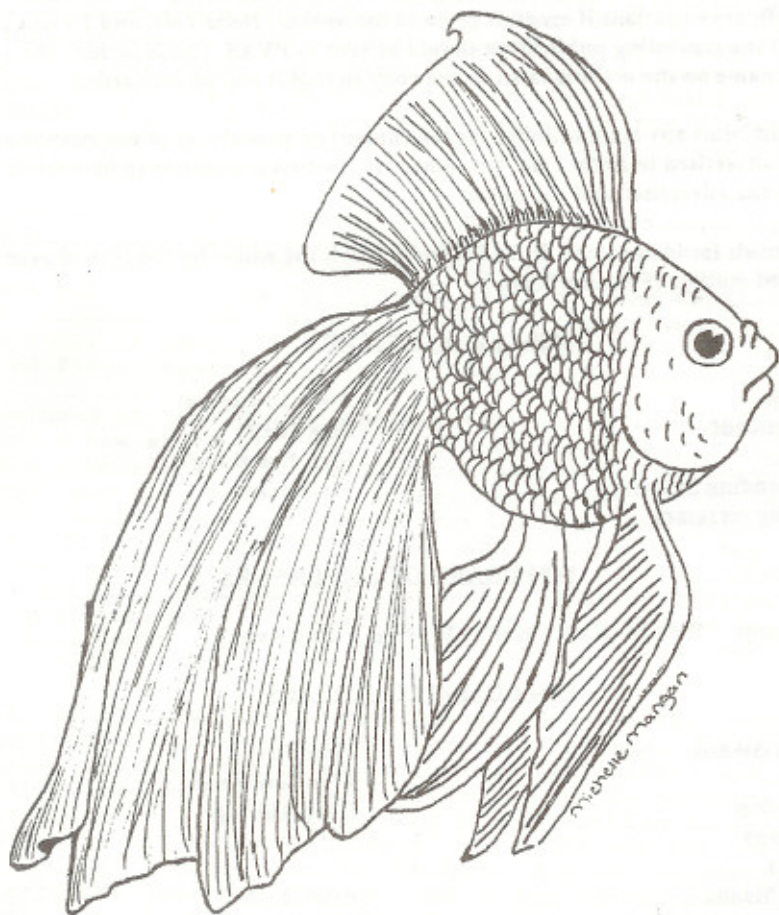


# \* DELTA TALE \*

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All correspondence to the society and to *Delta Tale* should be directed to P.O. Box 664, Merrifield, VA 22116.

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## A WORD FROM THE PRESIDENT

Well, it's been a while since I've been able to sit down and put together a President's message for the Delta Tale, and there's quite a bit of news to relate.

First and foremost, a decision was made at the last Board meeting to postpone the annual workshop until February (Kenny Warren is checking with Howard Johnson's on available dates-- thanks Kenny). We will, of course, still have the auction on Sunday, October 16, and we're looking forward to a good turnout. With so many of the Board members away this summer (including yours truly), the workshop, which requires a great deal of prior planning and follow-through, just wasn't shaping up the way we wanted. Rather than host something that would fall short of expectations and reflect poorly on PVAS, we decided to hold off for a few months. And, if last year's turn-out for the Winter Auction was any indication, maybe we'll get a bigger crowd in February than we would in October.

As for the October 16 auction, now that I've mentioned it anyway, registration will open at about 9 a.m., as usual, and the auction will start at 11. Once again, the venue will be the Howard Johnson's Motor Lodge on Rte 1, just south of the Capital Beltway in Alexandria (take Exit 1 South off the Beltway and you'll see the hotel on your left). The auction room will be in the rear, ground floor (hint - park in the rear).

I was reminded at the Board meeting that it is once again time to consider a new slate of PVAS officers for next year. If there is anyone interested in getting more involved in the club and in the hobby, and who would like to serve as an officer or as a member of the board, please let me or any other officer know. We would really welcome your participation and involvement (hey, that's what the club is all about). If memory serves, John Mangan plans to put an announcement in this issue specifying exactly which positions will be opening up and the schedule for elections (I know one position we will be voting on-- president).

Believe it or not, we still have not given up on the idea for a club tour to That Fish Place and points in between. Rick McKay has checked into the hiring of a tour bus (full size) and, if we can get about 30+ people to participate, it sounds do-able. One of us will be making an announcement at the auction to get some sort of estimate of member interest. Suggestions for the "in between" stops include Peter Thode's discus hatchery (Gwynbrook Farms), The Aquarium Center, and a behind-the-scenes tour of the Baltimore Aquarium. Please let us know your thoughts on this and whether you'd be interested in participating (the cost would be nominal -- maybe \$15 -- and the club would pick up the balance of the bus rental).

Beyond the auction and the Winter Workshop, please keep in

## *Frum the editor's desk*

The first thing I'd like to do this issue is to apologize for the extreme lateness of the last two issues. The July/Aug. issue was actually ready on time but due to "technical difficulties" there was a long delay in getting the mailing done. I could just say I mailed it on time and blame the delay on the post office, but that's not true, and I also don't want any disgruntled postal workers showing up at my front door with automatic weapons. (If the angry postal workers that go around shooting people are disgruntled does that mean that the happy cheerful ones are grunted? I've always wondered about that. Does anybody know the answer? If you do please let me know.) While on the subject of lateness- this issue is going to be late also. I have been waiting for the board to finish making plans for the fall workshop and auction so they could be put into this issue. It was just decided at the Sept. board meeting to postpone the workshop until the weekend of our winter auction. Due to quite a number of factors planing for the workshop got far behind schedule so it was decided to wait until we could do a good job rather than trying to throw together a rushed one now.

You've probably noticed by now, I hope, something different about this issue. Your editor has finally left the stone age and bought a computer. I'll be experimenting a little with different type sizes and styles over the next few issues. Let me know if there's any that you especially like, or more important, don't like. Besides making the Delta Tale look better, thanks to the spell checker there will no longer be any mispeled words in anything that I writes.

Since we have an auction coming up I guess I have to make my usual (and sometime futile) plea to **bag your fish properly**. Make sure you use the proper size bag. Don't try to stuff a big fish into a little bag. If you don't have the right size bag go to your local fish store and try to buy some. Most will be glad to sell you a few. They are very cheap. Remember the fish are going to be in that bag all day. Don't crowd them either. use two or more bags if you have to. **Don't bring junk!** If it's trash throw it away, don't try to sell it. Read the auction rules carefully (elsewhere in this issue)

On a subject related to the auction- please note that the Oct. meeting has been canceled. The meeting date is the day after the auction. We have found in the past that whenever we have a meeting the day after an auction turnout is extremely low. Besides those of us who work at the auction need time to recover. (Speaking of work- we will be needing a number of people to help out with various small jobs at the auction).


Last topic for this page- elections are coming soon. Please consider running for an office. Positions up for election are President, Vice President, Treasurer, Corresponding Secretary, Recording Secretary, and two Board of Governors seats. We really need to get some new people involved in running things.

Until next time...

*John*



# WHAT'S HAPPENING!

 For up to the minute information on what's happening call the free PVAS hotline anytime (703) 352-3365.

**Oct. 16:** PVAS Fall Auction. Another one of our giant auctions of fish, plants, tanks, equipment, and who knows what else. There's always lots of good stuff to bid on. There will also be the usual raffle of a 55 gal set-up plus loads of smaller stuff. Same location as the last couple of times- Howard Johnson's at the intersection of route 495 and route 1. More detailed information can be found elsewhere in this issue.

The workshop scheduled for this weekend has been postponed until Feb. It will be held the weekend of our Winter Auction. Watch this column, and the hotline for more info as the time comes.

**Oct. 17: READ THIS CAREFULLY** We normally hold our monthly meetings on the second Monday of the month, which would be Oct. 10. However, this date is Columbus Day and the building where we hold our meetings will be closed. We usually move the Oct. meeting to the third Monday to get around this. That date is Oct. 17. Since this is the day after the Fall Auction we have decided to **CANCEL** the Oct. meeting. Past experience has taught us that whenever we have a meeting the day after an auction turnout is extremely low.

**Nov. 14:** PVAS Monthly Meeting and election of 1995 officers. We will have all of the usual good stuff: program, door prize, raffles, mini-auction, refreshments, etc. In addition we will hold elections for 1995 PVAS officers, and two board members. I encourage everyone to consider running. You don't need any experience and we really need to get some new people involved in helping to run things. Us old timers are all starting to burn out. See any current officer for more information.

Program: Dr. Lynne Parenti of the Smithsonian Institution will be speaking on collecting freshwater and marine fishes in the Indo-Pacific area. Don't miss this one.

**Dec. 12:** PVAS Christmas Dinner. Watch this column for more details.

## TRADING POST

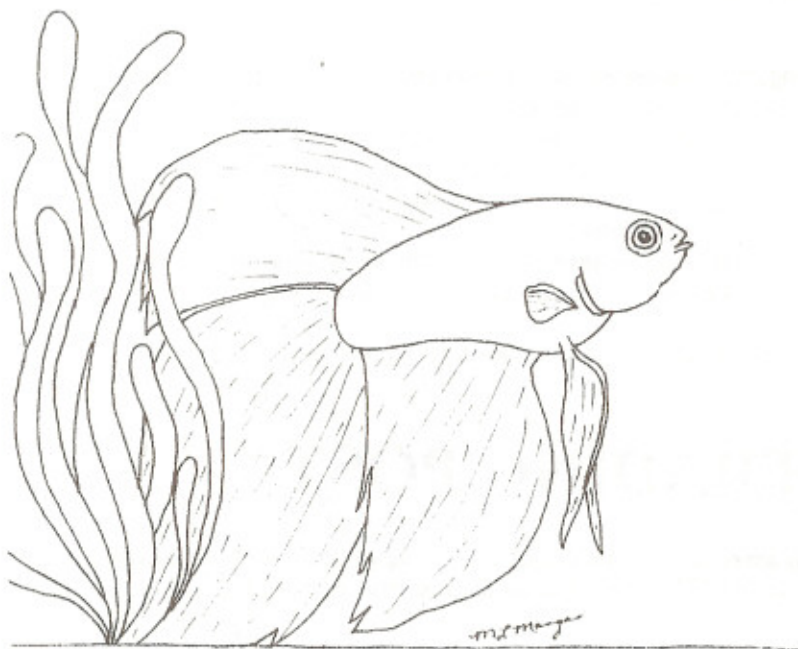
PVAS members may advertise in the trading post at no charge. Send ads to Delta Tale, PO Box 664, Merrifield, VA 22116. Deadline for the next issue is Oct. 10.

For Sale or Trade: Backissue aquarium magazines. Many different titles from the 1930's to present. Send SASE for catalog. John Mangan, 9770 Oleander Ave. Vienna, VA 22181.

mind that we're planning to have a very special presentation at our regular November meeting. Lynne Parenti, an ichthyologist at the Smithsonian, has agreed to talk with us about her fish collecting adventures in the Indo-Pacific area -- both freshwater and ocean. This should be an exceptionally interesting program and I hope as many of you as possible will attend.

Finally (it's getting late, and I promised John I'd get this in the mail), we really would like to explore ways to rejuvenate the monthly meetings and boost attendance. To this end, we're especially anxious to hear any suggestions as to how we can improve the meetings (topics, activities, etc.).

Aily



*POTOMAC VALLEY AQUARIUM SOCIETY*

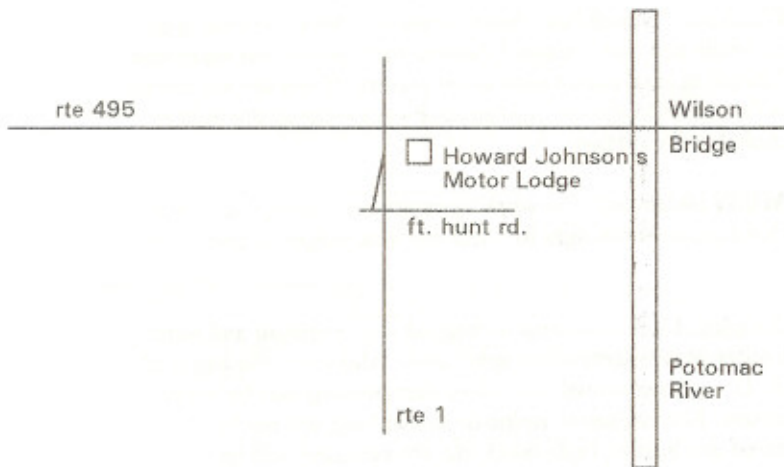
# AUCTION!

*TROPICAL FISH AND EQUIPMENT*

**HOWARD JOHNSON HOTEL**, 5821 Richmond Highway, Alexandria,  
VA. (route 1 at the beltway).

A great opportunity to buy-sell fish, plants, aquariums, books, equipment, supplies.  
We will also hold a raffle for new equipment and supplies!

Registration 9 am - 12 noon  
The auction will begin at 11 am!



Directions: Howard Johnson's is located on the east side of rte 1 just south of rte 495 and north of Fort Hunt Rd. Exit rte 495 onto rte 1 south. Howard Johnson's is located on the other side of the divided highway. Follow the signs for Ft. Hunt Rd., then turn back onto rte 1 heading north.



# POTOMAC VALLEY AQUARIUM SOCIETY

## AUCTION RULES

### RULES FOR THE SELLER

1. You do not need to be a PVAS member to buy or sell hobby-related items, including fish, plants, equipment, etc. in the auction.
2. Registration of items for sale will begin at 9 AM and will end at 12 PM. Auctioning will begin at 11 AM. Items arriving after 11 AM may not be placed on the tables until after the first break. You must be in line by 12 PM to register.
3. All items must be labeled with the identity of their contents, to include: number, sex (if possible), and other pertinent data. Use a waterproof marking pen and adhesive label. Labeling equipment will be available at the auction site, but items must be labeled before being registered.

Fish: "Pair" means one of each sex. "Mated Pair" means a pair that have spawned with each other. "Trio" means one male and two females. "Reverse trio" means two males and one female. "Mixed sexes" means at least one of each sex is present. If you are not certain label "unsexed". Any major flaws should also be mentioned. PVAS reserves the right to reject any fish judged as unsuitable for auction.

Supplies: All equipment **MUST** be labeled as to working condition, missing parts, and any other pertinent data. PVAS reserves the right to reject any item judged as unsuitable for auction.

4. **Proper fish bags must be used.** Live items must be bagged with ample air and water (don't overfill the bag with water, leave plenty of air space also). Make sure the bag is of a suitable size for the fish in it. Do not overcrowd fish. More than one bag may be joined together as one item if necessary. Fish packed in ziploc or similar bags will not be registered. If a fish is registered in a bucket, tank, bowl, etc. the container will be considered part of the item and they will be auctioned as a unit. PVAS reserves the right to reject any improperly packed item and to re-bag any item if necessary.

5. Registration is limited to 15 items per person. A limit of 5 bags per species or color variety or form is allowed unless prior approval is obtained from the auction chairman.
6. Each item to be auctioned will receive a label with an item number and a colored dot. Those items with a red dot will be auctioned first. Each seller will be given one red dot for each four items registered. There will also be three other colors. The order that they are auctioned in will be determined by the auction committee and/or chairman after the auction begins.



7. Items will be offered as is and will be sold as one item. Once registered, the contents of an item may not be split.
8. Each item carries a \$1.00 minimum bid, unless the seller assigns a higher minimum (make sure to include the minimum on your label if it is higher than \$1). The seller may lower the minimum on an item that does not sell. Items that do not sell will be set aside and offered again at the very end of the auction.
9. No payment will be made to the seller on the day of the auction. Payment will be forwarded by mail within ten days after the auction date. It is the seller's responsibility to give PVAS a proper name and address to receive payment. Envelopes for this purpose will be filled out during registration.
10. The seller will receive two-thirds of the selling price. PVAS retains one-third.
11. All items not sold must be claimed at the close of the auction, or they will be disposed of at the discretion of the auction chairman.
12. The auctioneer retains the right to set aside any improperly bagged or marked item, or any sick or otherwise unsaleable item.
13. Fish species that are restricted by either federal or state statutes will not be accepted.

## **RULES FOR THE BIDDER**

1. All persons wishing to participate in bidding are required to register with their full name and address. Bidding numbers will be assigned to all buyers.
2. Items may be inspected only before the auction and during breaks.
3. Bidding raises will be in \$1.00 increments. The auctioneer has the right to alter this on an item at his discretion.
4. Successful bidders will have their items brought to them at which time payment is expected. An authorized bidder may run a tab or pay by check. See the treasurer before the auction. Proper identification will be required in these instances.
5. **All sales are final.**
6. In all cases the decision of the auctioneer is final.

# The Nitrogen Cycle In Your Tank

by Karen Randall

Joe just set up a new tank. He set it up Monday, and let it "age" for two days, just like the book said. In the mean time, he figured out just how many fish would fit in his tank. (You know, one inch of fish per gallon of water.) On Wednesday, he went and bought ten one inch fish, and released them in his pretty new ten gallon tank. He got to enjoy his new tank right up till bed time.

The next morning, Joe found his fish gasping at the surface, with reddened gills, and blood streaked fins. Joe had done his homework, so he recognized that his fish were suffering from ammonia poisoning. He quickly changed a large portion of the water, and ran to the pet store to buy some product that removes ammonia from the water. Joe was lucky, and this saved the lives of most of the fish.

A few days later, the water in Joe's tank turned cloudy. Not realizing that his tank was doing its best to try to balance itself, Joe tried changing more water, (further upsetting the bacterial balance) and then tried a product that claimed it would clear

the water, thereby contributing another ingredient to the chemical soup in the tank. At this point Joe's poor fish had been stressed to the limit, and came down with some frightful disease. Someone suggested that Joe dose the tank with Tetracycline. The antibiotic cured the disease, what Joe didn't realize was that it also killed off all those beneficial bacteria that had been trying so hard to get established. The ammonia in the tank spiked overnight, and in the morning Joe was faced with a cloudy, smelly tank full of dead fish.

That afternoon, Joe scrubbed out his tank, and turned it into a terrarium for his wife's African Violets.

What Joe didn't understand, was how to manage his nitrogen cycle. This is the most basic lesson that every hobbyist must learn.

The minute you set up your new aquarium, whether you know it or not, the nitrogen cycle has started in your tank. With the tap water, you introduced bacteria, algae spores and who knows what all else. The minute you add a plant, a fish or a snail, the nitrogen cycle gets started in earnest.



Waste products from the animals, decaying vegetation, and uneaten food all add to the rising ammonia levels in the tank. Even a tiny amount of ammonia in the water is enough to seriously damage both fish and plants.

Fortunately, along come a type of bacteria called Nitrosomonas. They start eating the ammonia, and converting it to nitrites. Nitrites are also deadly, but the B team of the nitrogen cycle, bacteria called Nitrobacter, are ready to step in. The Nitrobacter convert the nitrites to nitrates, which are far less toxic. In fact, to a certain extent, if you want to grow live plants in your tank, you need nitrates, which act as fertilizer. At this

point, the aquarist must step in, and reduce the amount of nitrates building up in the tank by performing a partial water change.

Now that we know what the nitrogen cycle is, how do we control it? The secret is to let the ammonia production increase slowly, so the

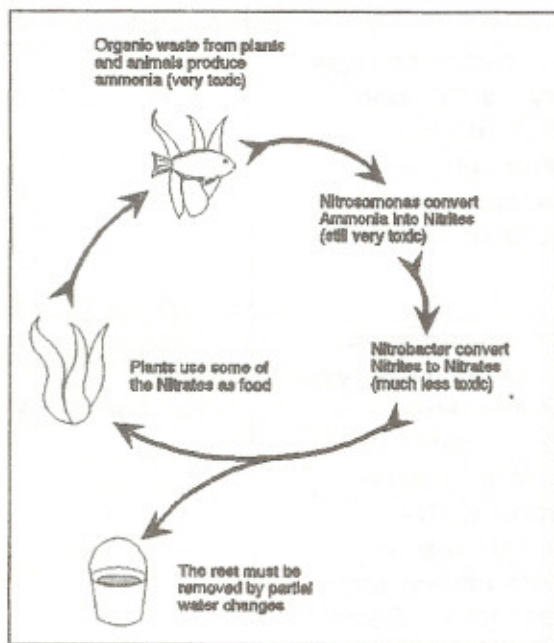
bacterial population can increase to keep pace with it. The quickest way to established tank. You can use a fairly large quantity of water from another tank, or for an even greater concentration, take a few scoops of gravel from an established undergravel filter bed, or a sponge filter that has been running for several weeks in an established tank. With

any of these methods, you should be able to completely avoid the problems Joe encountered, as long as you stock your tank in an intelligent manner.

If you must start from scratch, the key word is **PATIENCE**. Because many freshwater fish are quite tolerant of bad water quality, people often get away with adding too many fish too

fast, and letting the nitrogen cycle catch up some time later. This is what caused Joe's problems, and the many different problems lumped together as "new tank syndrome."

Here is a list that would have helped Joe to stay out of trouble and in the hobby.





1. Add fish slowly, and stick to hardy inexpensive fish in the beginning.
2. Keep in mind the adult size of the fish you buy, and stock accordingly.
3. If the water gets cloudy, and the fish look happy, just wait it out. This is the bacteria catching up with the waste levels in the tank.
4. Although partial water changes are a mandatory part of good tank maintenance, do not change any water for the first month, to allow time for the beneficial bacteria to become established.
5. Remember, that any time you use antibiotics in your tank, you will kill off good bacteria with the bad. It is much safer to isolate sick fish in a hospital tank when treating with antibiotics. For that matter, think twice before adding any chemicals to your tank. Some are very useful, but be sure you know why you are using it, and what the possible side effects are.



"Well, time for our weekly brain-stem-storming session."

PVAS elections - coming in November. Your chance to help run things.

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 Reprinted from *Heart of America Aquarium Societ News*, February 1990, which had reprinted it from the "Back to Basics" column in *The Daphnian*, the bulletin of The Boston Aquarium Society, May 1990.

## A Love Affair with Apistogramma<sup>1</sup>

John Stankevitch  
Norwalk Aquarium Society

It's probably impossible to pinpoint the beginning of my interest in the genus of cichlids known as Apistogramma, but I do recall the occasional tank of mixed dwarfs in the shops filled with ragged, nondescript fish. Once the relationship between these bedraggled specimens and the unreal beauty of the pictures of the various species in the books struck home, I raced from shop to shop asking for a variety of species by name only to hear in response, "Huh?" or "We never get those" or "They might be in with those mixed dwarfs."

Being new to the hobby, I tried what appeared to be the only recourse. Many "mixed dwarfs" came home, some even growing to display a little blue or yellow or red and many growing to be *Aequidens curviceps* or *Nannacara anomala*. It seems that my attention to tank mates, water condition and maintenance left a lot to be desired in those days.

When I found myself brooding over color pictures of "Apistos," going out was in love. How else could you describe a full grown man lying on his belly for thirty minutes or more just to get a glimpse of these lovelies in a tank only inches from the floor, then observing them until his back and neck were stiff?

Apistogramma is one genus of a loosely defined group of cichlids referred to as dwarf (generally accepted as four inches or less standard length). The genus is neotropical with the females significantly smaller (one-half to two-thirds the size of the male). The most easily recognizable morphological characteristics of the genus are three anal spines and 14-16 dorsal spines. Further, the anal has four to seven and the dorsal four to ten soft rays. The lateral scale count ranges from seventeen to twenty seven. It's worth noting the present importance of the three anal spines since the "T-bar apisto" with its eight anal spines owns a separate genus, *Apistogrammoides*.

The genus Apistogramma consists of well over twenty-five species. The Apistogramma Study Group (ASG) lists thirty-six species including synonyms. Distribution is widespread including the countries of Bolivia, Brazil, Columbia, Guyana, Paraguay and northern Argentina. This territory is immense, covering the entire drainage of the Amazon River and much more.

Typically, Apistogramma inhabit black water and clear water streams and creeks, occupying the substrate at the shallow edges sheltered by overhanging grasses and roots and partially shaded by the overhanging trees. The water of the stream is usually running, sometimes quite fast though the water at the edges will be slowed due to location and protective vegetation. These factors support the need for good oxygen content and minimal biological waste buildup in the aquarium.

Although some species can be maintained under a wider range of conditions, the typical Apistogramma biotype consists of temperature between 74 degrees and 78 degrees F.,

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<sup>1</sup> Reprinted from "The Wet Pet Gazette", of the Norwalk A. S. of Fairfield County, Inc. 1986.



hardness between 0.5 and 2 degrees German and a Ph of 6.2 to 6.8. I've maintained several species quite well at up to 82 degrees F. and 10-12 degrees German hardness. *A. agassizi* has spawned and raised fry under the latter conditions. One may find it necessary to reproduce the more exacting requirements for breeding some species, but those conditions are not required for maintaining many species. They are given as an example of those actually measured in a real biotype and, as such, may be considered ideal.

Typically cichlid, "Apistos" are aggressively territorial toward same-sex conspecifics. The social behavior can be described as polygamous, in which conspecific females (two to several) set up territories and a dominant male protects a super territory surrounding the group of females, spawning with all females in his territory. I have yet to rear more than one male of a given species much beyond sexual maturity, including a group reared in a thirty gallon aquarium! If attempted, I'd recommend plenty of hiding places and separation of males as they mature.

A male *Apistogramma* will spawn with all the females in his territory as they ripen. Females, as they roe up, become more territorial, and take on more yellow color. Spawning tends to be secretive, usually on the inside roof or inside vertical wall of a cave. Once guarding spawn or fry, the female remains a vivid yellow and her markings are more clearly defined. She'll assume a head-down aggressive posture toward all other animals and is capable of killing the much larger male if he cannot vacate her territory.

The following species are ones that I've kept with varying success excluding my unidentified earlier failures. The ASG number refers to the descriptive listing by the *Apistogramma* Study Group in their 1980/1981 papers.

*A. agassizi* (Steindachner, 1875), ASG-1, is one of the most available, and for some time was "the" dwarf cichlid. Both orange-red and violet fin color strains have been noted. The caudal fin is lanceolate with a tapered color pattern that precludes misidentification. Young fish may be sexed at four months of age and reach sexual maturity at about eight months. Found in the lateral tributaries of the Amazon River in Brazil, males reach three inches standard length and females attain two inches SL.

Always start with the most successful experience. The trio for which I bid an obscene amount have been kept quite well for about a year as of this writing.

Set up originally in a ten gallon tank with a coconut shell on the right and a flower pot on the left, the male alternated between ends, or hovered behind the sponge filter in the center. The two females selected opposite ends and set up territories.

Both females spawned in their respective territories several times. The female on the right spawned on the inside roof of the coconut shell and raised fry right from the first. The female on the left spawned on the rear outside vertical wall of the flower pot (the only site impossible for me to see). This female failed to raise fry about four times. On the fifth attempt, she became a good mother.



The social and breeding habits of this trio were almost textbook perfect, except for one female spawning outside her cave. However the area was within the confines of the rear corner of the tank and the back wall of the clay pot so her behavior may not be atypical at all.

The fry have been distributed to several aquarists in Connecticut and Rhode Island and subsequent spawns are already spoken for, attesting the rising popularity of these fish.

The fry took micro worms and newly hatched brine shrimp immediately. Weaning to ground flake and grated beef heart came at two to three weeks and the fry were 3/4" SL in about eight weeks. Fry left with mother fared better than those siphoned out at free-swimming stage. Fry were seen "bouncing" off mother, and mother would stir up and/or chew up bottom detritus for fry.

*Apistogramma cacatuoides* (Hoedeman, 1951), ASG-19, is among the larger *Apistogrammas* with males attaining three inches SL and females two inches SL. The fish has been collected in Guyana and Mato Grosso areas.

With relatively deep body and lyrate caudal fin, the "big-mouth" *Apistogramma* is one of the most beautiful. The third through sixth dorsal rays extend upward forming a brilliant yellow or red Cocks-comb."

Some strains show one or more ocelli on the caudal frequently with the "cocks-comb" color bordered by dark brown or black. This fish is a true show stopper!

Many books have pictures of *A. cacatuoides* mislabeled as *A. borelli*. This fish has at least three color strains: light blue finned, gray body; red "comb"; yellow "comb." In my opinion, the fish is most beautiful when the soft ray areas of the ventrals, anal, "comb" and ocelli match in color.

Several specimens were kept quite well in a twenty gallon tank. The only spawn occurred shortly after acquisition and was lost due to unpreparedness.

One fish developed well enough to win Best of Show but several males wouldn't tolerate each other and eventually the group was lost.

*Apistogramma steindachneri* (Regan, 1908), ASG-10, is probably the largest *Apistogramma* with males approaching four inches SL and the females to two and three quarter inches SL. Collected in Guyana and Surinam, the most striking feature, I find is the beautiful lace patterned, fan-shaped area centrally located in the lyrate caudal fin. The fish is brown to rust colored with red to yellow highlights in the edges of the dorsal and ventral fins.

One pair was kept successfully for over a year in a fifteen gallon tank and spawned several times. No fry were raised either naturally or artificially. Besides the possibility of sterility, I've attributed failure to water hardness or, more probably, my poor water management. The male did grow to about three and one half inches SL later in a thirty gallon tank so conditions must have been OK for maintenance.

*Apistogramma borelli* (Regan, 1906), (formerly known as *Apistogramma reitzigi*, AHL, 1939), ASG-17, is a lovely mostly blue bodied fish attaining a length of two and one half inches SL for males and one and three quarters SL for females. The blue body is complemented by a yellow opercular area.

The caudal is round, and the dorsal displays a pronounced trailer extension of the last soft rays. The fish is collected in the central Rio Parana range.

The half dozen specimens I've kept did well until the males matured in a fifteen gallon tank, well planted with plenty of cover. Once the population thinned down to three fish, the tank soured. I believe the flow became reduced through the undergravel filter and the poisons produced by anaerobic bacteria killed the remaining fish. Again, I've paid the price for not observing conditions carefully.

*Apistogramma bitaeniata* (Formerly known as *Apistogramma kleei*, Meinken 1964), ASG-2, is to me neck and neck with *Apistogramma cacatuoides* for the most beautiful of *Apistogrammas*. Males attain close to four inches SL and females two and one half inches SL. It is believed to originate in the central Amazon River area.

The dorsal sports a "cocks-comb" and is usually tri-colored with the "comb" and base of fin the same color and the central stripe of a complementary color. The ventral, anal and caudal fins are fully colored unlike most *Apistogrammas* which only have streaks or highlights. The form with red predominating is the one I find most pleasing.

Of the five species I've described, I've not been able to obtain this one. It took two years to be offered the *Apistogramma agassizi* so patience must be required. Perhaps this article will lead me to more species.

*Apistogramma* are among the most beautiful and interesting of freshwater aquarium fishes. Since they require so little space and only a little extra care, I wonder why they are not kept by more aquarists. Their popularity seems to be on the rise in the Northeast. Perhaps we'll soon see many of the species in stores instead of pictures.

P.S. An *Apistogramma* Study Group has been formed. The coordinator is Donald Frisque, 1845 Jaynes Road, Mosinee WI 54455

#### REFERENCES:

- Dwarf Cichlids, Jorg Vierke, 1979, TFH Publications Inc.
- Aquarium Digest International, Tetra Werke,
- Cichlids of the World, Dr. Robert J. Goldstein, 1973, TFH Publications Inc.
- The Aquarium Encyclopedia, Gunther Sterba, 1983, MIT Press.
- Buntbarsche Bulletin, American Cichlid Association #103, 1984.
- Cichlid Index 7(1):1
- Apistogramma* Study Group Bulletin, 1980, 1981.

**POTOMAC VALLEY AQUARIUM SOCIETY**  
PO BOX 664, Merrifield, VA 22116

Application for Membership

Date: \_\_\_\_\_

Name: \_\_\_\_\_

Street: \_\_\_\_\_ Apt. \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Telephone: \_\_\_\_\_

Optional information:

Occupation: \_\_\_\_\_

Where did you here about PVAS/get this application? \_\_\_\_\_  
\_\_\_\_\_

Number of aquariums: \_\_\_\_\_ Time in the hobby: \_\_\_\_\_

Special interests: (e.g., catfish, cichlids, etc.) \_\_\_\_\_  
\_\_\_\_\_

Reason for joining: \_\_\_\_\_  
\_\_\_\_\_

Membership dues for PVAS are:

Individual/Family: \$12/yr

Corresponding: \$ 9/yr

Junior (under 18) \$ 5/yr

Please send application and check to the address above.



## SUPPORTING VIRGINIA SHOPS

### **ANNANDALE PET SHOP**

7406 Little River Trnpl  
Annandale VA 22031  
256-2400

### **AQUATIC ENHANCEMENTS, INC**

PO Box 22677  
Alexandria, VA 22304  
765-4620

### **DISCOUNT PET CENTER**

9028 Mathis Ave  
Manassas, VA 22110  
361-7769

### **BAILEY'S PET CENTER**

35217 S. Jefferson St.  
Falls Church, VA 22041  
931-1400

### **BEACON MALL PET CENTER**

6776 Richmond Hgwy.  
Alexandria, VA 22306  
660-6100

### **NATIONAL PET & AQUARIUM**

6168 Arlington Blvd.  
Falls Church, VA 22046  
533-7828

### **NEESE'S PISCES**

3304 Mt. Vernon Ave.  
Alexandria, VA 22305  
548-0557

### **OAKTON PET SHOP**

Rt 123 & Hunter Mill Rd.  
Oakton, VA 22124  
281-9622

### **PET MART-TYSONS**

8417 Old Courthouse Rd.  
Vienna, VA 22180  
281-8181

### **PETS ETC- ALEXANDRIA**

7688-B Richmond Hgwy  
Alexandria, VA 22306  
768-2200

### **PETS ETC- CHANTILLY**

13932 Lee-Jackson Hgwy  
Chantilly, VA 22021  
378-2777

### **PETS ETC- HERNDON**

462 Eiden St.  
Herndon, VA 22171  
437-0381

### **PETS ETC- STERLING**

243-C Harry Flood Byrd Hgwy  
Sterling, VA 22170  
430-9667

### **PETS-N-THINGS**

3081 Nutley St.  
Fairfax, VA 22031  
573-4400

### **SUNSHINE PETS**

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

### **TANKS-A-LOT**

6635 Backlick Rd.  
Springfield, VA 22150  
866-1057

## SUPPORTING MARYLAND SHOPS

### ANIMAL EXCHANGE

765-A Rockville Pike  
Rockville, MD 20852  
424-PETS

### AQUARIUM CENTER

Liberty Rd. at Offut Rd.  
Randlesstown, MD  
521-4529

### BROTHER'S PETS INC

13810 Georgia Ave.  
Aspen Hill, MD 20906  
460-4600

### CONGRESSIONAL AQUARIUM

162 Congressional Ln  
Rockville, MD 20852  
881-6182

### FISH FACTORY AQUARIUM

582 N. Frederick Ave  
Gaithersburg, MD 20877  
881-6182

### GLENMONT TROPICALS

12345 Georgia Ave  
Wheaton, MD 20902  
949-0344

### HAPPY PETS

617 Hungerford Dr.  
Rockville, MD 20850  
762-6878

### HOUSE OF TROPICALS

7389F Baltimore-Annapolis Blvd.  
Glen Burnie, MD 21061  
761-1113

### MARINE CARE SPECIALISTS

15820 Redland Rd.  
Rockville, MD 20855  
330-0720

### MARYLAND TROPICALS

11229A New Hampshire Ave  
Silver Spring, MD 20904  
593-1116

### MONTGOMERY TROPICALS

7845-G Airpark Rd  
Gaithersburg, MD 20879  
670-0886

### PETDATE- WHITE FLINT

5268 Nicholson Ln.  
Kensington, MD 20895  
231-5216

### RICK'S FISH & PET SUPPLY

1003J West Patrick St.  
Frederick, MD 21702  
694-9664 831-6866

### SHOWCASE AQUARIUM

11248-11250 Triangle Ln  
Wheaton, MD 20902  
942-6464

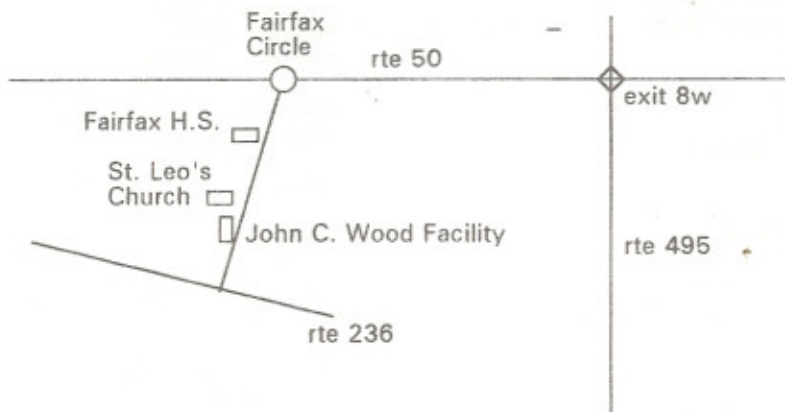
### TROPICAL FISH WORLD INC

16529 S. Frederick Center  
Gaithersburg, MD 20877  
921-0000

### TROPICAL LAGOON

9439 Georgia Ave.  
Silver Spring, MD 20910  
585-6562

Potomac Valley Aquarium Society  
PO Box 664  
Merrifield, VA 22116



Meetings are held at the John C. Wood Facility, 3730 Old Lee Hgwy. (rte 237), Fairfax City, VA. Room 7 (in the rear of the building) Doors open at 7:30, meetings start at 8:00. Everyone is welcome.