

# DOTOMAC VALLEY AQLIARUMM SOCIETY <br> POST OFFICE SOX 6218 SHIALINGTON STATION ARLINCTON. VIRCJNIA 22306 

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Vice President: Bob Pallansch Treasurer: Gerry Hoffman
Corresponding Sec.: Pete Thrift
Recording Sec.: Pat Gore

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Kenny Warren, Alex Cummins, John Jessup, Ray Hughes ex-officlo: Gerry Hoffman

1986 COMMITTEE HEADS

Auctions:
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HAP: Alex Cummins
Library: Pete Thrift Membership: Pat Gore Spring Show: Bob Pallansch

Fall Workshop: Gerry Hoffman
Bowl Shows: David Sun
Programs:
Ways \& Means: Pece Thrift
FAAS: Gerry Hoffman
Delta Tale: John Mangan

This marks my last column as president of PVAS. I want to thank all those members whose hard work has made my job so much easier Bob Palansch, Jerry Hoffman, John Jessup, John Mangan, Pete Thrift, Ray Hughs, Kenny Warren, Pat Core, Alex Cummings and David Sun. There are many more out there whose efforts made the Spring and fall shows the successes that they were and I thank you all.

All of you who attended the fall Workshop profited from the hard work that Jerry Hoffman put into this endeavor. The speakers were all entertaining and enlightening. I just wish there had been more time for some of the speakers who easily could have gone over the allotted hour. For those of you who missed the workshop you really missed an outstanding experience. Be sure to mark your calendars next year, as I'm sure this will become an annual event.

I want to thank Gene Aldrich for the November program on cichlids. I apoligize for my botched up pronunciation of the Latin and Greek technical names. To varying degrees I've studied Russian, German, French, Swedish, and Gaelic, but none of these help to muddle through scientific nomenclature. Perhaps one of these days we'll wise up and come up with some standard English names for all the fishy fauna.

The December meeting is our annual Christmas Party. There will be no bowl show, no raffle, no mini auction. There will be a door prize and we ask everyone who comes to bring a fish related present (non living, non perishable, dry), wrapped, which is valued at under $\$ 3.00$ to place under the PVAS Christmas tree. Pete will have a number of presents for sale for $\$ 3.00$ each for those of you who forget. Also if each family group coming to the party will bring a side dish to go with the turkey and ham the club will provide well have an excellent evening. I'll be calling all the members to remind them and asking who is bringing what sort of dish sometime after Thanksgiving.

See you all in December. Good luck to Gene and the new board for the coming year!!!

## Bot

DECEMBER HAPPENINGS....
Program: CHRISTMAS PARTY!!!!!
Bowl Show: Turkeys, hams, salads, deserts, veggies, goodieds.
Raffle: Door Prize
Mini Auction: None

## GRUM THE EDITORZ DESK

Well, it looks like we made it through another year (almost at least). On behalf of all of PVAS I would like to thank all of 1986's officers, committee heads, and workers. We couldn't have done it without you.

Gene Aldridge, 1987's president, will be looking for people to fill various positions for next year. If you are interested in doing anything contact Gene and let him know you are willing to help out. Something can be found for anyone who's willing to work.

One of the positions that needs to be filled is that of Delta Tale editor. I have been churning out the Delta Tale month after month for the last three years without a break and now I'm ready for one. The job requires no advance knowledge of printing or editing. I took the job knowing absolutley nothing and Pat and Maggie Mahoney were able to teach me everything I needed to know in about an hours time. I should be able to do the same for whoever replaces me. Anyone interested in the job should contact me an/or Gene Aldridge.

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oops! - youre even allowed to make stupid mistakes.
This isn't a farewell editorial. I will stay on the job until a replacement is found. I would like to leave as soon as possible though. As I said above, I need a break, plus I have several other projects I would like to be able to work on.

On a lighter note- this month is the annual PVAS christmas party/dinner. It will be held at our normal meeting place (john C. Wood). PVAS will provide a turkey and ham. Everyone is requested to bring some type of side dish or desert. Everyone should also bring a small, fish related, wrapped, gift. This will be placed under the PVAS christmas bush and at the end of the evening everyone will receive a gift. The awards for various things will also be given out.

See you all at the christmas party.

p.s. does anyone have a sledge hammer I can borrow? I'm trying to widen my chimney so Santa can get a 100 gallon tank down it.

## A Rewarding Experience ?

By Kurt Zadnik, PCCA

Every one of us has that one fish that once seen must be sought out and obtained as quickly as possible at any price. For me this fish was (and is) Crenicara filamentosa, the Checkerboard Cichlid. From the moment I first saw its photograph in Aquarium Digest International \#14 (page 40), I knew I had to have it. Little did I know that this spur-of-the-moment decision was to lead me into a three-year loverhate relationship with this beautiful dwarf.
C. filamentosa is usually hard to obtain because nearly all those found in aquarium shops are imported fish. In their native habitat in the Orinoco River Basin of Venezuela and Colombia, they are easily caught only during the dry season when the tributaries of the orinoco are at low levels. Since this usually occurs during our fall and winter, the fish start showing up anywhere between October and January. This is one of the reasons that the Checkerboard is also called the Christmas Cichlid. They are also sometimes imported with cardinal tetras and at times can be found at odd times of the year.

Luckily, I originally caught Checkerboard fever just after Christmas (a great time to blow that Christmas money on our favorite things!). My first call to a local aquarium netted six juvenile fish. These fish were picked up immediately and placed in a ten gallon aquarium with a few sandstone rocks and various plastic plants. The temperature was kept at $26^{\circ} \mathrm{C}\left(78-80^{\circ} \mathrm{F}\right)$, and no attention was given to PH or DH . They were carefully watched and fed various flake foods and either live brine shrimp or black worms twice a day. After a few months two grew larger and started showing small "buds" on the top and bottom of their caudal fins. These grew quickly into $11 / 2$-2 inch extensions over the next few months, leaving me with two 4 inch TL males with absolutely beautiful finnage. Unfortunately, during that time I also lost one of the smaller fish so that I was left with three females. I did not know at the time how lucky I was to end up with such a good ratio. Generally, males greatly outnumber females per spawn. At about the time the males were acquiring their adult finnage, they also started becoming much more territorial and I soon had to remove the submissive male before he was killed.

For those who haven't had the pleasure of seeing this fish, adult males can only b described as gorgeous. The basic body shape is elongate with an off-white background color and two bands of alternating square black spots along the flanks. When sexually active, the checkerboard pattern is lost and the male has a solid black stripe from the nose, through the eye to the tail lined by two thin blue stripes. There is a row of blue spots under the eye subtended by a row of red. Basic coloration of the ventral and unpaired fins is blue with red highlights. All unpaired fins are edged in bright red and blue. The caudal fin also has up to eight vertical rows of small red spots and long top and bottom extensions which can nearly equal the body length of the fish. In particularly good forms, the ventral fins can have extensions that are similiar in length to those of the tail. The female, though not as colorful as the male, has a much better checkerboard pattern on its sides and orange ventrals when sexually mature. When brooding, the ventrals turn a blood-red color that is striking in its intensity and the checkerboard pattern is replaced by a solid black stripe through the eye to the tail. All other fins are without color, and the tail is rounded. One curious aspect of $C$. filamentosa that I have not seen mentioned in literature is the "trapdoor" aspect of the mouth. The fish has a blunt nose, and the mouth is low on the face. The fact that the mouth is so low adds to the curious manner in which the bottom jaw
hinges downward until it is almost perpendicular to the body. This downward hinging always reminded me of some of the talking animation on "Monty Python's Flying Circus". Although reported to be a predator of crustaceans and small insects in the wild, my fish at times had trouble catching dead "live" brine shrimp!

As soon as the commotion died down with the removal of the submissive male, the three females started jousting for their own little territories. As you may already have guessed, the smallest female had to be recoved soon afterwards. Once everything was quiet, the Checkerboards got down to business, and I soon witnessed the first spawning (another lucky break). The pair had chosen the flat leaf surface of one of the plastic plants in the upper strata of the tank which the female busily cleaned. Once clean and with much ceremony, the female would lay a few eggs in a line with a shaking motion, the the male would follow and fertilize them soon afterwards. The spawning actually took about 15 minutes, but watching them made it seem to go on forever. Once an oblong plaque of about 60 transparent eggs was laid. the female turned on the male and chased him to the nether reaches of the tank. At this time she also acquired her brood coloration of blood-red ventral fins and black stripe.

After 8 months of good luck, I lost it all in one day. Within 24 hours all of the eggs and become opaque. (If all had gone well, the eggs would normally have hatched in $2-21 / 2$ days and been free-swimming in another four.) During sucessive spawnings, which occurred regularly every two weeks with the male switching females for each subsequent spawn, the eggs were either never fertilized or simply did not develop.

At this time 1 joined the PCCA, and suddenly the informaton available to me was quadrupled. By talking to fellow members, I was to discover that Checkerboards like very soft water and somewhat acid conditions. Holding my new-found knowledge like a baby I quickly rushed home and started monitoring water conditions, acidifying and adding distilled water frantically. Unfortunately, by now my trio had started tapering off and were only spawning every two months. Experimentation was cut short when I lost the male (the other male had died of lonliness long ago). By this time (it had been two years), I was also at my wit's end and was really starting to dislike my beautiful little fish. Finally I remembered what my father had once told me, "No Zadnik is ever a quitter!" I started looking for more Checkerboards the very next day.

My luck returned about 8 months later when 1 heard from a fellow member that Checkerboards were available at a store in Mountainview for the unbelievable price of $99 \notin$ each! Needless to say, I made the 60 mile trip to get mine the next day. I ended up buying all they had: 8 juvenile fish. These were set up in a similar fashion to the first batch but with very soft water and a PH around 6.5. This time the ratio of males to females was more true, and I ended up with 7 males and one female. The female proceeded to spawn, at which time I caught the ritual on film. The next morning I fearfully turned on the lights in the tank expecting to see white eggs. You can imagine my elation when I discovered a number of clear eggs with a few opaque ones thrown in. I spent the next two days keeping watch and chewing my fingernails down to stubs. Sure enough, by the end of the third day all of the eggs were gone and I was absolutely crushed. I was again to lose my luck when I needed it the most. Subsequent spawns were just as unsucessful. Even artificial incubation didn't work. Within a few months I lost my only female. By this time I was beginning to think I had masochistic tendencies.

As I relive these experiences through writing this article, I realize now much I learned about keeping cichlids during this three year period. Although disappointed by not succeeding, much can be learned "the hard day." All in all it was a very

Crenicara filamentosa, cont.
rewarding experience. Maybe I'll have better luck in the future; after all, Christmas is only a few weeks away, and I have a couple of open tanks ......

## REFERENCES

Vieree, J (1979) Dwarf Cichlids, TFH Publications, Inc., Neptune, New Jersey.
Goldstein, RJ (1973) Cichlids of the World, TFH Publications, Inc., Neptune, NewJersey. Winkelman, H (1976) Crenicara filamentosa - a rarity. Aquarium Digest International 14:40
(reprinted from Cichlidae Communique, Pacific Coast Cichlid Association)


## breeder's award program STATUS

Grand Master Breeder
John Jessup ..... 580
Master Breeder
Garland Neese ..... 1,115
Gerry Hoffman ..... 895
Pat \& Maggi Mahoney ..... 785
Darrell Holman ..... 640
Woody Griffin ..... 610
Advanced Breeder
Ruth Brewer ..... 305
Intermediate Breeder
Roser Family ..... 260
Alex Cummin ..... 205
Breeder
Frank Angilletta ..... 140
Nathan Mainwaring ..... 100
Kenny Warren ..... 90
Gene Aldridge ..... 80
Amy Stirman ..... 50
Members Working For BAP Status
Sharon Steele ..... 30
John Mangan ..... 30
Howard Kresin ..... 15
Pat Gore ..... 10
Ray Krause ..... 10
Leslie Stirman ..... 10

## New BAP Reports Received

| Alex Cummins | - Xiphophorus helleri (10) |
| ---: | :--- |
|  | - Streatocranus casuarius (15) |
|  | - Tanichthys albonubes (10) |
|  | - Pelvicachromis pulcher (10) |
|  | - Pterophyllum scalare (15) |
|  | - Epiplatys dagetti (10) |
|  | - Xenotoca eiseni (10) |
| Bob \& Brian Roser | - Poecilia (Mollienesia) velifera |

## BAP BOARD MEMBERS

John Jessup (Chair) (Arlington) 534-1704
Gerry Hoffman (Warrenton) 347-7486
Garland Neese (Alexandria) 548-0557
Gene Aldridge (Arlington) 998-8757
John Mangan (Vienna) 938-4778
Bob Roser (ex-officio) (Stafford) 659-1879

## CHECKERS

Arlington County:
Fairfax-Vienna:
Alexandria:
Clifton-Centerville:
Dale City-Stafford:
Warrenton:
Prince Georges County:
Montgomery County:

Pat Gore - 522-3884
Jim Long - 280-1753
Jerry or Amy Stirman - 941-6729
Kenny Warren - 378-8838
Bob Roser - 659-1879
Gerry Hoffman - 347-7486
Alex Cummins - 656-6355
Ray Hughes - 424-3531
N.B. If you cannot reach your nearest checker, please call you nearest BAP Committee Member or John Jessup at 534-1704. An arrangement will be made to get someone to check your fish.

# SPAWNING SYNODONTIS MULTIPUNCTATUS 

by Denis and Kathy Kieswetterf<br>Kitchener Waterloo Aquarium Society

From what we have read or heard, spawning Synodontis multipunctatus in captivity has been a very hit and miss situation. Mostly miss. Synodontis are suppose be egg scatterers. But in any of the recorded spawnings of Synodontis species, the fry have been found in mouths of mouthbrooding African cichlids. Therefore it is speculated that the Synodontis will spawn when a pair of mouthbrooding cichlids is spawning. While the pair of cichlids is spawning in their normal head to tail fashion, the pair of Synodontis will scoot between them, picking up the cichlid eggs and eating them. They then deposit their eggs to be picked up by the female cichlid. The female will then incubate them for the Synodontis.

We presently have 7 adult Synodontis multipunctatus. They are all about years old. One we bought from a fellow in Galt, Ontario and the other 6 were imported from Germany. The sexing of the Synodontis is rather questionable, but we feel that they are like other catfish, with the female of the species being shaped rather like a football and the male being a little slimmer. Since we had some empty tank space about a year ago we set up 30 gallon tank to try to induce them to spawn. We put all 7 Synodontis into this tank. The tank had an undergravel filter with a layer of gravel about 2 inches on top. We heated the water to $78-80$ degrees $F$, kept the tank dark and had the outside of the tank covered so they wouldn't be spooked when there was any activity in the fish room. We also added rocks, slate and flower pots to provide caves for them. We left the tank alone, not doing any water changes. We kept their diet the same, which consisted of frozen brine shrimp, trout chow and rabbit pellets. We had also heard that in the wild Synodontis liked to eat snails, so we threw in gold mystery snails, which by the way, they didn't touch. So to try to persuade them to eat snails, Dennis took a snail and crushed it with a pair of pliers. The Synodontis still didn't eat them, and they started rotting, so we had to remove them. We kept the Synodontis in this tank for approximately three months. Since in this time they hadn't spawned and $v$ needed the tank space we took them out and scattered them among our tanks. 3 of them ended up in one of our 100 gallon tanks, and it is in this tank that they spawned. I will now go on to describe the set-up etc. of this tank.
SET UP:
100 gallon tank - 2' X 2' X 4' Undergravel filter $3^{\prime \prime}$ of gravel and oyster shell mixture rocks, slate, plastic plants and plastic piping lighting continuous with fluorescent occasional outside power filter
WATER CONDITIONS:
$2 / 3$ hard, $1 / 3$ soft water epsom salt and start right ( 1 tsp . per 5 gallons) temperature 78 degrees F regular water changes of at least $30 \%$ once a week
found dead, for no apparent reason.
I will now try to describe the colouration of the $S$. multipunctatus which is rather difficult. For the first few days, they remained a pure creamy white with no spots. They then turned a smokey grey mottled colour, but still no spots. From grey they turned mottled black. By the time they were 2 weeks old, they started to get their black spots with the background becoming a greyish satinysmooth colour. By the time they were a month old they were complete replicas of the parents.

The single little Synodontis thrived. After about a month we moved it up to a five gallon tank that had some Tropheus fry in it. They all seemed to get along together. In late January when it was 2 months old we moved it up to a 30 gallon tank with a gravel bottom. This tank had Lamprologus brichardi fry in it. At this time it measured $13 / 4$ of an inch total length. Growth appears to be quite rapid. This tank we fed microworms, crushed flake and the occasional frozen plankton. We also sometimes drop in rabbit pellets or trout chow, the little guy's belly is so full he looks like a little football. He likes to spend most of his time hiding in a piece of plastic piping.

Since luck was bestowed upon us with a spawning of $S$. multipunctatus we really kept a close eye on this particular tank. we kept our routine maintenance but were careful not to disturb the tank in any way, since the African Cichlids and Synodontis seemed to be compatible for spawning.

The $M$. auratus spawned again. On December 23, 1883 there were three females ready to be stripped of their mouthfuls. The first female that was stripped yielded about 23 free swimming fry. They were set aside. The second female was stripped into a separate container. She produced about thirty-five head and tail fry. Into a third container, the third female was stripped. She unfortunately wasn't ready yet and sat out about 40 eggs. Upon observing the eggs there appeared to be some different ones mixed in with the M. auratus eggs. M. auratus eggs are golden yellow. The Synodontis eggs were a creamy white in colour and a little on the transparent side. They were approximately a $1 / 16$ of an inch long, half the size of $M$. auratus eggs.

The females were returned to the community tank. Now since we've never had any luck getting a female to pick up her eggs after being stripped, the eggs had to be artificially incubated. We incubate eggs using a hamster ball. A 5 gallon tank was set-up using aged water from the community tank. To this we added Wardley's Parasite Control. No heater was used and the tank was kept dark, to try to prevent fungusing of the eggs. The temperature was about 78 degrees $F$. The eggs were then put into the hamster ball, which is then positioned on a bracket in the tank. An airstone is anchored underneath the ball to keep it revolving slowly to try to simulate the mouthbrooding action of the mother. The hamster ball of course being round has plastic fins attached to it with silicone to catch the air from the airstone to make it turn. The hamster ball has little slits in it that serve as air vents for hamsters. Through these slits the smaller Synodontis eggs came out. This didn't cause a problem however, because after only

## FEEDING:

twice a day frozen shrimp, plankton and krill trout chow - floating and sinking spinach, spirulina flake and regular flake

## THE INHABITANTS:

1-ruby shark; 1-algae eater; 3-Tropheus duboisi white-band (1M, 2F); 8 Haplochromis compressiceps ( $1 \mathrm{M}, 7 \mathrm{~F}$ ); 6 - Pseudotropheus williamsi ( 3 M , $3 \mathrm{~F}) ; 14$ - Melanochromis auratus ( $2 \mathrm{M}, 12 \mathrm{~F}$ ); 3 - Synodontis multipunctatus (presumably $1 \mathrm{M}, 3 \mathrm{~F}$ )
This tank had been set up like this since the beginning of October 1983. The inhabitants remained the same. We had one spawn of $H$. compressiceps. The $P$. williamsi spawned twice but the females spat the eggs after a few days. The $T$. duboisi had one spawn, but the female also spat. Since the tank had been set up the $M$. auratus have been the only fish that have spawned with any regularity. We have had as many as 6 mouthfuls of $M$. auratus at one time. (Trying to figure out which female spawned first is somewhat of a miracle.)

It has been our practice with African cichlids to leave the female that is incubating the eggs in the community tank until the loth or 11th day, upon which she is removed from the tank and stripped of her fry. Then she is immediately returned to the community tank. We haven't had too much trouble with this method.

On November 10, 1983 there was a $M$. auratus that needed to be stripped. She yielded about 25 fry that were at the head and tail stage of development. Upon examining the spawn, Dennis noticed that there were 2 little fish that weren't $M$. auratus. Since we had been hoping against hope that some day we would be lucky enough to spawn Synodontis he knew right away what they were. We were excited to say the least.

As I said earlier the $M$. auratus fry were at the head and tail stage of development. The 2 little $S$. multipunctatus fry however were a little further along with just a little bit of egg sac left. The Synodontis were a pure creamy white in colour, no spots showing yet, and about the same size as the M. auratus. We could already see their little spiny barbels at the sides of the mouths. Since they were approximately the same size as the $M$. auratus fry we decided to keep them in the same container. An airstone was added and also a little of Wardley's Parasite Control. Our fish room is heated by the furnace, so we didn't add a heater.

The next morning however, the $M$ auratus seemed to be decreasing in number. One Synodontis even had an $M$. auratus by the head and was proceeding to eat it. Therefore we removed the 2 Synodontis cats and put them in a one gallon tank by themselves. For the first couple of days we just had an airstone in the tank. The water started turning cloudy so we put a sponge filter in the tank. They were fed microworms, crushed flake food and the occasional trout chow or rabbit pellet. Feeding them 3 times a day they thrived on this diet and grew rapidly. We did partial water changes ( $30 \%$ ) once a week or so, depending upon how polluted the water became. After about two weeks one little Synodontis was
one day of artificial incubating, the Synodontis eggs were already developed to the head and tail stage, which rather surprised us. The M. auratus eggs weren't developed at all. Since we weren't sure when this particular female spawned, we don't know just exactly how old the eggs were, therefore we can't say what incubation period for Synodontis eggs would be from time of spawning to the time of hatching.

When all of the eggs were hatched a few days later and then taken out of the hamster ball, we counted 10 S . multipunctatus. Remember these were all found in the same mouthful of $M$. auratus, which also included 30 M . auratus eggs. Since there were quite a number of Synodontis, they were put in a 5 gallon tank by themselves, so they could be closely monitored. They were fed three times a day on a variety of microworms, flake food, trout chow, rabbit pellets and the occasional frozen shrimp. After a week or so some newly hatched Tropheus fry were added (for lack of space) and they seemed to get along.

Since I described earlier the colouration of $S$. multipunctatus fry, it is suffice to say they followed the same pattern as the first spawn we had.

On January 23, 1984 since they were a month old and still numbered 10 we decided to observe them rather closely. There was quite a difference in sizes. There were 5 Synodontis that were approximately $1 / 2$ inches long. The other 5 were approximately $3 / 4$ to 1 inch long. Perhaps this difference is the difference in sexes, with one sex growing at a faster pace than the other, we can only guess.

About the middle of January, upon observing the tank that had the breeding Synodontis in it, I noticed a pair of M. auratus in the process of spawning. 2 Synodontis kept interfering, but when they did this, the M. auratus male would fiercely chase them away. I watched them for quite a while, but never saw any Synodontis eggs deposited. After watching them for a while I thought to myself that it is a small wonder that we have any $S$. multipunctatus fry at all.

As I mentioned earlier, the spawning of S. multipunctatus has been a hit and miss occurence. First we had a spawn of two, then a spawn of 10. On January 31st, 1984, there were another 3 M . auratus to be stripped. 2 females yielded only M. auratus fry, the 3rd one had 18 M . auratus and two Synodontis fry. This female was in her 10th day of incubation. The M. auratus fry were head and tails. The Synodontis fry were more advanced in hatching than the M. auratus fry. One was about $3 / 8$ of an inch long and the other $5 / 16$ of an inch. They had very little egg sacs left. We already had seen evidence that once the Synodontis fry reach this size they look for food and therefore start eating the egg sacs of the M. auratus. This would account for the small number of $M$. auratus in the mouthful.

Also at this time a $H$. compressiceps was stripped, she had about thirty fry, no Synodontis were present. The day after these fish were stripped of their mouthfuls, another two M. auratus females spawned. So in 10 days we may have some more $S$. multipunctatus.

In future, we will very closely monitor this tank, keeping records of any Synodontis spawnings. By doing this we may discover a pattern to their spawning (whether they are seasonal or not).

In closing, I would like to say that we are planning to grow these first 3 spawns to adults (people have already been asking to buy them) and then perhaps try to spawn them as the egg scatters that they are suppose to be. Perhaps tank raised S. multipunctatus will be more easily spawned in the home aquarium.

## CICHLID POWER!

Reprinted from Fins 'n Tales, KWAS Monthly Bulletin, March 1984.
(From the ATF FORUM / FISHNET Computer Bulletin Board Service)


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BOWL SHOW REPORI FOR
Expanded Judge- Kenny Warren Show
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## CICELIDS

Angelfish/Discus
Lst J. Bennet
2nd J. Kooken
3rd D. Sun

New world (all other)

1at
2nd
3rd
Mbuna
1st J. Bennet
2nd J. Bennet
3rd

Haplocromis
1st
2nd
3rd

Reftiake (Non Mowthbrooder)
1at D. Sun
2nd D. Sun
3rd D. Sun
Open
Ist D. Sun
2nd D. Mann
3rd

EGGLAYERS/LIVEBEARERS

Livebearers
$18 t \mathrm{~J}$. Bennet
2nd D. Mann
3rd

Characins
1at J. Bennet
2nd D. Sun
3xd D. Mann
Catfish
1st J. Stieringer
2nd J. Bennet
3rd

Sharks \& Loaches
1st D. Sun
2nd
3rd

Anabantoids
1\&t J. Kooken
2nd J. Bennet
3rd J. Steiringer
Open
lat J. Steiringer
2nd J. Carter
3rd B. Pallansch

Fish of the Month- Blue Gularis
Fish of the Year - Blue Gularis $]$ - John Stieringer


Egglayer/Livebearer

| J. Bennet | 21 | 43 | 143 |
| :--- | ---: | ---: | ---: |
| J. Stieringer | 15 | 24 | 57 |
| B. Pallansch | 2 | 2 | 50 |
| D. Mann | 6 | 6 | 47 |
| J. Lamberth | 0 | 0 | 42 |
| D. Sun | 9 | 13 | 24 |
| C. Edler | 0 | 0 | 21 |
| J. Mangan | 0 | 0 | 17 |
| J. Kooken | 7 | 7 | 9 |
| J. Long | 0 | 0 | 6 |
| J. Carter | 4 | 4 | 5 |
| S. Ptasek | 0 | 0 | 5 |
| R. Hughes | 0 | 0 | 5 |
| B. Roser | 0 | 0 | 2 |
|  |  |  | 2 |

IT'S BEEN FUN FOLKS
David Sun
*****
Here they are! The long awaited answers to George White's puzzle that appeared in the Oct. and Nov. issues of Delta Tale.

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Answers to Piscatorial Puzzle
ACROSS: l. carp; 2. farlowellai 3. nitrite; 4. AKA; 5. neon;
b. treei 7. aei B. redi q. cichlidi lO. tufa; ll. goodiedi
12. scati 13. sole; 14. periwinklei 15. oscari lb. gari
17. rebagi la. pteroi 19. epha; 20. dauphin; 2l. asta.
DOUN: 1. fin; 2. star; 3. reef; 4. carotene; 5. eel; b. paw;
7. tank; B. silti 9. rifti l0. glassi ll. copepodi le. frog;
13. alei 14. ACAi 15. darteri lb. DCG; 17. mirei l8. wharfi
19. deadi 20. PGA; 2l. net; 2己. PH.; 2ヨ. tadpole; 24. open.
```


# DOTOMAC VALLEY AOUARUMM SOCIETY <br>  <br> POST OFFICE BOX 6219 SHIRLINGTON STATION ARLINCTON, VIRCINIA 22206 

APPLICATION FOR MEMBERSHIP

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DATE
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\[
19
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$\qquad$

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NAME
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STREET

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CITY

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TELEPHONE H

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OCCUPATION

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Where did you hear about PVAS/get this application?

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What can this club do for you?

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What do you want to do for the club ?

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Membership dues for the Potomac Valley Aquarium Society are:
Family: $\$ 12.00 \quad$ Corresponding: $\$ 7.00$
Individual: $\$ 10.00$ Junior (under 18 ) : $\$ 3.00$
Please send application and check for dues to address above.

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\section*{potomac valle aouarium society} PO BOX 6219. SHIRLINGTON STATION
ARLIMGTON, VIRGINIA 22208


The Potomac valiey quarium Society will meet on the following dates in 1986:
\(\begin{array}{lc}\text { Aug. } 11 & \text { Nov. } 10 \\ \text { Sept. } 8 & \text { Dec. } 8 \\ \text { ocr. } 20 & \text { please notice this is a change from the normal date }\end{array}\)
Meetings are held at the John C. Wood Facility, Rt. 237 (01d Lee Hgwy)
Fajrfax City, VA. Doors open at 7:30 PM, meetings start at 8:00 PM.
Everyone is welcome.```

