22206

Date _____ 19 _____

APPLICATION FOR MEMBERSHIP

NAME _____

STREET _____

CITY _____ STATE _____

PHONE _____ ZIP CODE _____

Number of tanks _____

Type of fish _____

Time in hobby _____

Fish you have spawned _____

What you would like to do in this Club? _____

Which sub-group interests you? (guppy, cichlid, other) _____

How long do you plan to be in this area? _____

Occupation: _____

Membership dues for the Potomac Valley Aquarium Society are:

Family \$10.00
Individual \$7.00

Corresponding \$5.00
Junior \$3.00
(under 18)

Completed applications accompanied by your check or money order should be mailed to P.V.A.S., P.O. Box 6219, Arlington, Virginia 22206.

Please attend our meetings at the Cocoa-Cola Bottling Plant, 5401 Seminary Road, Alexandria, Virginia at 8:00 P.M.

Potomac Valley Aquarium Society
P.O. Box 6219
Shirlington Station
Arlington, VA 22206

FIRST CLASS MAIL

1981 MEETING DATES:

JAN. 12	APRIL 13	JULY 13	OCT. 12
FEB. 9	MAY 11	AUG. 10	NOV. 16
MAR. 9	JUNE 8	SEPT. 14	DEC. 14

Meetings are held at the Coca-Cola Bottling Plant hospitality room,
5401 Seminary Rd., Batley's Crossroads, Alexandria, Virginia.

Meetings start at 8 p.m. Doors open 7:30 p.m. Bowl Show registration
7:45 p.m., to 8 p.m.