DELTA TALE

APRIL, 1981

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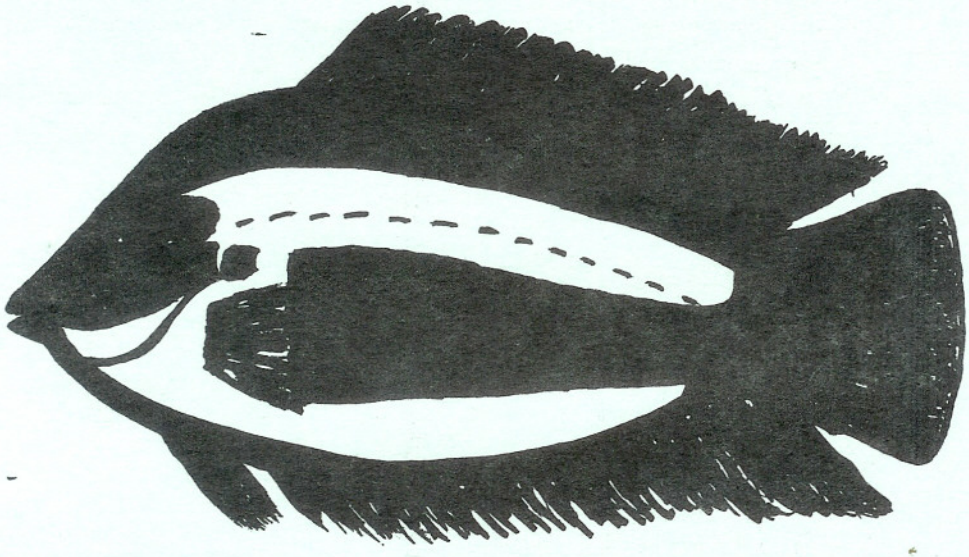
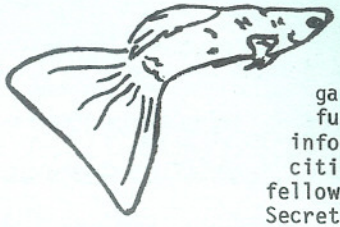


UARU AMPHIACANTHOIDES

V. Edmondson

NEXT MONTH: Annual SHOW & AUCTION



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.

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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	Bowl Show :	Mark Prendergast
BAP :	Gerry Hoffman	Programs :	Gerry Hoffman/ Ruth Brewer
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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 THE BOARD OF GOVERNORS MEETING, March 2, 1981

Meeting was held at Ken Fisher's home and called to order at 8:03 p.m. In attendance were John Jessup, Darrell Holman, Vince Edmondson, Woody Griffin, Maggi Mahoney, Pete Tietjen, Chryss Guiler, Kenny Warren, and Ken Fisher.

Ken Fisher gave the Treasurer's report; a;though the money is going out faster than it is coming in at present, we are still financially healthy and it's all for the good of the club.

Wayne Hilburn has written letters to the Fish and Wildlife Commision and to Stan Parris regarding the volunteer program at the National Aquarium.

Maggi Mahoney announced that Vince Edmondson has volunteered to be the new Editor of the Delta Tale. He will take over as of the April issue.

A motion of thanks was made to Maggi for three years (this month) of having done this relatively thankless chore.

The bill for printing the Delta Tale must be raised again due to the rapid rise in the cost of supplies. Although we have a bid from our printer on the stationary, Ken Fisher says that he can have it done for less. It was given to Ken.

There was a discussion as to whether the BAP Committee should be a continuing one, or at the discretion of each year's president. Since all other committees continue or are reappointed at the discretion of that year's president, it was confirmed that the BAP should also conform.

In regard to the Spring Show, letters are all out to prospective judges. We have had two yes answers and one no, with four yet to be heard from. A letter and deposit have gone to the Jefferson Fire House.

Maggi has a partial flier, and will try to get the entire thing finished and printed by Monday's meeting. The letter to suppliers has been written. Chryss will try to get it out as soon as possible. We will again raffle off a 55 gallon set up, with raffle tickets to be sold by the book, and outside of the show and auction.

We will have more Tee Shirts printed for sale.

Monday's Mini-Auction was discussed and assignments were made.

Meeting was adjourned at 9:25 p.m.

Respectfully submitted,

Maggi Mahoney, Recording Secretary

SPAWNING THE BLACK TETRA
GYMNOCORYMBUS TERNETZI

by Gerry Hoffman

One of the most popular aquarium fish that has been introduced to the hobby is the Black Tetra, Gymnocorymbus ternetzi. Beginners put some of these dark finned beauties in their first community tank, and being a hardy fish, they often outlive and outeat their tankmates. Now a high-finned strain is available, nicknamed the G.T.O., and for anyone interested in spawning tetras, it presents no more difficulty than the regular variety.

My pair of GTOs was set up for spawning in the typical tetra fashion and have spawned regularly each time they are put together. Just put them in the tank the evening prior to your anticipated spawning and observe the action the next morning. The only factors that seem to determine how successful the outcome will be are the water quality (hard in our area, whereas soft water is traditionally required) and the presence of snails. If you are asking what are snails doing in a spawning tank, I'll get to that subject in a minute.

The high-finned strain of Black Tetra was developed in Czechoslovakia and after being introduced into this country soon became a hit with its graceful finnage, good-natured temperament, and ease of breeding. The normal Black Tetra is often recommended for someone who wants to try a spawnable tetra, so I thought I would see if my beauties were ready. My females were very large, coming from Florida and certainly ready after a few weeks of voracious eating, but I had no males. I selected one from a tankful of small GTOs, hoping that I picked a male and not a small female. My choice was a good one and they spawned the next day.

The female was at home in a ten gallon set-up, a clean, well-aged aquarium with some small plants, large clumps of Java Moss, and yes, snails; lots of these spiral shelled guys that live in the gravel most of the time. The tank was healthy, with a recent water change, had plenty of light, and filtered by a corner box filter. Not exactly your sterile set-up, but except for the snails as predators of little eggs, a terrific biosystem for newly hatched fry. The male was introduced to the tank late in the afternoon and was at home immediately and accepted by the female.

Courship began around 8:00 the next morning, with the male continually pursuing the female around the tank, dancing and vibrating rapidly, often butting her in the abdomen close to her pectoral fins as if trying to herd her to the plant cover. As they approached the plant masses, their bodies were in close contact side by side, the male visibly trembling all the while, and both were positioned at about a 45 degree angle with heads elevated. The pair burst forward and upward doing a sort of loop the loop, separating at the top and releasing a flurry of eggs. They pair off again immediately and spray the plants with eggs again and again until the female swims off to hide for a short break. The male never ceases to tire playing hide and seek, because as soon as he finds her she can't resist "mating dance" and they are at it again.

Eggs are generally expelled near the surface level into the plants so they can fall among the leaves. Being adhesive, they stick on contact and are left alone by the parents. They may eat free falling eggs, but in several observed matings I have not seen them search out and devour eggs like many other tetras. Two hours later, the female hides for good, at which time it is wise to remove

the parents. A quick examination by flashlight should reveal eggs stuck to the many leaves of the plants you are using. My Java Moss was full of eggs, as were the fine root hairs of floating water sprite. Eggs that fell to the bottom stuck to the gravel, filter box, and even snails on the move.

Here is where my success factors come into play. Most of the eggs that hit bottom will be found by the scavenging snails. They will even crawl among the plants and probably nibble on a few more. But when fully mature adults spawn, you can afford some loss with the hundreds of eggs released. Unless you are raising for profit, you don't really care if some are lost. Many eggs turn white within eight hours, but the percentage of infertile eggs dropped to with each subsequent spawn. I don't try to condition my water other than using Novaqua, so the water hardness was probably lower in this aged aquarium than in a sterile, fresh set-up. In a later spawning, all the newly hatched fry succumbed before reaching the free-swimming stage. The tank had 80% fresh water and there has been a lot of additional chlorine added to our water lately. I didn't try distilled water, extra Novaqua, or a water softener, and the results were disastrous. My clean, old tank works great and would be terrific if the snail population were lower.

The micro-organisms in this set-up were probably beneficial in the success in rearing the fry in the first days. The eggs hatch in 24 hours, remain hidden in the plants for a few days until free-swimming. Baby brine shrimp is eaten in a few days, so they like an infusorial growth for their first foods. Growth seems slow at first, but they soon begin to acquire the body shape that is characteristic of Black Tetras. Good growth is achieved with adequate space, so they should be moved to larger quarters as needed. Smaller tanks initially allow you to keep plenty of food where they can find it easily, but once they begin to accept flake foods they can be moved without worry.

Hopefully, one or two of my fry can be raised with fins that are intact and not ripped, as store bought specimens are often seen. GTOs are truly beautiful when full grown and shouldn't be passed over in search of more colorful fish. Why not try a hardy fish that is easy to spawn and get some personal satisfaction in seeing your efforts rewarded.

PULP FROM HAMMER'S MILL

By James K. Langhammer, GDAS

Portions of the Article....

Recently there has been an upsurge in criticism regarding the Breeder Award Program by well-meaning persons.

Lately, one frequent dissent with the program has centered on "inequality" of point values, and several clubs have proposed re-evaluating the point system. This saddens me for two reasons: (1) They do not understand the concept of equality here, and (2) they are throwing a great hurdle in the path of the long-hoped-for national BAP system whereby points could be transferred from one club to another..

Equality of award is assured by each species having a firm point assignment. John, Mary, Paul, and Francine all receive X points for species B. To change that point evaluation in mid-program is illogical since the new evaluation can accomplish not one whit more than the old.

I admit that some point values are illogical (a great conceptual difference from "unequal"!). When the program was first activated, some species were virtually unknown in metropolitan Detroit. For example, I do not believe Geophagus brasiliensis had ever been bred here prior to January 1968. Hence, on hearsay alone, we decided that Geophagus should be 15-pointers. Unhappily, once G. brasiliensis was bred repeatedly, its virility and fecundity seemed more akin to Cichiasoma nigrofasciatum than to other Geophagus and the illogical point value became apparent. However, to change that value could only have caused monumental confusion and would have accomplished nothing in terms of equality. Furthermore, many species which at one time were decidedly difficult to breed as wild imports e.g., angelfish--are now, in the case of P. scalare at least, relatively easy to Breed. As stocks of discus, catfish, gobies, ect., become more domestic and easier to breed, are you going to create the precedent of constantly devaluating them? I hope not! At least not in some misconstrued attempt to achieve equality..

The original point assignments were made on several considerations, not just on difficulty of breeding. Included in consideration were: problem of conditioning and maintaining the breeders (e.g., Poecilia versus Belonesox), problem of housing the family-to-be (e.g., Cichlasoma nigrofasciatum versus C. dovil), problems with incubation (e.g., Rivulus versus most Cynolebias), problems in feeding the fry (e.g., tiger barbs versus cherry barbs), disease susceptibility, and growth requirements of at least 10 fry to 60 days of age. Each varies somewhat even between related species and we tried to determine the points logically; occasionally we goofed in such cases as G. brasiliensis and a few soil-spawning killies. But in these cases, every aquarist can equally reap those "bonus" points if he so chooses.

Some clubs modified our original rules by reducing number of fry kept and the number of rearing days. There can be no doubt that in some cases this profoundly lessened the effort expended--e.g., wouldn't you rather keep 5 Belonesox fry for 30 dyas than 10 for 60? But--within their own respective club the rules are fair to everyone; equality still exists therein. Only in the case of point transfer between clubs would problems arise.

It seems certain that in the case of newcomer species we will often make errors in point assignment. Every species can be for someone a real problem. If the first person to spawn a species repeatedly has difficulty, then the fish will probably be tagged as difficult until considerable experience to the contrary has been logged..

Some uncommon species have been maintained in Detroit and even disperded to other areas of the country simply because they proved easy to breed and have sufficiently high point values to keep them cycling locally. Thus another great plus to the BAP is species maintenance. Since each new club member will often start his own climb up the BAP ladder, the species tend to stay in those areas where BAP's are located. This is a decided advantage for species which for one reason or another will never be destined to become a "bread and butter" fish to the commerical end of the hobby.

Breeder Award Programs stimulate hobby-supporting sales of surplus fish, horsetrading sessions, friendly rivalries, original articles for club magazines, and development of all round good aquarists without seriously sacrificing anything that I can see.

Hobbyists have pleaded for recognition for "first-time spawns" of new species and for creation of new morphs or varieties of fishes. First off, equality for all BAP participants is immediately sacrificed and this is one of the basic tenets of this program--" equal reward for equal effort". Most new varieties occur in spite of the aquarist, not because of him! And insofar as "first-time spawns" go, what possible logic underlies such favoritism? First time where? In the club, state, country-? If you awarded someone points today and find out tomorrow that the fish was spawned last year--then what? What real acheivement do "first-time spawns" represent--for most livebearers, killies, or cichlids? There are literally hundreds of fishes awaiting importation for the first time which are as easy to breed as any already in the hobby. Why should the fellow who lucks out by getting stock the day of importation be rewarded with special, one-time-only points for a fish that anyone could breed?

For those fishes which the original BAP committee considered were a real challenge or were so uniquely desirable to the hobby that local propagation was desirable, twenty points were assigned. Here in Detroit, to have spawned a 20-pointer is status in itself!-perhaps equal to or even greater than any single one of the BAP achievement plateaus! Why effectively penalize the second or third spawns by specially rewarding the first?

Reprinted from...THE KITSAP AQUARIAN...Silverdale, WA via...TROPIC TANK TALK GDAS, Royal Oak, MI.

THE OCTOPUS

by Susan P. Sprague

CLASSIFICATION

Kingdom	Animalia
Phylum	Mollusca
Class	Cephalopoda
Subclass	Coleoidea
Order	Octopoda
Suborder	Incirrata
Family	Octopodidae
Subfamily	Octopodinae

EXTERNAL CHARACTERISTICS

The octopus is composed of a globular body with a head surrounded by eight arms with suckered discs. The body is composed of the heavily muscled mantle which encloses the visceral mass. The skin has wart-like projections which can change shape.

The head has a pair of well-developed eyes. The mantle joins the head at the neck with the arms which are united by a membranous web. The funnel is a projection located at the neck for expelling water from the mantle cavity.

The arms have one or two rows of suckers which are attached directly. These suckers are a muscular membrane thickened at the rim which with contraction raises the center to form a partial vacuum. This gives the octopus his strong grip on objects.

The beak is located at the base of the arms. It is made of black chitin and has the appearance of a parrot beak.

UNUSUAL INTERNAL CHARACTERISTICS

Radula are ribbonlike sets of hooked teeth which are rasped back and forth to tear food or make holes in the shells of prey. These are located on the front surface of the tongue behind the beak. New teeth are continuously being formed to replace worn teeth.

The posterior salivary glands contain poison in some octopi. The poison when injected appears to affect the central nervous system of the victim. The poison is sometimes so potent as to be able to kill a man. This is exemplified in the blue-ringed octopus of Australian waters

Chromatophores are pigment cells located in the skin of the octopus. They are controlled by muscular action. Normally the cells are very small but when the muscles contract, the elastic walls of the chromatopores expand. The enlarged cells enable the granules of pigment to show. The pigment colors are yellow and brown and numerous combinations of colors are created.

The ink sac is a pear-shaped organ attached to the rectum. The secreted ink is a thick purplish-black. It seems to have various uses as a smoke screen, as a dummy, and possibly to paralyze the olfactory sense of their enemy, the moray eel.

NORMAL HABITAT

Octopi are marine animals which prefer calm waters. Depending upon the genus and species, their habitat can range from sandy to algae covered to rocky bottom. The depths at which they can live range from approximately 3 feet to over ½ mile. The octopi are found in most waters from the Arctic and Antarctic to the sub-tropical and tropical seas. The most common species are found in the latter locations.

The octopus generally establishes a solitary home ranging from a rocky cave to a coral reef to an empty bottle. An octopus will fight another to keep his lair for homself.

NUTRIENT PROCUREMENT

Octopods are predatory hunters. They attack fish, other molluscs and crustacea especially their favorite crabs. The animal has been known to wait patiently until and unsuspecting victim passes by. According to one account, an octopus may wave his arms, with his white sucker discs visible, at a crab. When the crab is attracted by the motion and color, the octopus seizes the crab with his arms. He then pulls the crab under the web-like base of his arms, paralyzes the victim with poison, and then eats at his leisure.

DIGESTION

Once the octopus decides to begin his meal, he brings the food to his beak. With the beak he can get at the fleshy parts of his meal. The radular teeth behind the beak and within the pharynx help in this respect. The food then passes through the esophagus to the stomach where grinding pads on muscular walls act similarly to a bird's gizzard. Nutrients are worked upon by secretions from the liver and pancreas. Digestion is completed in the intestine. The waste products are passed through the caecum, rectum, and the anus which opens into the funnel through which the products are expelled.

PROTECTION

The octopuses main enemies are eels and groupers and he uses various mechanisms for protection from them. He hides in his lair which usually has an opening too small for his enemies to fit into. He also employs homochromatism whidh is the ability of the animal to take on the color of the object on which he is resting. The wart-like protusions on his skin can change form to give the appearance of coral or rock.

he octopod uses his jet propulsion and release of ink simultaneously to cloud the area and escape. He may also cast off an arm which he can regenerate.

SENSORY EQUIPMENT

The octopus has finely perceptive sensory equipment. The tips of his arms are delicate and can reach into paper-thin openings. They are sensitive to whatever he touches.

The eyes compare favorably to the vertebrate structure. There is a transparent cornea; an iris diaphragm; a moveable lens; a retina on which to focus the object which he sees. He can raise his eyes on telescopes and turn them in various directions.

He is fitted with statocysts which maintain his balance and are analagous to the semicircular canal in vertebrates.

The olfactory sense is well developed.

NERVOUS AND CHEMICAL SYSTEMS

Octopods have a well developed nervous system with nerve ganglia concentrated in a brain enclosed by a cartilaginous "skull." There are 14 main lobes with the optic lobe being the largest. There is a sub-frontal lobe which appears to play a part in object recognition by touch.

The body, and especially the arms and suckers, have a high degree of chemical sensitivity.

INTERESTING FACTS

The mode of reproduction and egg care in these animals is interesting. The 3rd arm of the male is specialized as a sexual prgan to transfer the spermatophores from male to female. Some species detach the whole arm into the female body. The female can store the sperm packets from a day to months. She uses them for fertilization when she is ready to lay her eggs.

The female octopus cares for her eggs until they hatch. She deposits them in her cave and blows water on them to remove debris and parasites. This also keeps oxygen-rich water flowing over them. During the time the female cares for her eggs, she may not eat.

GAS EXCHANGE

In order to receive oxygen, the octopus expands his mantle which draws water into the mantle cavity at the neck. This passes water over the pair of gills where the gas exchange takes place through the walls of the capillaries. When the animal contracts his mantle, he closes the neck opening and water is expelled from his funnel.

CIRCULATORY SYSTEM

In the octopus there is a closed circulatory system. There are separate hearts for the pumping of blood to the gills and the rest of the body. The blood that goes to the gills is pumped by 2 branchial hearts-one for each gill. Blood comes via veins from body tissues and is carried through capillaries into the gills where it takes up oxygen. The oxygenated blood then passes through the atrium of the branchial hearts into the systemic heart. From this heart the blood is carried through arteries and capillaries to the other parts of the body.

The blood of this animal has hemocyanin as its oxygen carrier. This compound has copper as its core instead of the iron in hemoglobin. The hemocyanin is not found in cells but dissolved in the blood plasma. The hemocyanin has a characteristic blue coloration.

LOCOMOTION

There are numerous ways in which an octopus can move. The usual method of locomotion involves crawling along the sea floor. This is accomplished by reaching out with a few arms; adhering his suckers to an object; pulling himself from the previous spot to the new location while releasing the suckers on the arms at the prior position.

Another way he moves is by swimming. He alternately contracts and releases his basal membrane which closes and then spreads the arms. This is accompanied by expulsion of water from the funnel.

In the process of normal respiration, the animal ejects water from his funnel. When the octopus wants to escape in a hurry, he uses his jet propulsion system. He does this by contracting his mantle rapidly which expells the water quickly through the funnel.

SUPPORT

The octopus has no internal or external bone-like support for his body. Some octopi have a remnant of the shell their ancestors had in the form of small internal rods below the skin. The animal is supported by the heavily muscled mantle and the arms.

LEARNING EXPERIENCE

The ability of octopi to learn from experience is unusual for an invertebrate. Some have been taught how to get a meal from a cork stoppered glass jar by prying off the cork with their arms. Other individuals were electrically shocked when they touched a certain colored disk with a crab as bait. After a few instances of being shocked, they no longer reached for the crab when they saw the colored disk.

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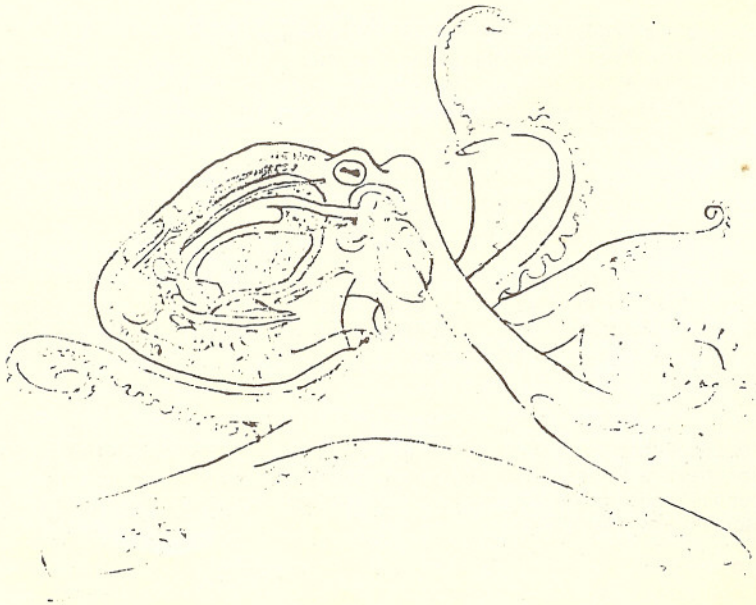


BAP REPORT

NAME	POINTS
Garland Neese	570***
Pat and Maggi Mahoney	380***
Gerry Hoffman	355***
Woody Griffin	345***
Ruth Brewer	305***
Darrell Holman	215**
John Jessup	210**
Vince Edmondson	200**
Ken and June Reece	180**
Sue and Mike Sprague	165**
Kenny Warren	90*
Gene Aldridge	80*
Jim Hajdics	60*
Thompson Family	25
Tom Wright	10
Amy Stirman	10

RECENT POINTS AWARDED

Amy Stirman ----- Xenotoca **eiseni** (10 points)

Darrell Holman ----- Geophagus **steindachneri** (15 points)

Jim Hajdics ----- Aphyosemion **filamentosum** (10 points)
Aphyosemion **scheeli** (10 points)
Cichlasoma **nigrofasciatum** (10 points)
Jordanella **floridae** (10 points)

Vince Edmondson ----- Aequidens **pulcher** (10 points)
Haplochromis **mloto** (10 points)
Haplochromis **similis** (10 points)
Tilapia **mariae** (10 points)

It's my pleasure to welcome Miss Amy Stirman to the BAP, in behalf of the membership. Hopefully, she'll lead some other youngsters (and veterans) into the BAP.

Jim Hajdics has reached the Breeder plateau with forty points this month. Keep up the good work, Jim. He also made his presence felt at the March meeting, wrapping up a number of awards in the Bowl Show.

Speaking of the Bowl Show, April's categories are:

Cichlids

Angelfish and Discus
Non-Rift Lake African
Open

EGGLAYER/LIVEBEARERS

Livebearers, non-Guppy
Sharks and Loaches
Open

BOWL SHOW RESULTS AND STANDINGS, MARCH, 1981

CICHLIDS

New World Dwarf

1st - Ram - Jimmy Hajdics

2nd - Ram - Wayne Hilburn

3rd - No Entry

Rift Lake, non-mbuna/except Haplochromis

1st - Yellow Peacock - Woody Griffin

2nd - No Entry

3rd - No Entry

Open

No entries

EGGLAYERS/LIVEBEARERS

Killifish

1st - Apyhosemion **scheeli** -- Jimmy Hajdics

2nd - Aphyosemion **australe** - Jimmy Hajdics

3rd - Jordanella **floridae** - Jimmy Hajdics

Catfish, non-corydoras

1st - Upsidedown Catfish - Wayne Hilburn

2nd - Pimodella - Amy Stirman

3rd - Spotted Pleco - Ruth Prendergast

Open

1st - Dwarf Gourami - Ruth Prendergast

2nd - Brick Swordtail - Amy Stirman

3rd - Pearl Gourami - Amy Stirman

CICHLIDS STANDINGS

	MONTH	QUARTER	YEAR
Jimmy Hajdics	6	12	12
Amy Stirman	0	8	8
Woody Griffin	6	6	6
Garlin Neese	0	4	4
Wayne Hilburn	4	4	4

EGGLAYER/LIVEBEARERS STANDINGS

Mark & Ruth Prendergast	10	20	30
Amy Stirman	10	16	16
Jimmy Hajdics	14	14	14
Wayne Hilburn	8	8	8

NOVICE CLASS: Jimmy Hajdics Ram

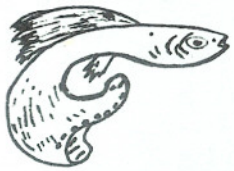
MEMBERS CHOICE: Jimmy Hajdics Aphyosemion Scheelli

Judges: Egglayer/Livebearer: Darrell Holman Cichlids: Heinz Lenzen

1st QUARTER AWARDS

Cichlids: Jim Hajdics

Egglayer/Livebearer: Mark & Ruth Prendergast



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	Corresponding	$5.00
Individual	$ 7.00	Junior (under 18)	$3.00

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 Cocca-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., Bailey'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.