

* DELTA TALE *

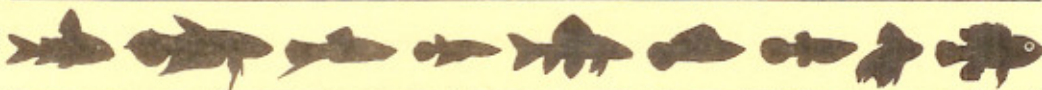
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potomac valley aquarium society



POTOMAC VALLEY AQUARIUM SOCIETY



POST OFFICE BOX 6219 SHIRLINGTON STATION ARLINGTON, VIRGINIA 22206

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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| | |
|--------------------------|---------------|
| President: | Gene Aldridge |
| Vice President: | Pete Thrift |
| Treasurer: | Gerry Hoffman |
| Corresponding Secretary: | John Mangan |
| Recording Secretary: | Bob Pallansch |

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| | |
|-------------|-----------------|
| John Jessup | John Stieringer |
| Ray Hughes | Kenny Warren |

1988 COMMITTEE HEADS

| | |
|----------------|-----------------|
| Auctions | |
| BAP: | John Jessup |
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| Fall Workshop: | Gerry Hoffman |
| Bowl Shows: | |
| Programs: | |
| Ways & Means: | John Stieringer |
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| Delta Tail: | Gene Aldridge |

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NOTE FROM THE PRESIDENT

We are now into 1988 and things are running fairly smoothly and activity plans progressing for the remainder of the year. I am sorry that the January Delta Tale was late, I have no excuses so just blame me. Hopefully the February issue will be out on time or even early, at least it will get to the printer in plenty of time.

We are still looking for a permanent Delta Tale Editor, also as noted in the Bowl Show Section we are looking for a new BS Secretary. Jason is going to be leaving us soon to go to school so a replacement is necessary. A voluntary is requested. If you are willing to type articles from other Society Bulletins, please let me know. I know some of you did it for John M, I would very much like you to continue, just let me know.

Gene
Gene
#

FEBRUARY PROGRAM

Gerry Hoffman is going to give us a short Breeders Award Report Program in slide format. The remainder of the program will be a give and take discussion on your experiences, GOOD or BAD, with various aquarium related hardware and equipment. This will give you all and opportunity vent your frustrations out. This program is for you so come and let your hair down.

COMING EVENTS

| | |
|----------------------------|-------------------|
| Raleigh A S Workshop | 26,27,28 Feb 1988 |
| North Jersey A S Fish Show | 29,30 Apr/1 May |
| PVAS Fish Show & Auction | 20,21,22 May |
| AKA Convention | 28,29 May |
| ACA Convention | July |

Veggies for Your Fish

by George White, PVAS

Check your references. Following the advice of several club members, I feed my fish several kinds of commercial dried food to ensure that they receive a balanced diet. Reference books and magazine articles also provide useful information on whether certain species should be fed primarily high protein or high vegetable or mixed diets.

When properly cared for some varieties of fresh water fish rival saltwater fish in color intensity. Certain species, such as Lake Malawi mbuna, are alge grazers or plant eaters who require a diet high in vegetable content and relatively low in protein if they are to show their best colors and breed. In fact, too much animal matter will cause some herbivores to develop fatty deposits and bloat--both potentially life threatening conditions. Others, such as some species of catfish and cichlids, also require some vegetables to really prosper.

The proper care of goodieds. I have never seen a book or even an article on how to feed and raise goodieds, so I do not know if veggies will cause them to "color-up." Goodied fans apparently prefer to keep their names out of print.

Handy veggies. Most real fish hobbyists provide at least occasional feedings of live brine shrimp, daphnia, or insects to their "meat eaters" and sometimes to their "green eaters." Freeze dried foods also work well. In contrast, few think of giving real plant matter to their herbivorous wet pets, even though several easy to use items are readily available and inexpensive.

A certain whiskered fellow named Jim has developed a special relationship with catfish and herbivores--he treats them to split lima beans. (rumor has it that even rare farlowella breed for him, but there's no documented evidence). A package of frozen lima beans can be kept in the refrigerator freezer compartment. A few can be taken out at a time and quickly thawed before feeding. I usually peel off the outer shell of the beans and feed sparingly to avoid fouling my aquaria.

Treat your fish to an Italian meal. Another excellent green food is zucchini squash. Cut the zucchini into 1/4 inch thick slices and parboil them (place them in boiling water for 30 seconds to one minute). The slices can then be cut into small chunks or dropped whole into your tanks. Many herbivores like to graze on the slices. Extra parboiled slices can be frozen for future use.

SCHOMBURKI'S LEAFFISH
Polycentrus schomburki
by Wade Mitcheltree, YATFS

This species of leaf fish comes from the areas of Guianas and Trinidad. They reach a size of four inches and are able to breed at two inches. I would not recommend this fish for the community tank, considering it has a very large and deceiving mouth, it can swallow fish of almost its own size, therefore would probably eat everything in a normal community tank. Their temperature requirements range from 68 degrees to 90 degrees. I have had best results with the temperature kept at around 80 degrees. The sex differences are that the male is darker than the female.

The book says that this species breeds much like the badis badis. It requires a large flower pot or coconut shell placed in the darkest corner of the aquarium, preferably hidden among dense vegetation. It has a feeling of insecurity when maintained in an unplanted aquarium and will not be happy without plants.

I don't know about the book, but this is the way I had my tank set up. I used a twenty gallon tank, bare bottom, with no plants or gravel. The only things in the tank were a heater, a sponge filter, and a small flowerpot. The flowerpot was put in front of the tank so I would be able to see the eggs if they were to spawn. The water was 7.2 and hard. These fish were about 6 months old when they spawned the first time. The parents were conditioned on live baby brine shrimp and flake foods.

There were seven leaf fish in the 20 gallon. The male drove the other six fish over to the other side of the tank, and he then cleaned the flowerpot. After he was satisfied with the pot, he choose a female to spawn with him. The male changed from a dark greyish color to a jet black with distinguishing dots all over him. The female seemed to fade her colors out period to become a little on the white side.

The pair then proceeded to squeeze into the flowerpot, the female would lay a batch of eggs, and the male would fertilize them. They kept this up for about an hour, at which time the male drove the female out and to the other side with the others. This pair laid about 200 eggs which were small and clear.

Two days later the male went over and drove another female into the pot, where she laid about another 150 eggs right behind the first spawn. After that, the male drove the female away. The first spawn hatched on the third day. The second spawn hatched on the third day after they were spawned. I then filled a five gallon aquarium with water from the spawning tank, and put the flowerpot into the 5 gallon tank with the male.

The first spawn became free-swimming on the next day after their move to the 5 gallon, the second spawn became free-swimming two days later. I fed them live baby brine shrimp for their first food, which they willingly gobbled down. I added flake food to their diet on the second week. They did eat it, but not much.

The fry to me are very slow growing. At the end of thirty days, I had about 300 fry averaging about 1/4 to 1/2 inch in size. Water changes were made in the amount of 5% per week. The fry are 1/2 to 3/4 inch at the end of sixty days.

Since the first two spawnings, my group of 6 leaffish, 2 males and 4 females, have spawned 5 more times. The same male has spawned all seven times, not letting the other male spawn at all.

This is a very interesting fish. It moves slow, and gracefully when it moves.

(from The Youngstown Aquarist, Youngstown Area Tropical Fish Society)

COMPUTERIZED AQUARIUM?

by George White, PVAS

It had to happen. Some type from New Jersey has assaulted the aquarium hobby with a computer. Jersey Cow Software/Cognetics, 323 Franklin Avenue, Princeton, N.J. 08540 has devised a computer program that may well be the worst thing to happen to the hobby since goodies were taken out of the bait shop and placed in the home aquarium.

Fishies will, if your eyesight or sobriety is lacking, make your computer screen resemble a well-stocked aquarium. By loading one simple computer disc into your system, you can enjoy the sight of a number of popular species including * angelfish, swordtails and, get this, seahorses, all in the same "aquarium" with nary a fight nor problem with the ph. Imagine all this and no water changes (your living rug will be grateful), no algae to remove and no worrying about who will sit for your prize fish when you go on vacation.

Fishies also contains some neat, life-like tricks. Press the T key (for tap the glass) and all the fish will scurry about seeking shelter. The F key will provoke a feeding frenzy at the top of your "aquarium." And, now for the special New Jersey touch: hit the E key and the fish will eat each other or hit the D key and they all go belly up.

HOW FISH TRAVEL

by Kathleen Sykalski, MAS

Fish may be found in most any regions of the world - from the ocean depths to mountain streams, in shallow ponds and in deep lakes, in the store and in the home. How do they get there? How do fish travel?

Travel can be passive (the fish is carried) or active (the fish moves). Passive travel can carry fish far from their hatching sites. The eggs and young of many fish are carried by currents in oceans, lakes, and streams. Livebearing fish mothers carry young. After birth or hatching, many parent fish protectively carry young in their mouths, as in the Egyptian mouth-brooder. The seahorses have a brood pouch in which the young ride about.

Passive travel may also be by hitchhiking. The marine suckerfishes attach themselves to sharks, turtles, and even whales. The parasitic male deep sea anglerfish attaches himself by mouth to the female for a lifetime's free ride. The sea lamprey likes boat hulls.

A very unusual kind of passive travel happens when strong winds lift water masses into the air; later, the fish come down in rain. Some fish-eating birds, such as herons, have been known to drop live fish from their beaks while flying.

But it is man who does the widest passive transporting of fish from continent to continent. Exotic species are introduced, die out or do well and may even do better than the fish native to the area, causing those fish to dwindle in numbers and slowly become extinct.

What about active travel? Of course, you say, fish swim. Fish swim in many different ways. Body shape affects swimming style. Most fish have a fusiform or bullet-shaped body which gives streamlining and reduces drag. Moreover, most fish are covered with a mucous slime which further lessens drag by smoothing surface bumps. The fastest swimmers have the most ideally fusiform bodies. Tunas, mackerels, and requiem sharks are three examples.

Fish which live in quiet, weed-filled waters have laterally (side-to-side) compressed bodies, such as angelfish, discus, and marine butterfly fishes. This body shape is useful in making short, quick turns in dense cover. Some open-water schooling fish, like the herrings, have similarly compressed bodies. And the bottom-dwelling flatfish is the most stunning example of a laterally compressed fish.

Most bottom dwellers, the flatfish an exception, have a depressed (top-to-bottom flattening) body shape. Think of the rug-like skates and rays. This body shape is useful for resting on the bottom and for shallowly burrowing into the sand to hide. The goosefish and batfishes are two examples. Many catfishes show this back-to-stomach flattening, the plecostomus for instance. Such fish are not efficient swimmers but gain an advantage over other fish in adapting to life on the bottom and hiding ability.

Some fish have such bizarre body shapes that mobility is very reduced or lost. Examples are the puffers, porcupine fishes, the seadragon, which is shaped like a many-lobed leaf, seahorses, and trunkfishes.

Are fins vital to swimming? No. Scientists have experimented with fin removal in live fish and found that, with all fins removed, most fish swim competently although very slowly. Yet fins are important in fish travel. Some fish swim solely by use of their fins (seahorses) and fins are useful in making special movements, such as the fast acceleration essential to escaping predators.

The caudal fin is used in most fish for swimming at low speeds and for quick starts. Trunkfishes use the caudal as the main means of locomotion. The bowfin, on the other hand, has a long dorsal fin for main means of locomotion. The electric eel uses its elongated anal fin to get about. Pectoral fins are favored by skates, stingrays and mantas.

The medium fins (dorsal, caudal and anal) are good stabilizers and fine for maneuvering. They are like a ship's hull and help the fish stay upright. The pelvics and pectorals prevent rolling and are used for climbing, diving, banking, turning and stopping. In any of the movements, the pectorals are the most important as scientists have learned by experimenting with fin removal in living fish.

If the fins are for maneuvering and balance, the fish body is used for continuous propulsion through the water. How does a fish's body move in swimming? In the first type of swimming, as in the eels, the fish flexes its body with S-shaped motions. These motions cause the caudal fin and back part of the body to whip from side-to-side, and this side-to-side motion pushes the water backward and the fish forward. In the second swimming style, the fish contracts all the muscles on one side of its body, then all on the other side. The fish's tail wig-wags like a short paddle. In the third and most common swimming style, the fish alternately contracts muscles on one side of the body and then the other, starting at the head and moving backward, as in the trout. This causes broad side-to-side sweeps of the caudal region. In all three swimming styles, the tail moves from side-to-side.

Although fish typically swim to travel, it's not the only way of active movement. Fish also burrow, crawl, soar, leap and propel themselves by juts. Flounders burrow by wriggling in the sand and throwing debris over their bodies for disguise. The African lungfish excavates a passage in the mud and remains inside for the duration of the dry season.

Some fish crawl on the land - the walking catfish, for example. The oriental climbing perch crawls on land with its pectoral fins and even climbs up on driftwood in its search for tasty shore debris. The mudskipper skitters and jumps on mudflats in Australia, Asia and Africa.

Some fishes fly through the air. Sailfish and tarpon can hurl their bodies through the air. Sailfish have been known to leap as high as 40 feet. Some fish jump in schools - the brook silverside, for instance. Mulletts and carps escape nets shore seiners by jumping over them. And everyone has heard of the fantastic leaps of the salmon in its migration to its spawning grounds.

Some fish even glide - the fish swims up through the surface of the water at a very sharp angle and high speed, then soars on its extended paired fins. Examples are the marine flying fishes, the gurnards, and the African chiseljaw.

How fast can fish travel? The winning speeds belong to the sailfish and swordfish at 60 mph. The tuna gets a close second at 50 mph.

Finally, where do fish travel? Most species have small home ranges in which they move about, but some fish are great travelers and always on-the-go, such as salmon, which feed in the sea and spawn in fresh water, traveling distances of 3,000 miles or more. Fish travel from the deep to the surface waters. They go offshore and onshore, upstream and downstream. Many fish must travel to spawn or in search of food. Lake dwelling suckerfish and lampreys ascend tributary streams to breed. Some fish follow their food halfway around the world, albacore for example.

So how do fish travel? They are carried, hitchhike, or get there on their own. They walk, crawl, climb and glide. They move at top speeds or aimlessly drift with the currents. They travel from the depths to the surface, up and downstreams, around the world and even up into the sky to come down again with the rain.

Reprinted from THE SPLASH
The Publication of the Milwaukee Aquarium Society

A LOOK AT FISH NUTRITION

by Dan Arbogast

COLORADO AQUARIST

Did you know that nutritional deficiencies are the basis for many of the disease problems in fish? If you are having a hard time keeping your fish healthy, a good look at the diet that you are feeding them should be included in the search for the cause of the troubles. Fish are your captives. They can only eat what they find in their tanks, and that places the responsibility of providing all the necessary nutritional elements in their proper proportion from the diet given by you, their keeper. If a nutritional deficiency itself is not serious enough to harm the fish, it can cause the fish to become vulnerable to parasites that would not normally invade a healthy fish.

Unfortunately, pinpointing a dietary deficiency as the primary cause of a fish disease is many times a very difficult task. However an understanding of the general nutrient requirements for fish will help an aquarist keep his or her fish in top condition.

Fish, like most other animals, obtain energy for body maintenance and growth from calories obtained from their food. A look at the digestible energy from different food components of most animals compared with fish does note a significant difference. Most other animals, on the average, can obtain 4 Kcal from one gram of protein, 9 Kcal from one gram fat, and 4 Kcal from one gram of carbohydrate. Fish have been found to obtain 3.9 Kcal of digestible energy from one gram of protein, 8.0 Kcal from one gram of fat, and 1.6 Kcal from one gram of carbohydrate. Obviously, the fish are comparable in their ability to obtain energy from proteins and fats to most other animals. But look at the difference between the energy digestibilities from carbohydrates.

Fish are actually normal diabetics and cannot tolerate high carbohydrate levels in their diets. Excessive sugars in a fish's diet causes poor growth, listless activity, and glycogen buildup in liver tissue, which can become up to 18% of the liver mass. Less than 20% of the diet being carbohydrates seems to be a good figure to remember.

Proteins are needed by the fish not only for energy but as the building blocks for growth and body activities. Most of the commercial diets on the market contain at least 40% protein. The signs of protein deficiency in fish is poor growth, lack of appetite, and reduced activity. The fish are able to digest some of the proteins better than others and the digestibility of the protein is affected by the type of proteins present and by their sensitivity to hydrolysis by the fish. A diet may boast about 50% protein, but only 30% may be usable by the fish. Fish meals tend to have relatively high protein digestibility, whereas alfalfa for some fish is only 13% digestible.

It is interesting to note that goldfish are able to digest 66% of the protein in alfalfa meal, but are able to digest 92% of the protein in white fish meal.

It is important to realize the protein fed to the fish must contain the proper amounts of indispensable amino acids required by the fish. Ten amino acids have been found to be necessary for healthy growth, and the lack of any one of the ten will cause problems. Perhaps the most illustrative example of an amino acid deficiency is the condition caused by too little tryptophan in the diet. A grossly distorted backbone results, but is quickly eliminated by replacing the needed amount of tryptophan into the diet. What does this all mean to the aquarist? Many different protein sources have to be used to make sure the fish are getting all the required amounts of the necessary amino acids.

Fats are the major source of energy for fish. But be forewarned! Too much fat causes fatty degeneration of the liver and also kidney troubles. A diet with over 15% fat will cause problems. Fish do need one essential fatty acid and it must be found in at least 1% of the diet. Deficiency of this essential fatty acid causes reduced growth, dermal depigmentation, necrosis of the caudal fin. Fish oils are very high in the essential fatty acid and have been found to stimulate growth when included in fish diets.

It would be tragic not to say something about the 14 vitamins that fish need for a healthy condition. Although not all the daily requirements for each of these has been found for all fish, (and I suspect the requirements vary significantly from species to species) the aquarist must try his or her best to supply at least the minimum amount of vitamins for the fish. This can be done in most cases by varying the diet and supplying many different ingredients.

The quantity of food offered to the fish is about the hardest thing for a new member of the hobby to learn. That comes with time and a little experimenting. Also, to get the most out of any diet the particle size of the food must match the need and size of the fish.

Something must be said about feeding live foods. Everyone who has ever fed live foods has to admit it stimulates growth and enhances the fishes health. But it cannot supply all the requirements of these fish as a steady diet and has to be supplemented with other foods. Take for example brine shrimp. Fish love it. That's good. But nutritionally it doesn't stand out. Even commercial shrimp dealers will only guarantee their product to contain 5% crude protein and 0.24% crude fat. (San Francisco Bay Brand, check it out)

Fortunately most of the diets commercially available today do take into account all the dietary requirements found for fish, but I have found some that Don't. It is possible to formulate a diet that will supply all the necessary elements in their proper proportions and feed as a staple diet. (The trout and channel catfish industries

have done it for years.) The aquarist has to be the judge of how his fish react to a certain diet and have an open mind to change and keep experimenting until the fish look and act the best possible. You will notice the difference!

Reprinted from the Colorado Aquarist, February 1979.

TRADING POST

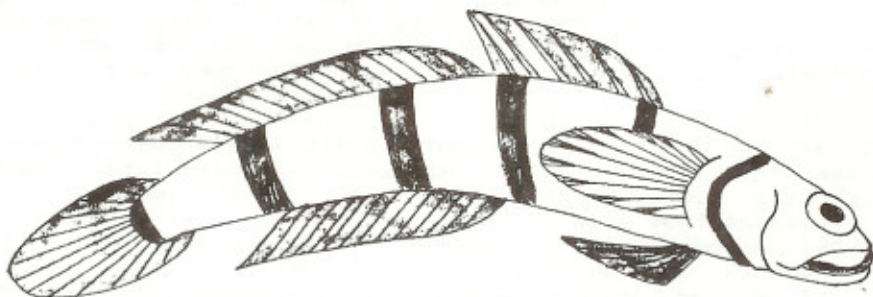
Ads for the Trading Post should be sent to Tom Hetzel, 5601 Seminary Road, Apartment #1702, Falls Church, Virginia 22041 by the 15th of the month prior to publication.

Remember at the meeting we will a Door Prize and Raffle Prizes.

A Mini-Auction.

Bowl Show.

THIS SPACE CAN BE USED BY ANY MEMBER WRITING A BREEDER'S AWARD ARTICLE. IT DOES NOT HAVE TO BE EMPTY.



PVAS Board Meeting - Jan. 4, 1988

President Gene Aldridge hosted the meeting, convening at 7:45p.m.; Also present were Ray Hughes, John Jessup, John Mangan, Bob Pallansch, John Stieringer, Pete Thrift, and Kenny Warren.

Gene announced:

that The Delta Tale would be late in January due to delays in layout and printing; new members are to be notified of the general meeting on January 11.

the Raleigh Workshop will be 26-28 February, 1988; the New Jersey Show 30 April - 1 May (ours will be 20-22 May).

PVAS' March 88 program will focus on how to set up a marine tank.

Pete Thrift, 1988 Spring Show Chairman, discussed possible rule changes; The following were approved by the board:

The maximum show entry fee for PVAS members will be \$20.00, to encourage multiple entries from our membership.

All auction bids will be in \$1.00 increments; the auctioneer may establish minimum opening bids as needed.

The board agreed to distribute the Show Flyer in early February.

Show Brochure options were discussed; to continue as before, with PVAS printing store ads in return for donations, or simply accepting retailer-printed copy for insertion in the Brochure or counter display. The matter was tabled for action in February.

The meeting adjourned at 9:20p.m.

Respectfully submitted,

Robert 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 or 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.

BREEDER'S AWARD PROGRAM STATUS

Grand Master Breeder

| | |
|-------------|-----|
| John Jessup | 580 |
|-------------|-----|

Master Breeder

| | |
|---------------|-------|
| Garland Neese | 1,115 |
| Gerry Hoffman | 895 |
| Woody Griffin | 610 |

Advanced Breeder

| | |
|-------------|-----|
| Ruth Brewer | 305 |
|-------------|-----|

Intermediate Breeder

| | |
|--------------|-----|
| Alex Cummins | 205 |
|--------------|-----|

Breeder

| | |
|------------------|-----|
| Nathan Manuaring | 100 |
| Kenny Warren | 90 |
| Gene Aldridge | 80 |
| George White | 60 |
| John Mangan | 50 |
| Amy Stirman | 50 |

Members Working For BAP Status

| | |
|----------------|----|
| Sharon Steele | 40 |
| Pat Gore | 10 |
| Leslie Stirman | 10 |

BOWL SHOW REPORT FOR

JANUARY

| CICHLIDS | EGGLAYERS/LIVEBEARERS |
|------------------------|----------------------------|
| <u>New World Large</u> | <u>Anabantoids</u> |
| 1st None | 1st None |
| <u>Rift Lake Mbuna</u> | <u>Catfish/Corydoras</u> |
| 1st None | 1st C. rabanti T. Fitz |
| | 2nd C. robiniae R. Hughes |
| | 3rd C. barbatus R. Hughes |
| <u>Open</u> | <u>Open</u> |
| 1st None | 1st N. guentheri T. Fitz* |
| | 2nd N. korthausi T. Fitz |
| | 3rd N. jubbi jubbi T. Fitz |

Judges Choice -- N. guentheri Judges G. Hoffman, D. Mann

TOTALS

| <u>MONTH</u> <u>QUARTER</u> <u>ANNUAL</u> | <u>MONTH</u> <u>QUARTER</u> <u>ANNUAL</u> | | | |
|---|---|---|---|---|
| NONE | T. FITZ | 6 | 6 | 6 |
| | R. HUGHES | 5 | 5 | 5 |

FEBRUARY CLASSES

CICHLIDS: New World Medium (4 to 7"), Haplochromis, Open

EGGLAYERS/LIVEBEARERS: Guppies, Barbs, Open

This is a good start for 1988, so let's continue

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, Maryland 20852
424-PETS

RICK'S FISH & PET SUPPLY
36 South Market Street
Frederick, Maryland
(301) 694-9664 831--6868

AQUARIUM CENTER
Randallstown Plaza Center
Liberty Road at Offutt Road
(301) 521-4529

PET MART ROCKVILLE
2230 Veirs Mill Road
Rockville, Maryland
762-3505

FISH FACTORY AQUARIUM
582 North Frederick Avenue
Gaithersburg, Maryland 20877
(301) 977-7500

SHOWCASE AQUARIUM
11248 11250 Triangle Lane
Wheaton, Maryland 20902
942-6464

GAITHERSBURG PET CENTER
642 Quince Orchard Road
Gaithersburg, Maryland 20878
(301) 948-1133

TROPICAL LAGOON
9439 Georgia Avenue
Silver Spring, Maryland
585-6562

GLENMONT TROPICALS
Glenmont Shopping Center
12345 Georgia Avenue
Wheaton, Maryland
949-0344

CONGRESSIONAL AQUARIUM
Congressional Plaza
152 Congressional Lane
Rockville, Maryland 20852
881-6182

PETLAND
White Flint Plaza
5268 Nicholson Lane
Kensington, Maryland 20895
(301) 231-5216

MONTGOMERY TROPICALS
7845-G Airpark Road
Gaithersburg, Maryland 20879
(301) 670-0886

SUPPORT YOUR LOCAL PET SHOP -- THEY HELP SUPPORT US

VIRGINIA

PETS-N-THINGS

Pan Am Center
3081 Nutley
Fairfax, VA 22031
(703) 573-4400

TYAU TROPIC-CARE

6905 Duke Dr.
Alexandria, VA 22307
Day (202) 364-5014
Eve. (703) 6713

ANNANDALE PET SHOP

Markham East Center
4231-F Markham
Annandale, VA
256-2400

AQUARIA INTERNATIONAL

2575-A Shirlington Rd.
Arlington, VA 22206
(703)685-1480

BAILEYS PET CENTER

Leesburg Pike Plaza
.3527 S Jefferson
Baileys Cross Rds.
Falls Church, VA
931-1400

BEACON MALL PET CENTER

Beacon Mall Center
6776 Richmond Hgwy.
Alexandria, VA
660- 6100

DISCOUNT PET CENTER

Manassas Shopping Center
9028 Mathis Ave.
Manassas, VA 22110
361-7769

NATIONAL PET & AQUARIUM

Willston Shopping Center
6168 Arlington Blvd.
Falls Church, VA
533-7828

OAKTON PET SHOP

Oakton Center
rt. 123 & Hunter Mill Rd.
Oakton, VA
281-9622

PET MART TYSONS

8417 Old Courthouse Rd
Vienna, VA 22180
893-8181

WILSONS PARROTS & MARINE LIFE

6701 Loisdale Rd
Springfield, VA 22150
922-7358

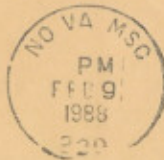
SUNSHINE PETS

7395H Lee Highway
Falls Church, VA 22042
573-6946

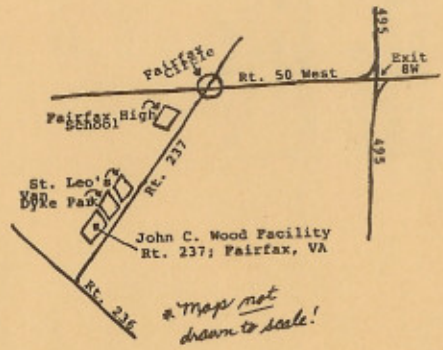
Herndon
Quart Centre
462 Eiden St.
437-0381

PETS, ETC.
Sterling
Hechinger Jamesway Plaza
243-C Harry F. 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



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

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

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

