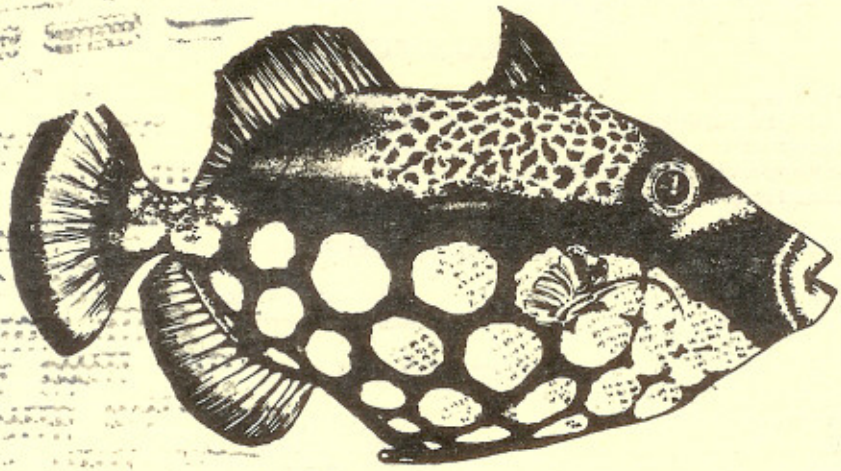
DELTA TALE

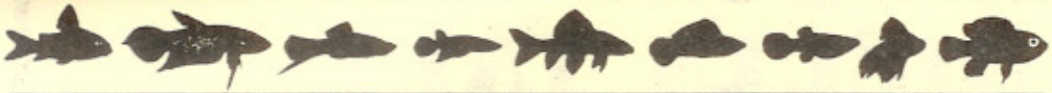
March 1988
Vol 19 #3
50¢

OFFICIAL PUBLICATION OF

potomac valley aquarium society



POTOMAC VALLEY AQUARIUM SOCIETY



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The **Delta Tail** is published for the benefit of the Potomac Valley Aquarium Society, Inc. (PVAS), a non-profit organization, established in 1960 for the purpose of furtherin the aquarium hobby by dissemination of information, encouraging friendly competition, soliciting participation in its shows, and promoting good fellowship. Correspondence should be addressed to PVAS, PO Box 6219 Shirlington Station, Arlington, VA 22206. Original articles and artwork may be reprinted by other non-profit organizations if credit is given to the author, **Delta Tail** and PVAS. Two copies of the publication should be sent to the **Delta Tail** c/o PVAS. Please place the author's name on one copy to ensure that it gets to him/her. PVAS and **Delta Tail** disclaim any responsibility for content or availability of advertised merchandise or services in these pages. Customer satisfaction is a matter to be worked out exclusively between the advertiser and the buyer. All material for inclusion in **Delta Tail** MUST reach the editor by the 18th of the month prior to publication.

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NOTE FROM THE PRESIDENT

The February issue of the Delta Tale was late but not nearly as late as the January issue. I will continue to try and get it out in enough time for you to get it in the mail before the meeting. To be help cover possible future late situations, I will start to include the Bowl Show Classes for two (2) months in each issue. However, keep your fingers crossed that there will be no future late issues.

We are still looking for a permanent Delta Tale Editor and a Bowl Show Secretary. Additional help is also needed in typing articles from other Society Bulletins.

While this issue is at the Printers, I will be at the Raleigh Aquarium Society Workshop along with several other members of the club. We will give you a verbal report at the next meeting.

MARCH PROGRAM

As part of your Club's effort to include Marine subjects in our program structure, Allen Reed, a Club member working at Aquaria International, will give us program on Setting Up A Marine Tank.

THE BIOLOGICAL FILTER

by DR. Terry Doyle, CNYAS

The last 75 years has been a period of great advancement in the aquarium hobby. Early aquarists had to make do with what would be considered rather primitive equipment today.

Nowadays the equipment, and more importantly, the knowledge of how to use it is readily available to even the neophyte (unfortunately too few take the trouble to avail themselves of the literature). This time period has seen the development of a number of aids to filtration which will be the subject of this article.

For the purposes of discussion, aquarium filters may be divided into two broad classes, those which work on the principle of the air-lift and power filters. The air-lift principle has led to the design of a large number of products which are available to the aquarist. These may be divided in turn into four classes. 1) Undegravel filters, 2) Box filters, 3)Sponge filters, and 4) Outside filters. Before discussing each of these in turn a comment on the principle behind such filters is in order.

All air-lift filters consist of a hollow tube into which is passes a stream of air. The air-water mixture, being lighter than water, is forced to the surface by the greater pressure of the surrounding water. The lower end of this hollow tube is generally connected in some fashion to a filtering medium through which the aquarium water must flow. (Figure I) For a given volume of air delivered to the tube, the more diffuse the bubbles are, the greater the efficiency of the air-lift. Also, the wider the tube is, the greater the volume of water which can be passed through the tube (this is of course a function of the size of the air stream as well). In recent years this fact has been recognized by the manufacturers who have been supplying undergravel filters (especially those intended for use in marine aquarium) with larger air-lift tibes (up to 1 inch in diameter) and efficient diffusers.

Personally I do not use undergravel filters (its hard to do when you don't have gravel in your aquariums). When I first started to maintain fish, however, I experienced a number (too stupid to learn in the first try) of problems (real disasters) which on reflection were hardly the fault of the filters, but rather of my own inexperience and lack of understanding of how such filter work and their limitations.

In recent years the undergravel filter has come into its own almost to the point where it is a "sine qua non" of keeping marine fish. One of the design features of such filters for marine use, is that the bottom plate must cover the entire bottom of the aquarium so that no dead spaces are created. The undergravel filters which are normally used in freshwater applications do not fulfill this requirement, covering only part of the bottom. In the undergravel filter the gravel bed is used as the filtering medium. Aerated water

is drawn through the bed, moving particles of uneaten food and detritus into the gravel. If this were the only function of the filter bed (to act as a holder of detritus and small amounts of uneaten food) disaster would surely overtake one sooner or later (probably sooner). Fortunately the bed serves another function, that of a biological filter. In the normal course of events the fish detrites and food are decomposed by bacterial action to give toxic metabolites. If these were allowed to build up, the fish would eventually be poisoned. In an undergravel filter bacteria will coat the gravel articles. Their function is to oxidize these toxic metabolites, first to nitrites then to nitrates. These are what is known as aerobic bacteria (requiring oxygen in their metabolism). In the absence of air or oxygen containing water in this instance, these will die off and be replaced by anaerobic bacteria which break down uneaten food to toxic substances (e.g. hydrogen sulfide). In a planted aquarium (algae and higher plants) the plants utilize at least part of the nitrate to synthesize protein and other nitrogen containing organic compounds. If the plant dies or is eaten, the nitrogen will be returned to the cycle. The scheme is depicted in Figure 2.

One consequence of this oxidative conversion of proteins to ammonia and thence to nitrate is that nitrate is produced as nitric acid which lowers the pH of the aquarium water. Marine aquariums generally compensate for this by using a buffering agent - often the gravel substrate serves this function by converting the acid to neutral nitrates.

e.g. $2\ HNO_3 + CaCO_3 \longrightarrow Ca(NO_3)_2 + H_2CO_3$

$H_2CO_3 \longrightarrow H_2O + CO_2 \uparrow$

The carbonic acid is removed by gas exchange at the water surface or may be used by the plants in photosynthesis. Insufficient usage of the nitrate by plants will also result in a build-up of nitrate which can be compensated for by water changes.

When a marine aquarium is first set up, there is a gradual build-up of ammonia (which often reaches levels which are toxic to marine fish) when a certain point is reached there is a bloom of the nitrosomonas bacteria which oxidize ammonia to nitrite (less toxic than ammonia) and the ammonia level drops dramatically with a rise in the nitrite levels. Following this, the nitrobacter bacteria take over and oxidise the nitrite to nitrate.

The ability of an undergravel filter to do an adequate job of biological filtration is dependent on a number of factors:

1) PARTICLE SIZE OF THE FILTER BED. There is an optimim particle size of gravel used in an undergravel filter. If too fine a grade is used the filter will plug and flow may become restricted either over the entire area of the bed or locally producing "dead spots" where anaerobic bacteria take over. The number of bacteria which the filter can hold depends on the surface available (by surface area we mean the surface area of each particle X the number of particles). Since for a given volume of gravel smaller particles will have a higher total surface area than larger particles, the use of course gravel is self defeating.

2) OXYGEN AVAILABILITY. Since aerobic bacteria require oxygen

to do their job the flow rate of the filter will affect the amount of oxygen available to the bacteria. In general, the greater the flow rate, the better so long as it is not so great as to suck detritus right through the gravel and out of contact with the bacteria coating the gravel particles.

3) CONTACT TIME AND LOADING. If the flow rate is too fast, the material to be oxidized does not remain in contact long enough. Similarly, if the load imposed on the bacteria is too high (either through over-crowding or overfeeding) the bacteria will not be able to cope with the load. This situation may be partially overcome by some supplementary means of mechanical filtration.

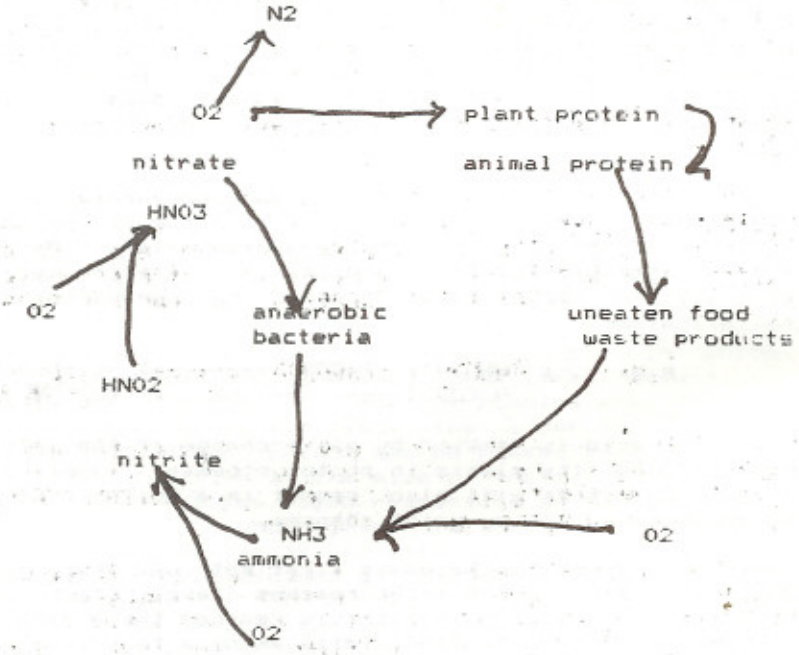

Figure 2.

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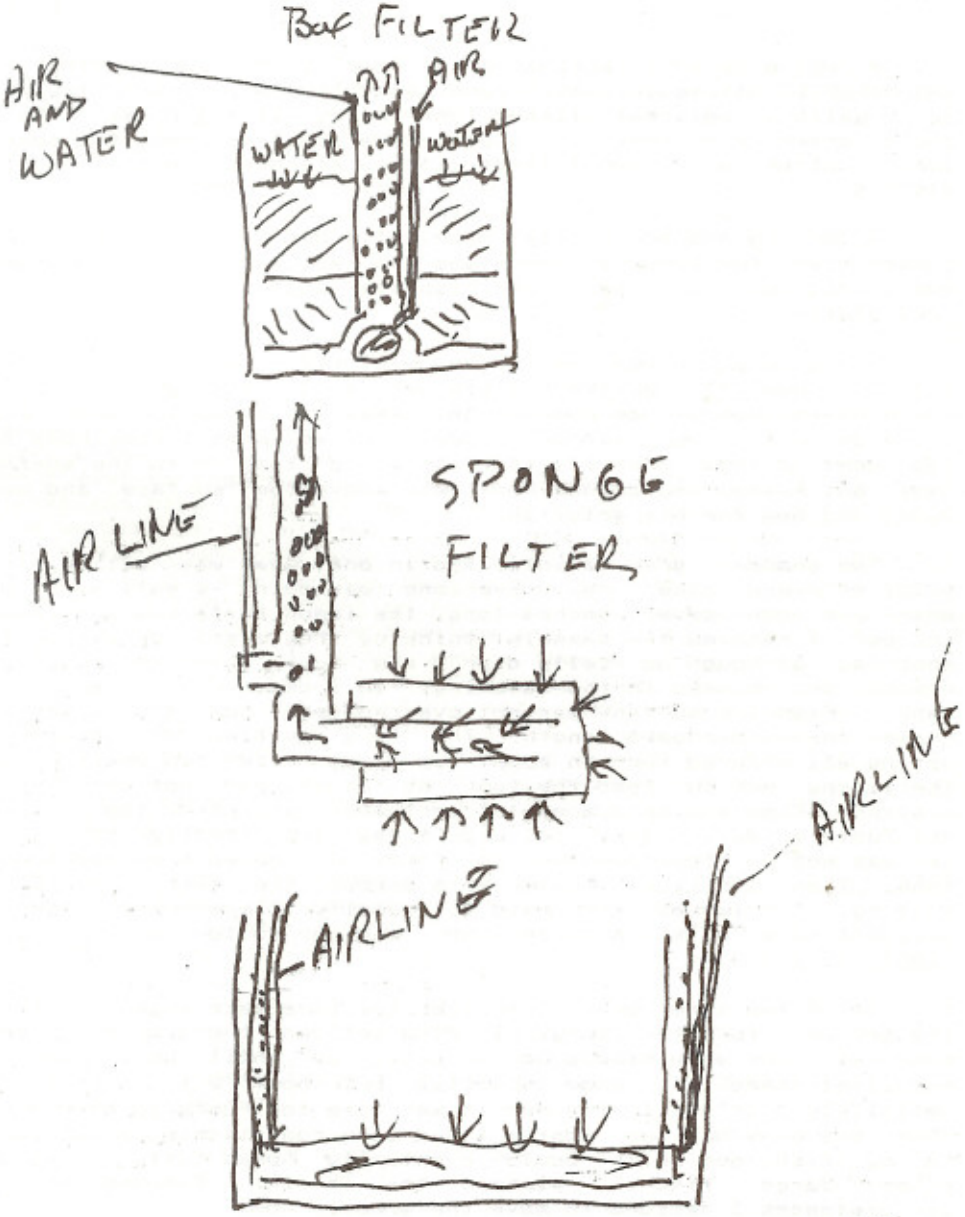
The REFLECTOR, May 1984, By the Central New York Aquarium Society,



UNDERGRAVEL FILTER

FIGURE I

THE PANTHER GROUPER, A REAL PET

by John Faucett, NAS

A while back I purchased a four inch long panther grouper, CHROMILEPTES altivelis, ehich Lynn named "Fusty". I put the grouper in my 70-gallon, well-established tank in our living room. The grouper would share this tank with a blue-face angel of about the same size, a lemon betterfly of about three inches standard length, and four blue damsels.

After the grouper settled down, all did well. The grouper was not competitive for food, so there was no real problem. The grouper ate small goldfish, and the other fish ate anything offered. They were real gluttons.

Fusty became a real pet. He developed a real personality and was a real show-off. Unlike the grouper family that dwell in caves and under reefs, Fusty was out all the time, appearing to watch everything going on in the room. After a month or so, when I came home from work and went to thew tank all the fish would come up to the surface to be fed, but Fusty would poke his face above the surface and wag like a puppy and beg for his goldfish.

The grouper grew rapidly and in one year was eating nine or ten goldfish every other day. Everyone was doing great; the blue-face angel was about seven inches long, the lemon butterfly was almost four inches. I removed the damsels thinking they might be dinner for Fusty some day although he really didn't pay much attention to them. One damsel got missed in the catching, so I decided to leave it in the tank. Figuring my tank was not overcrowded I bought a clown tang about three inches standard length. The tang settled down nicely and was eating all offered food in about two days. After two weeks I went into the living room to feed the tank as usual and noticed the tank was missing. Figuring he jumped, I went ahead and feds the fish. It was not Fusty's feeding day, so I didn't pay any attention to the fact that he was not up top begging for food. I looked high and low, but no tang. Then I noticed Fusty swim across the tank. His stomach was bulging. I looked and said to myself, "Impossible, that grouper couldn't have eaten a three-inch tang--or could he?" Well, you're right, he did.

In a few more days I noticed the blue-face angel bickering with the grouper for territory. I also noticed the grouper's caudal and pectoral fins were ripped up a bit. Up until now, Fusty was in excellent shape and show quality; but now, with ripped fins, he definitely wasn't. I figured it was time for Fusty to have a new home. For the previous two months I had been conditioning a 125-gallon tank in my fish room which would eventually house Fusty along with some other large fish I planned to obtain. Because of existing circumstances I decided to move the grouper now.

I caught Fusty and brought him down to my fishroom and put him in the 125-gallon tank. After about ab hour Fusty seemed to be settled

down.

The following evening after work I went down to the fishroom and feed the tanks as usual. Fusty looked fine, but was not his usual self. He just looked at me and stayed on the bottom completely uninterested at the goldfish I had to offer. What was wrong? I immediately reached for the test kits and pH meter. All the tests were well within tolerance. I figured, well, it's a new home and maybe he needs a day or two to settle down.

The following day I got the same reaction at feeding time. I figured, well, I won't panic yet because Fusty was very healthy and could go a week or two without eating if he had to without any adverse effects.

Three weeksa went by and Fusty was still not eating. Now it was time to push the panic button. I thought, "What can I do to get my fish to eat?"

First I tried a 35% water change and a good gravel cleaning. That didn't work. Then I tried an appetite stimulant in the water; that didn't work either. What else was left to do? This fish was our pet, and I didn't want to lose him. I had a last resort, that was to force feed the fish and hope after a couple of times his appetite would come back and he woiuld eat on his own. By now the gouper was showing signs of starvation, and wouldn't even look at me when I approached thew tank. He just lay on the bottom leaning against the back wall of the tank. I figured I had to try it or for sure Fusty would die. First I caught a small goldfish. The fish was about an inch long. Then I caught Fusty, which in his state was easy. Then I wet my hand and held the grouper's face toward me but still in the net. His mouth opened and when it did, I put the goldfish into his mouthand very gebtly pushed the fish down his throat with a soft, clean piece of 1/4" diameter rubber hose. When the goldfish was in the throat opening I put Fusty back in his tank, but kept him in the net for one or two minutes until he finished swallowing the goldfish. Only then did I return Fusty ti his tank.

I repeated this procedure every other day for a month feeding only one goldfish each time. Finally one evening I went down to the fish room to check on things and Fusty came to the front of the tank and appeareds to be looking for food. He wasn't ecstatic about it, but he looked interested.

I immediately caught a small goldfish and held it in the tank. Fusty came up to it, biumped it, and swam back down to the bottom. This action required some thought. He seemed like he wanted to eat, but foe some reason would not.

Then it hit me. Maybe when Fusty ate the clown tang he hurt himself and now had a fear of taking live food. I put the live goldfish back in its tank and found a fish that had apparently died just that day. I netted the dead fish out and approached the 125. Fusty again came up to the top. I held the goldfish in the water and Fusty took it. He swam to the bottom and spit it out. I quit for the night. The next afternoon I caught another goldfish, killed it, and held it in the tank. This time the grouper took it and kept it down.

I knew I was on the right track and so was Fusty. The next day I offered a cube of homemade gelatin food. Fusty took this right off the surface. During the next two weeks every once and awhile I would try the live food. If he didn't eat it, I just put it back.

Finally, about two weeks ago the grouper took a live goldfish from my fingers and ate it. Now Fusty is his old self showing off as usual and now not only eats live food but he will accept just about anything.

Fusty now shares his home with a seven inch cortez angel, a racoon butterfly, and a brown spotted grouper and all are well and content.

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Reprinted from THE WET PET GAZETTE, February, 1986 publication of the Norwalk Aquarium Society of Fairfield County, Inc.

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The North Jersey Aquarium Society

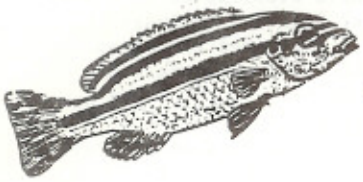
35th ANNIVERSARY

TROPICAL FISH SHOW & AUCTION

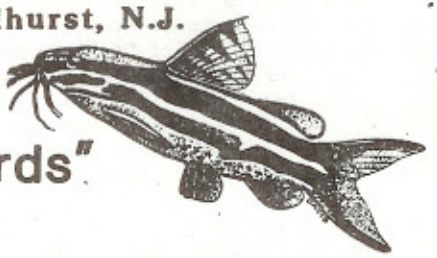
APRIL 29, 30, & MAY 1, 1988

at the Hackensack Meadowlands Environment Center

DeKorte State Park, Lyndhurst, N.J.



"Cash Awards"



CLASSES *

Livebearers
- L-1 GUPPY, All
- L-2 PLATY, SWORDTAIL, MOLLY
- L-3 ALL OTHER LIVEBEARERS

Egglayers
- E-1 BETTAS, All
- E-2 Other LABYRINTH Fish (gouramies, paradise, etc.)
- E-3 KILLIFISH, All
- E-4 GOLDFISH & KOI
- E-5 EGG-SCATTERERS (barbs, tetras, danios,etc)
- E-6 ALL OTHER EGGLAYERS (knives, eels, marines,natives)

Specials
- *P-1 Photography - OPEN (slides only)
- *P-2 Photography - AMATEUR (slides only)
- P-3 AQUATIC FAUNA (turtles, frogs, newts, etc)

Scavengers
- S-1 SUCKERMOUTH CATFISH
- S-2 ARMORED CATFISH
- S-3 SMOOTH-SKIN CATFISH
- S-4 SHARKS & LOACHES

Cichlids
- C-1 MBUNA
- C-2 Other LAKE MALAWI
- C-3 TANGANYIKA MOUTHBROODER
- C-4 TANGANYIKA SUBSTRATE SPAWNERS
- C-5 All OTHER AFRICAN CICHLIDS
- *C-6 DWARFS (new & old world)
- C-7 ANGELFISH & DISCUS
- C-8 AEQUIDENS TYPES
- C-9 GEOPHAGUS TYPES
- C-10 HEROS/CICHLASOMA under 5 inches
- *C-11 HEROS/CICHLASOMA over 5 inches

* See furhter explaination in rules

AWARDS

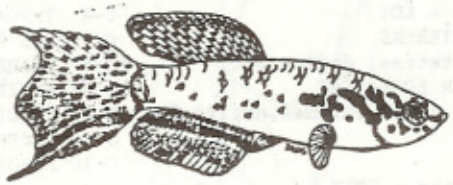
FIRST PLACE in each class	= $20.00	BEST LIVEBEARER	= $50.00
SECOND PLACE in each class	= $10.00	BEST EGGLAYER	= $50.00
THIRD PLACE in each class	= $ 5.00	BEST SCAVENGER	= $50.00
		BEST CICHLID	= $50.00

The ENTRY FEE for each entry is $2.00; except "SPECIALS" (P-1, P-2, P-3) where the ENTRY FEES is $1.00 per entry, and not eligible for a $50 award.

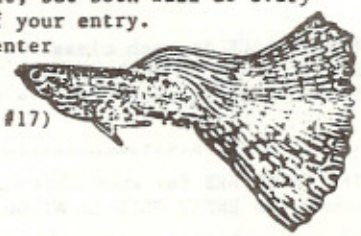
NORTH JERSEY AQUARIUM SOCIETY - 35th ANNIVERSARY SHOW - RULES

1. You must pre-register your entries. Entries must be postmarked by April 22, 1988. You may make substitutions or changes up to Saturday, April 30th by 12 noon. Substitute fish or class changes may not increase tank size. You may not increase your number of entries after the filing date of April 22nd. No refunds on 'no-shows'.
2. One fish shall constitute an entry. You may enter a pair (male & female) if you wish, but generally only the male will be judged.
3. N.J.A.S. is willing to expand the classes if a sufficient number of entries in a given class warrants this sub-division. For example: Class L-1 Guppy..... if there are 22 entries in this class and 11 of them are of the red tail type, then N.J.A.S. will keep the L-1 Guppy class and add the class 'L-1a Guppy Red' and the additional awards.
4. Class C-6 Dwarf Cichlids includes both new and old world cichlids with females under three inches long. Class C-11 Heros/Cichlasoma over 5 inches includes other large cichlids like 'oscars', 'pikes', and 'lukes'. Class P-1 Photography Open is for entrants that have been paid for (or received other compensation) for their photographic endeavors. Class P-2 Photography Amateur is for those who have not been paid or received compensation for their photographs. Mail in entries will be accepted with the entry blank, please include return postage.
5. Entries can be set-up on Friday, April 29th, from 7:00 p.m. to 9:30 p.m. and on Saturday, April 30th, from 9:00 a.m. to 12 noon. All entries must remain in place until after the Auction on Sunday and be removed no later than 6:00 p.m. on Sunday, May 1, 1988.
6. N.J.A.S. will supply 2½ gallon tanks, ½ gallon drum bowls (both are to be reserved on the entry form), airlines, air, and security. Also tables for tanks up to 20 gallons will be supplied; larger tanks must be cleared by the show chairman - Dore Carlo by April 22nd.
7. The entrant must provide tanks larger than 2½ gallons, covers, airstones, filters (where needed), and stands for tanks over 20 gallons.
8. No lights will be permitted on tanks; no ornaments, plants or pots will be permitted in tanks; and backgrounds are permitted, but will be the sole responsibility of the entrant. No visible ownership markings are permitted on any equipment.
9. The Show Chairman has the final word on all decisions, and he is:

Mr. Dore Carlo
555 Route #440
Jersey City, N.J.
07305
Day: 201-432-1042
Ngt: 201-437-5012



10. Any fish entered in the show may be put into the auction by the owner. The standard split of 50% for the owner and 50% to North Jersey A.S. will apply. ALL other fish for the AUCTION must be cleared by the club president, Mr. Kevin Carr, who can be reached at: Day - 201-432-1042.
11. The Hackensack Meadowlands Environment Center or the North Jersey A.S. will NOT be responsible for entries and/or equipment, but both will do everything possible to insure the safety and security of your entry.
12. Location: Hackensack Meadowlands Environment Center
1 DeKorte State Park
Lyndhurst, New Jersey
(just south of the intersection of Routes #3 & #17)



Delaware County Aquarium Society

ANNOUNCES IT'S 1st ANNUAL

SEMINAR * BANQUET * AUCTION

SATURDAY, APRIL 16 & SUNDAY, APRIL 17

WALBER'S on the Delaware

FEATURED SPEAKERS

Chuck Davis:	"Catfish"
	"Collecting in Peru"
Mike Gross:	"Marine Lighting, Filtration, and
Jerry Reidler:	Natural Mini Reef"
Dr. Gerry Hoffman:	"Freshwater Aquarium Plants and lighting"
	"Dwarf Cichlids of South America"
Rossiario LaCorte:	"Killifish - Breeding and Maintenance"
Dr. Paul Loiselle:	"African Cichlids"

SCHEDULE OF EVENTS

Saturday, April 16 -	8:30am Seminar Registration
	9:00am - 4:00pm Speakers
	(Lunch break at about 12:15)
	6:00pm Social Hour (Cash Bar)
	7:00pm Banquet and Dinner Speaker
Sunday April 17 -	D.C.A.S. 1st Annual Auction
	9:00am Registration of Auction Items
	12 Noon Auction Begins

TWO GIANT RAFFLES

Miscellaneous items during the auction: Tickets - 5 for $1

Grand Finale: 55 Gallon Tank, Stand and Deluxe Setup: Tickets $1 each
6 for $5

EVERYONE WELCOME

AQUARISTS OR THOSE INTERESTED IN BECOMING AQUARISTS

Registration:

# of People

		Amount
_____	Pre-Registration (Before April 1, 1988) - $10/person	_____
_____	Late Registration (April 1-16, 1988) - $12.50/person	_____
_____	Banquet Registration (Buffet Dinner) - $20/person	_____
	Banquet MUST be pre-registed	Total $ _____

Name: _____ Phone: ( ) _____

Address: _____

City: _____ State _____ Zip _____

Make checks payable to: Delaware County Aquarium Society

Please send payment to: Rosanne Kilmartin
731 Colwell Rd., Swarthmore, PA 19081

For further information call: 215-543-5804

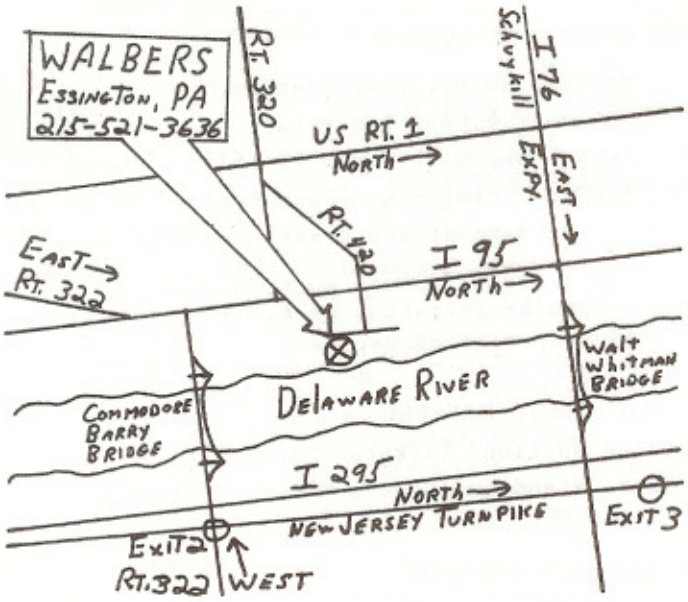
Motel rooms are available at the site of the seminar.

Call or write the motel (NOT DCAS)

Walber's on the Delaware
Essington, PA 19029
Phone: 215-521-1400

Rates are:
Single $40/night
Double $46/night

For these rates you Must tell them that you are with
The Delaware County Aquarium Society



Exit I-95 at the Rt. 420 ESSINGTON Exit. Take Rt. 420 (Wanamaker Ave.) to dead end, approx. 6/10 mile. Turn right for about 150 feet. Walbers will be on your left.

AN ALTERNATIVE TO BIG, UGLY FISH

By Tony A. Fitz

My affiliation with PVAS during the past half year has been an interesting and pleasurable experience. It's fun to spend a little time with others who share my interest in the aquarium hobby, and I learn something new at each meeting. However, I've come to suspect that the collective membership of PVAS might have more than a little bias toward those big, ugly fish which are collectively termed "cichlids". My suspicion has developed following such events as:

(1) Frequent PVAS meeting presentations which show slide after slide of big, ugly fish. The presentations are tastefully done, and the slides are of unusually nice quality. However, nearly every fish which is illustrated is big. And ugly.

(2) Issue after issue of Delta Tale containing articles which glorify cichlids, with only rare mentions of real fish.

(3) Monthly bowl shows which are divided into two major classes; first and foremost, cichlids, and second, everything else.

(4) A preponderance of PVAS officers and otherwise influential and committed members who develop far-away looks and expressions of rapture upon mention of the word "cichlid".

Please let me make it crystal clear that I absolutely refuse to stoop to the depths of pointless criticisms just because so many members of PVAS demonstrate a willful waste of valuable tank space during their inexplicable infatuation with cichlids. Instead, I wish to present a simple case for a different type of fish, one of the "non-cichlids". Excuse my far-away look and expression of rapture as I mention the hallowed word:

Killifish

Now that I've written it, I feel better already. The diverse family of small, beautiful, generally undemanding fishes collectively known as killifish provide a viable alternative to fishes that are big, and ugly. Resisting the temptation to waste journal space extolling the endless virtues of killifish, I have chosen to list just a few of the reasons why the serious and thoughtful aquarist might wish to consider the inclusion of these in his or her home. So I pose the rhetorical question, "awright, just what's so great about killifish that we would want to keep them, other than as live food for our household full of cichlids". I offer in reply the following abbreviated list:

(1) As a group, killifish are small. A few species such as Blue Gularis might grow to 6 inches or so in length, but for the most part killifish grow no longer than a few beautiful inches.

(2) Being the antithesis of cichlids, killifish are typically beautiful.

(3) Due to their small size and convenient metabolism, killifish are perfectly content in very small aquaria with infrequent (grunt, I hate even the mention of) water changes.

(4) Killifish generally eat small amounts of reasonable foods, not demanding the prodigious quantities of hapless goldfish or other innocents which are greedily devoured by your basic three-foot-long cichlid.

(5) Killifish don't need heaters, not even in dead of winter. If you are comfortable in your home, then your killies are comfortable.

(6) Killifish can readily be transported to PVAS bowl shows without use of a 3/4-ton pickup containing a hot tub.

(7) In a bowl at a PVAS winter meeting, killies are content to sit (swim?) for hours on a table that interestingly sits right next to the entrance, as icy blasts of winter air come in at intervals that would, within minutes, create new tank space for the appalled cichlid exhibitor.

(8) If you somehow tire of your killifish, feeling an inexplicable urge instead to fill a few 300 gallon tanks with monsters each of which eats twice its weight in pitiful goldfish daily, and will surely outlive its owner, relax. Your killies will soon die, having life cycles of a few years at most. Of course, during the short life of a typical killifish, eggs are produced in such abundance that with a little effort, area lakes, streams, ponds, and puddles could be kept filled (in summers) with small, beautiful fish.

Lest I somehow be falsely accused of unwarrented bias toward

this small, beautiful, entirely agreeable family, I present the following list of problems which are frequently associated with killifish:

(1) There aren't enough killifish.

(2) I can't think of anything else.

In summary, I hope that this objective appraisal of an family which presents an alternative to cichlids will serve as a basis for discussion, in addition to that conversation which is furtively conducted among the few correct-thinkers and converts of PVAS. As we watch the imminent next presentation showing slide after slide of big, ugly fish, some of the far-away looks and expressions of rapture which develop in the audience should not necessarily be interpreted as a fondness for the most recent slide showing a particularly grotesque specimen of Bruticus humongacus. Instead, some of us may be daydreaming of a scenario in which our Aphyosemions, in piranha-like fashion, are attacking, overwhelming, and devouring the big bully cichlid. At least we can dream.

TRADING POST

Ads for the trading post should be sent to Tom Hetzel, 5601 Seminary Road, Apartment #1702, Falls Church, Virginia 22041 by the 15th of the month prior to publication.

FOR SALE: Copies of about 40 assorted papers on darters originally collected for my Masters Thesis. Aldo, a variety of fishery biology and other text books and hobby books at good price. Please send a self addressed stamped envelope for a price list.

Chris Bergesen, 5116 Lawton Drive, Bethesda, MD 20816

PVAS BOARD MEETING, FEBRUARY 1, 1988

John Stieringer hosted the February PVAS board meeting. President Gene Aldridge convened the meeting at 7:30 p.m.; also present were Gerry Hoffman, Ray Hughes, John Mangan, Bob Pallansch, Pete Thrift, and Kenny Warren.

Announcements:
Our membership has been trimmed to paid members only, so a 400-copy run of Delta Tale will continue to meet our needs; the March issue will focus on saltwater aquaria.
PVAS' treasury is low at the moment (@ $800.00) due to our recent $1,000 purchase of tee and golf shirts, but we expect to meet expenses of our Spring Show.

Show Chairman Thrift was authorized $180.00 to buy a "55 setup" and 10-gallon tanks at G&G Aquatics for the May raffle. The question of Brochure/store canvassing was to be put to the membership at the February 8 meeting.

Ray Hughes was asked to seek a Maryland site for the '88 Fall Workshop on October 15 or 22, to broaded the regionality of PVAS.

The Board reiterated PVAS' new dues structure: dues will be $12.00 yearly for individual/family memberships ($9.00 corresponding), beginning June '88; prorated 'till then.

The meeting adjourned at 9:50 p.m.

Respectfully submitted

Robert J. Pallansch
Recording Secretary

BAP BOARD MEMBERS

John Jessup-----(Chair)	(Oakton)	255-7238
Gerry Hoffman=----	(Warrenton)	(703)-347-7486
John Mangan-------	(Vienna)	938-4778
Alex Cummins------	(Montgomery)	656-6355
Gene Aldridge--(Ex-Officio)	(Arlington)	998-8757

CHECKERS

Arlington County----------Pat Gore - 522-3884

Fairfax-Vienna----------Jim Long - 280-1753

Alexandria----------Jerry and Amy Stirman - 941-6729

Clifton-Centerville----------Kenny Warren - 378-8838

Dale City-Stafford----------None

Warrenton----------Gerry Hoffman - (703)-347-7486

Prince Georges County----------Alex Cummins - 656-6355

Montgomery County----------Ray Hughes - 424-3531

NOTE: If you cannot reach your nearest checker, please call your nearest BAP Board Committee Member or John Jessup at 255-7238. Arrangements will be made to get someone to check your fish. Feel free to call your President - Gene Aldridge - 998-8757.

BOWL SHOW REPORT FOR

FEBRUARY

CICHLIDS	EGGLAYERS/LIVEBEARERS
New World Medium	Guppies
1st None	1st John Mangan 2nd John Mangan 3rd John Mangan
Haplochromis	Barbs
1st None	1st None
Open	Open
1st Angel K. Muller	1st Roloffia nigrifluni T. Fritz 2nd Betta Splenden K. Muller 3rd A. striatum T. Fitz

Judges Choice -- Roloffia nigrifluni

TOTALS thru Feb 88

	MONTH	QUARTER	ANNUAL		MONTH	QUARTER	ANNUAL
K. MULLER	1	1	1	T. FITZ	3	9	9
				R. HUGHES	5	5	5
				K. MULLER	2	2	2

MARCH CLASSES

CICHLIDS: New World Dwarf, Rift Lake, non-mbuna (no Haplochromis), Open

EGGLAYERS/LIVEBEARERS: Killifish, Catfish, (non-Corydoras), Open

APRIL CLASSES

CICHLIDS: Angelfish and Discus, Non-riftlake African, Open

EGGLAYERS/LIVEBEARERS: Livebearers (non-Guppy), Sharks & Loaches, Open

IMPORTANT NOTICE: Jason will be leaving us shortly to go to school, so we are in need of some one to carry on this critical job. There is really very little work other than being at the meetings. If you are interested see me - Gene.

POTOMAC VALLEY AQUARIUM SOCIETY

POST OFFICE BOX 6219 SHIRLINGTON STATION ARLINGTON, VIRGINIA 22206

APPLICATION FOR MEMBERSHIP

DATE_____19_____

NAME_____

STREET_____APARTMENT_____

CITY_____STATE_____ZIP_____

TELEPHONE H_____ W_____

OCCUPATION_____

Where did you hear about PVAS/get this application?_____

_____

Number of tanks_____Time in hobby_____

What can this club do for you?_____

What do you want to do for thw club?_____

Membership dues for the Potomac Valley Aquarium Society are:

Family: $12.00 Corresponding: $7.00
Individual: $10.00 Junior (under 18) : $5.00

Please send application and check for dues to the address above.

MARYLAND

ANIMAL EXCHANGE

765-A Rockville Pike
Rockville, Md 20852

424-PETS

AQURIUM CENTER

Randallstown Plaza Center
Liberty Rd. at Offutt Rd.

(301) 521-4529

FISH FACTORY AQUARIUM

582 N. Frederick Ave.
Gaithersburg Md 20877

(301) 977-7500

GAITHERSBURG PET CENTER

642 Quince Orchard Rd
Gaithersburg, Md 20878

(301) 948-1133

GLENMONT TROPICALS

Glenmont Shopping Center
12345 Georgia Ave
Wheaton, Md

949-0344

PETLAND

White Flint Plaza
5268 Nicholson Ln
Kensington, Md 20895

(301) 231-5216

RICK'S FISH & PET SUPPLY

36 south Market St
Frederick, Md

(301) 694-9664 831-6868

PET MART ROCKVILLE

2230 Veirs Mill Rd
Rockville, Md

762-3505

SHOWCASE AQUARIUM

11248 11250 Triangle Ln
Wheaton, Md 20902

942-6464

TROPICAL LAGOON

9439 Georgia Ave
Silver Spring, Md

585-6562

CONGRESSIONAL AQUARIUM

Congressional Plaza
152 Congressional Ln
Rockville, Md 20852

881-6182

MONTGOMERY TROPICALS

7845-G Airpark Rd
Gaithersburg, Md 20879

(301) 670-0886

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THEY HELP SUPPORT US

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Fairfax, Virginia 22031
(703) 573-4400

TYAU TROPIC-CARE
6905 Duke Drive
Alexandria, Virginia 22307

ANNANDALE PET SHOP
Markham East Center
4231-F Markham
Annandale, Virginia
256-2400

AQUARIA INTERNATIONAL
1180 Pendleton Street
Alexandria, Virginia

BAILEYS PET CENTER
Leesburg Pike Plaza
3527 S Jefferson
Baileys Cross Roads
Falls Church, Virginia
931-1400

BEACON MALL PET CENTER
Beacon Mall Center
6776 Richmond Highway
Alexandria, Virginia
660-6100

DISCOUNT PET CENTER
Manassas Shopping Center
9028 Mathis Avenue
Manassas, Virginia 22110
361-7769

NATIONAL PET & AQUARIUM
Willston Shopping Center
6168 Arlington Blvd
Falls Church, Virginia
533-7828

OAKTON PET SHOP
Oakton Center
Rt. 123 & Hunter Mill Road
Oakton, Virginia
281-9622

PET MART TYSONS
8417 Old Courthouse Road
Vienna, Virginia 22180
893-8181

WILSON'S PARROTS & MARINE LIFE
6701 Loisdale Road
Springfield, Virginia 22150
922-7358

SUNSHINE PETS
7395H Lee Highway
Falls Church, Virginia 22042
573-6946

PETS, ETC.

Herndon
Stuart Center
462 Eiden St.
437-0381

Sterling
Hechinger Jameswy Plaza
243-C Harry Byrd Hgwy
430-9667

Alexandria
Mt. Vernon Plaza
7688-B Richmond Hgwy
768-2200

POTOMAC VALLEY AQUARIUM SOCIETY
P.O. BOX 6219
SHIRLINGTON STATION
ARLINGTON, VA 22206

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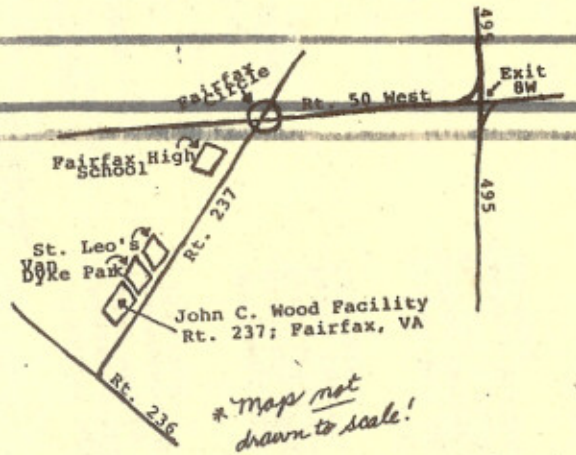

The Potomac Valley Aquarium Society will meet on the following dates in 1988:

11 Jan
8 Feb
14 Mar
11 Apr
9 May
13 Jun
11 Jul
8 Aug
12 Sep
17 Oct
14 Nov
12 Dec

Meetings are held at the John C. Wood Facility, Rt. 237 (Old Lee Highway), Fairfax City, VA. Doors open at 7:30, meetings start at 8:00. **EVERYONE IS WELCOME!!!**