

DELTA TALE

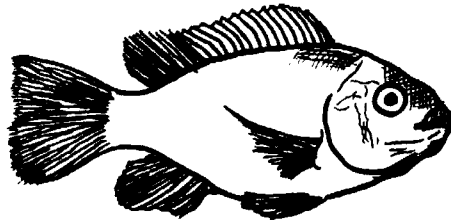
OFFICIAL PUBLICATION OF P.V.A.S.

JULY 1976

P
V
A
S

Volume 7

Issue 7



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 disseminating information, encouraging friendly competition, soliciting participation in its show, and promoting good fellowship. Correspondence should be addressed to Secretary, P.V.A.S., P.O. Box 6219, Shirlington Station, Arlington, Virginia, 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. All materials for inclusion in the DELTA TALE must reach the editor no later than the Saturday after the monthly Monday meeting.

The Potomac Valley Aquarium Society takes no responsibility for the claims or statements made by advertisers in this publication. Complaints against any advertiser herein should be forwarded in writing to the Editor, DELTA TALE.

Editor: Ruth Brewer

OFFICERS FOR 1976

President	John Jessup	Corres. Secy.	Chuck Story
Vice-President	Carl Hardy	Treasurer	Gene Aldridge
Recdg. Secy.	Susan Sprague		

BOARD OF GOVERNORS

Ted Walsh	Craig Tingen
Bob Smith	Pete Tietjen
Warren Garnar	Dave McInturff
Ruth Brewer	Jan McInturff

TABLE OF CONTENTS

Volume 7	Issue 7
	<u>Page</u>
A Note of Thanks.....	15
Bowl Show Results & Standings.....	14
BAP Report.....	16
Featured Articles	
ANOTHER TRIO OF SPAWNING REPORTS:	
I - Rusty Cichlid; II - H. Burtoni;	
III - Gold Gourami	
By David McInturff.....	3
ADD WATER - AND STIR	
By Jack & Daisy Berletchick.....	5
THE SECRETS OF SPAWNING FISH	
By Rick Johnson.....	7
FISHY QUOTATIONS	
By Ruth Brewer.....	13

(For information about the cover, see note on page 12.)

MINUTES OF THE BOARD OF GOVERNORS MEETING

The Board of Governors met June 9 at the home of Chuck and Genny Story with nine members present.

Gene Aldridge gave the financial report. We have \$859.06 in the bank with most of the show bills paid. The balance also includes the approximately \$450.00 we made on the raffle of the 125 gallon tank.

There was a general discussion concerning the running of the Spring Show. The president, John Jessup, thought everything went fairly smoothly. There had been some complaints concerning fish entries being moved. Gene Aldridge proposed that we have a telephone number available at the next show. John Jessup recommended we have a benching committee.

The main topic of the evening centered around the activity for this Fall. The Board generally decided against a fish show due to the work involved related to the overall monetary income. Several suggestions were made. One was the possibility of a Junior Show with an age limit of 12-13 and under. The idea was liked but the Board members felt there may not be enough interest at the present time.

The most widely accepted plan was for a talk given by a fairly well-known personality that might be of interest to most hobbyists plus an auction. A dinner might be included but it all depended on the cost of the food, restaurant, speaker, etc.

The meeting adjourned at 10:10.

Respectfully submitted,
Susan P. Sprague, Recdg Secy

NOTE: ACCEPTANCE OF THE MINUTES OF THE JUNE 9 MEETING WAS Tabled UNTIL THE JULY MEMBERSHIP MEETING, BUT NOT BEYOND THAT DATE.

-

BOWL SHOW JULY 12, 1976

Guppies: Green, H/B Red, AOC
Cichlids: Cent. & S.A. Large, Mbuna, Other
Other: Betta, Corydoras Catfish, Other

MEETING DATES

<u>Board of Governors</u>	<u>Cichlid Group</u>
July 6, 1976	July 21, 1976

Meeting places on both to be announced.

ANOTHER TRIO OF SPAWNING REPORTS

By: David McInturff, PVAS

I - Rusty Cichlid

The spawning tank was a 30-gallon African community tank containing a trio of rusties, a pair of Ps. socolofi, four Ps. auratus, two Ps. macrophthalmus, five Ps. johanni, three L. fryeri, and a pair of plecostomus. Assorted pieces of shale were arranged to form many small caves on the dolomite and quartzite gravel bottom. Several water sprite were planted in the gravel and a few more were left to float on the surface. The water temperature was 75° F, the pH was 7.4, and the DH was 240 ppm.

We had had the rusties for about four months, and they were approximately a year old when they spawned. The male was about 3 1/2 inches long, and the females were about 3 inches. I didn't witness the spawning. However, it was quite obvious that they had spawned. One of the females was cowering in an upper corner of the tank with a mouthful of eggs. Her tail and dorsal and anal fins were very ragged from being chewed on by the male. The female was moved to a 2 1/2-gallon tank with a dolomite bottom, a couple of rocks, an airstone, and some floating water sprite. The water conditions were the same as those in the spawning tank. Aquarisol was added to stop fungus from forming on the eggs and the open wounds on the female.

The female rusty recovered and carried her young for three weeks, at which time she spit them out and didn't take them back. After another week, the female was moved to another tank to regain her strength, and the 15 fry were transferred to a 5 1/2-gallon tank. They were fed micro-worms, Tetramin baby fish food, and Tetramin Staple.

* * * * *

II - Haplochromis burtoni

A pair of H. burtoni were placed in a 20-gallon high tank with five Ps. socolofi and nine Ps. williamsi, all of which were 1 1/2 inches long. The male burtoni was 2 1/2 inches long, and the female was 2 inches. The bottom of the tank contained dolomite and quartzite gravel. Many small pieces of shale were arranged to form several small caves in which the fish could hide. The water was maintained at a temperature of 74° F, and the pH was 7.2. Two box filters were added for aeration and filtration.

The fish were fed a diet of Tetramin Staple and beef heart. Several floating water sprite were added as a supplement. Within a week, the female burtoni was carrying eggs in her mouth. She was moved to a 2 1/2-gallon tank with the same conditions as the spawning tank except an airstone was used instead of a box filter. Live-bearing snails were added as scavengers.

The female carried for two weeks. During this time I lightly fed the tank with Tetramin, even though the burtoni appeared not to be eating. After two weeks, I noticed a couple of fry approximately 3/8 of an inch long swimming near their mother, but when I got closer, they made a hasty retreat back into her mouth. The fry continued to do this for about 10 to 12 days. From the time I first saw the fry, I began feeding them microworms and ground Tetramin.

The female was removed one month after spawning. At 60 days, the fry had grown to 7/8 of an inch.

* * * * *

III - Gold Gourami

An adult pair of gold gouramis was purchased with the idea of spawning them soon after they were taken home, since the female was exceedingly full and almost appeared to be egg-bound. Such an idea was not to be the case.

The gouramis were placed in a newly set up 15-gallon tank with a natural gravel bottom and enough water sprite to cover the entire surface of the water. The water was neutral and kept at 80° F. When released, both gouramis immediately hid behind the box filter and ventured forth only after being fed. After eating, they would return to their hiding place. This action, or rather lack of action, continued for three weeks until I decided that they were not ready to spawn. I put them in a 50-gallon tank with three younger gold gouramis, some kissing gouramis, and several small angels. They remained there for two months, during which time they seemed to calm down.

During the last week of their two-month stay in the 50-gallon tank, I noticed that the male was constantly chasing the female and had tried to construct a bubble nest, which was destroyed by the power filter, and it was apparent that the male was ready for spawning. However, I was not. I did not have a spare tank available at that time; so I put the male into another community tank to prevent him from harming the female.

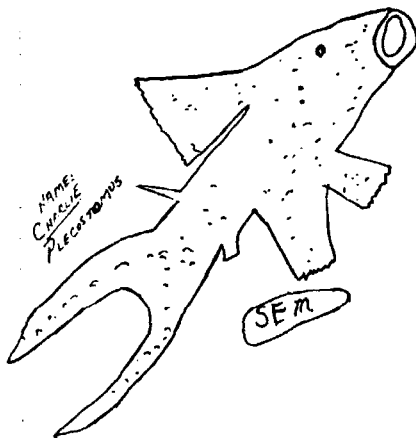
One week after I separated the male from the female, I set up a 10-gallon tank with the same conditions that were present in the 15-gallon tank, except that a sponge filter was substituted for the box filter. The male gourami was placed in the spawning tank and after two days had begun to build a bubble nest. At that time the air was cut off and the female was introduced into the tank. The male continued to blow his bubble nest until it covered half of the surface of the water and stood an inch high in places, being supported by the water sprite. Since I felt that spawning was imminent, the light was left on during the night and was not turned off until six weeks later.

The next morning there were eggs floating all over the surface of the water, many of them not in the nest. The female was being forced

to stay in the bottom corner farthest from the bulk of the bubble nest and the male. I netted her out and put her into a large bowl with tetracycline because the male had chewed off the back half of her tail and almost all of her anal fin. After the open wounds healed, she was returned to the 50-gallon tank, and her fins grew back. The male took little care of the nest after spawning. However, he did remain under the nest as it began to fall apart.

Fry began hatching out during the next day, and the male was then removed. The fry were fed infusoria as the only food for the first week. After that, they were also fed microworms and Tetramin Baby Fish Food. By the time the fry were six weeks old, they were eating crushed Tetramin Staple and the abundant growth of algae on the sides of the tank. At sixty days, the largest fry were about an inch long.

* - * - * - * - * - * - * - * - * - * - * - * - *



DECORATING WITH FISH?

The July issue of Apartment Life has an short, but quite interesting article, "Saltwater Aquariums, They're a lot easier than you've heard". There's a surprising amount of solid information packed into this "shortie" on the basic requirements for setting up a saltwater tank. Among other points, stress is laid on asking your dealer for advice, and on proper preparation and maintenance of the tank. While it will not serve as a complete guide for the serious hobbyist, it does make a good checklist.

ADD WATER - and STIR

By: Jack & Daisy Berletchick
Reprinted from The Youngs-
town Aquarist Sept. 1974

Looking for an aquarium fish that is a little different? Different looking? Different and sometimes difficult to keep? Let's talk about the Chocolate gourami (*Sphaerichthys osphromenoides*). We've been working with Chocolates for about two years and by hit and miss have learned some things that may help you to maintain these fish.

The first thing you must decide to do is forgo your son's college education to purchase a dozen or so Chocolates. They are not the cheapest of fish. Go to your friendly fish shop and talk the man behind the counter into ordering you a bag of Chocolates. They are seldom offered for sale, probably because they're not very plentiful, not being very prolific in nature. Also, they require conditions that the shops cannot always provide.

After you have special ordered your fish, go home and get the tank ready. Use at least a ten gallon tank equipped with an under-gravel filter. Fill it 2/3 full of tap water. Decorate the tank by making caves out of driftwood and plant some live water sprite plants. Float some more water sprite to cut down on the light and to give the Chocolates a feeling of security. As the tank ages, some of the water sprite will turn brown and start to decay. This is natural; it's the way it produces new plants. Leave the decayed plants in the tank. This along with the driftwood tends to soften and acidify the water. Plastic plants did not work well. When the fish were frightened and ran for cover, they would scrape themselves on the plants. Any injury is an open invitation to fungus growth.

Now, go to the kitchen, nudge the cook aside (unless you're the cook) and boil two cups of peat moss until the water turns dark brown. Pour this through a fine fish net, discard the peat, and pour the juice into the tank. Finish filling the tank with distilled water. Using sodium biophosphate, adjust the pH to 6.4 to 6.8. Bring the temperature up to 85°. As you have probably determined by now, you're making soft, acid, old, warm water.

This is not all! Your Chocolates are going to demand more. They not only like warm water, but they also like to breathe warm, moist air from the surface of the water. To achieve this - a fairly tight fitting cover is necessary. One of the new sliding glass tops would serve very well. Supply enough light to keep the plants going but the Chocolates like to take refuge in the shadows, so the lighting should not be too bright. Keep the aeration running slow, just enough to barely move the surface of the water.

After the tank has been set up and running for one week, it's ready to add the fish.

Your Chocolates will come with a guarantee. Yes, they're sure to get the 'ich', they're very susceptible to this disease. Rather than trying any of the many ich remedies on the market, gradually

raise the temperature to close to 90⁰. After three days the ich should have disappeared. Take at least one week to gradually lower the temperature to normal.

Ich remedies are only a few of the medicines that the Chocolates are not compatible with. Acriflavine, salt, Mercurochrome, methylene blue, and antibiotics proved deadly every time. While we're on this subject, avoid using ion-exchange resins for softening the water. This also resulted in fatalities.

The hard part is finished because from now on the key ingredient is NEGLECT. On water change day just skip by the Chocolate's tank and don't feel guilty about it. We're fresh water fanatics in our fish room but we've found that Chocolates just do not like fresh water. When we first started with these fish, after each water change those fish that didn't die, took a turn for the worse. It didn't take long to decide that if they're doing good, leave them alone. By only topping off the tank with tap water to make up for what is lost through evaporation (there won't be much with the tight fitting cover) we have kept Chocolates alive for over 1½ years.

Do Chocolates need live food? Ours have never seen any so they don't know whether they need it or not. They are very happy with their frozen or freeze-dried brine shrimp and a pinch of green flake food or beefheart every now and then.

When you purchased your Chocolates they were probably pretty small and weak looking. So feed them three or four times a day and in an unbelievably short time (about three months) they will be sexually mature. Do you have males and females? Probably one out of every six will be a male. The male's dorsal fin is supposed to be more pointed than the females but they don't hold their fins erect long enough to see them, let alone compare the difference. The only other outward sexual differences seem to be size (males are smaller) and the throat pouch. The female's chin comes down in a very sharp, straight line while the male's chin shows a slight outward curve. The females are the aggressive ones with the largest one usually being the bully.

Now with your Chocolates mature, happy, and healthy the only natural thing for them to do is reproduce. We were happy just to be able to keep these fish alive so can you imagine the degree of excitement when we saw a pair going through false spawning embraces? The spawning site was underneath a driftwood cave. Each time another fish came within sight the pair would break apart and ferociously chase the intruder. After about ½ hour of this all the other fish were removed from the tank. Within minutes the pair realized they were alone and with one tight embrace the large yellow eggs were deposited in a pile on the gravel. The two fish seemed to be in a stupor for about ten seconds with the male coming around first. Very quickly, he picked the eggs up one at a time. There were thirty. Then the female came to and she immediately zapped him in the throat twice and we quickly removed her from the tank.

This male was not fed while he brooded the eggs. Published incubation time is between 10 and 14 days. Although he was watched closely during the last few days (how many days and nights can you stare into a fish tank??), no fry were seen. Did he swallow them?

The next spawning was not seen but another male was noticed to have a slightly enlarged throat pouch. Using the theory of the mouthbrooding rift lake cichlids (some will eat while brooding and some will not), he is being fed live baby brine shrimp. So if all goes well, you can bet your Diatom filter we'll let you know what baby Chocolate gouramis look like!

* * * * *

THE SECRETS OF SPAWNING FISH

By: Rick Johnson
Greater Akron Aq. Soc.

This is the article that is finally going to reveal all the secrets that the experts use to get their fish to spawn! This article will be the only reference you may need to finally get those fish spawning which up until now may only be laying around devouring food! Enough sensationalism! On to the secrets.....

To start off right, each and every aquarist should go to their favorite tropical fish store and buy the three volumes of THF's Breeding Aquarium Fishes and read through each and every one. Be sure to absorb all the important information contained in them. Go on, we can wait ten minutes! If you have read through them all or just a part of any one of them, you will probably have noticed that they were pretty useless. They seem to promise a SECRET FORMULA to be found inside for each species that must be followed to the letter or imminent disaster will follow. It just ain't so! The three volumes are very good in the sense that they usually show good pictures of the species and sometimes tell about the sexual differences of the pairs and can enlighten the aquarist to the basic needs of a certain fish at times. But don't buy them with the basic idea of leaning the 'RECIPE' (as one book is brash enough to be titled) of spawning a said fish.

The biggest kept secret of spawning any fish is: GOOD AQUARIUM PRACTICE AND TECHNIQUES. That is the number one most important factor whether a fish will spawn or not. The above encompasses too much to go into in any one article, especially when I'm supposed to be revealing the secrets of spawning fish. But... some of the MOST important are proper feeding, water changes,^{1/} proper filtration, adequate but not excessive temperatures, and tank arrangement. As mentioned above, any

^{1/} Not all fish require frequent water changes. Some actually prefer 'old' water, NOT dirty water however. It's up to you to know which species prefer what, but on the whole, most fish are better off with water changes.

one topic could fill up this entire magazine. Read up and ask questions about your fish and their requirements. Information is usually free and even when it costs it is CHEAP! If you have a pair of mature fish in the same tank and provide them with good sound aquarium practice they will undoubtedly spawn!

The second best kept secret has to be having MATURE SPECIMENS TO ATTEMPT SPAWNING. No matter how hard one tries to spawn a fish, if it isn't sexually mature it won't spawn. Sounds pretty obvious doesn't it? However, this factor can be very easily ignored by the avid (rabid?) novice who wants fry to appear in his tank. We are all novices to a certain extent and all can use a reminder from time to time. What is sexual maturity? When does a specific species reach sexual maturity? One of the most commonly asked questions is "How big do they have to be to spawn?" It all boils down to the third best kept secret...

KNOW AS MUCH INFORMATION ABOUT YOUR FISH AS POSSIBLE. This is one of the easiest and most ignored aspects of breeding fish. You can find books in our (GAAS) library, at the public library, in university libraries, and from fellow aquarists in the society or across the country. One of the best methods I know of is to read the exchange bulletins that are received every month in our society library. We presently get about 75 exchange bulletins each and every month and every one has at least one or two articles on breeding a species of fish or techniques, etc. (Nancy White reviews some every month to let us know some of the articles that appear, and Paul Schroedl just sits back there drooling for the chance to dig through them to find your particular interest.) Also in the exchanges are the addresses of the officers/board members/committee members of the particular clubs. They are usually the ones who also write the articles so you have a good chance to write to them and get a personal correspondence from them giving you any details that you may not have understood or read. A letter to the author sent to the bulletin's address will usually find its target also. Personal correspondence is invaluable.

Scientific papers are available on every described species of fish in the world. Look for references at the end of breeding articles or in the indexes of reference books. Go to the library (either university or public) and ask them to look up the papers for you. If they don't have them at hand they can sometimes get them for you. Large Museums of Natural History or Science have libraries and if there are none close, you can write to the head of the Ichthyology Department and ask how to go about getting copies of the papers you want.

A lot of work it sounds like, huh? It can be but I find it most rewarding and stimulating to the hobby. Knowledge is everything! You are bound to find something you didn't know about your particular fish and learning about their natural habitat could be a very important factor in keeping your fish healthy. Knowledge of their natural habitats gives us the key to the type of foods they exist on in the wild, the type of habitat they are found in and usually breed in, and the maximum size attained in the wild, all of which is VERY important when it comes to providing optimal conditions in the aquarium. This also gives you

an idea of when sexual maturity may take place or at least how big of a tank you are going to need to maintain the fish.

Another trick which may sound so obvious that it seems dumb is to HAVE A PAIR (a male and female) of the fish to be spawned! Aw, come on now, you say, everybody knows that, but does everyone put at least one male and one female together to try to spawn? Some species are difficult to sex and can only be guessed at as to which is which. Good examples of this are discus, angels, members of the freshwater 'sharks' and loaches, etc. Some livebearers are easy to sex (guppies, sword-tails, etc.) but some are difficult, i.e. halfbeaks, and did you know that *Xenotaca eiseni* males have no gonopodium? No matter how much you may read or know, the only way to sex certain species is to dissect them, and then it's a little hard to get them to spawn afterwards. There is safety in numbers! In difficult to sex fish, buy at least four or more preferably six specimens. With six fish, the odds of getting a pair are 31 to 1 or 97%.

Sometimes having a single pair just won't do. In aggressive specimens you are better off with one or two males to a double or triple amount of females. Rift Lake cichlids are a good example of this. *Corydorus aeneus* seem to spawn better in an "orgy" type situation, with one female and several males. Most tetra species prefer to spawn in a one male to several females situation. Most aquarium literature suggests the appropriate set up for spawning.

To get a SUCCESSFUL spawn, the biggest secret is knowledge of the PROPER CARE OF THE FRY. Many times aquarists get a species to spawn only to have the eggs fungus or the fry die. In most cases it is the aquarist's fault. First feedings are of grave importance, not only what to feed but when to feed it. Some fry are large enough to take baby brine shrimp right off, others need infusoria to survive. Discus babies are dependent on the slime of their parent's sides for first nourishment. Some substitutes are being used now with some degree of success however. Knowing what type of foods the fry require is important. The only way to find out is by experiment, experience, or reading/correspondence/word of mouth. The latter is the easiest of the three but the other two really add to the experience of spawning your fish. Pick a generally expendable spawn to experiment with of course.

Feeding the fry is important but right up there, hand in hand, is knowing how to care for them. Anabantids need air to breathe of course, but it should also be about the same temperature as the water they are in or even slightly higher. Moist air is also of importance. Livebearer fry usually need plenty of cover in the way of spawning mops, live floating plants, or lots of rocks and anchored plants or they may be devoured by the parents and/or any other fish present. These are just a few examples. Every fry needs some type of special care or consideration. If you don't know what it may be, you can kill the fry.

Filtration of the spawning or rearing tank is also important. Most fry are so small that a power filter is completely out of the question. Box filters are capable of sucking in the fry of most fish also. Under-gravel filters are impractical for species that require very clean

conditions or in which the fry lay on the bottom because of the food and debris that may just lay there. The new type of sponge filters are very well suited for most species and are very maintenance free. Before the fry hatch choose what type of filter to employ. If you know the requirements and what the fry will do (swim throughout the aquarium, lay on the bottom, stay on the surface) you can pick the filter without much trouble. Just use a little common sense. (A piece of nylon stocking or panty hose pulled over the holes in box filters works quite well.)

Well, those are the biggest secrets of spawning aquarium fish. You can read three or three hundred reports on spawning the same fish and may find that they all contradict each other as far as pH, temperature, foods fed to the parents, etc. What you won't find contradictory (except in cases of blind luck) is that proper care was administered to the parents and proper conditions were maintained in the tank (i.e., caves for cave spawners, plants for shy and plant spawning fish, breeding grasses or floating vegetation for livebearers, etc.). All in all, you would find all this in the three volumes of Breeding Aquarium Fishes if you can read between the lines.

A person starting to spawn their first few species usually won't have the insight needed as the fish are all a mystery and the idea of secret formulas, specific pH, hardness and the like is proliferated in some aquarium books. Certain fallacies are passed along through the decades by people who read a lot but don't try anything. A little common experience goes a long way.

Now that the biggest secrets are out, here are a few tips to help in spawning fish. However, all these tips could be incorporated under good aquarium practices.

If a fish seems to be extremely healthy but just won't fill up with eggs or show any signs of willingness to spawn, it may just be used to its surroundings and/or to its tank mates. A change of scenery or another addition to its tank, preferably one of its own species, will touch off the "fever". Add a few plants or rocks or take all the decorations out and start from scratch. Do something to break the monotony of the same tank/same fish. Fish seem to take their mates for granted often. I have found them to show border line cases of jealousy - when a new fish of their species is added - which usually induces the older pair to spawn.

Sometimes aquarists feed their fish too good. Not too good that it affects the fishes' health or well being, but just enough that there isn't an incentive to touch off the spawning urge. This is a "technique" that I have found very useful. I believe a fish needs new food in its diet for the little extra incentive that may be needed to make the fish spawn.^{2/} If the same foods are fed over and over again day after day, the fish will become used to them no matter how many and how varied they

^{2/} Not all fish need the new food technique, of course, but it can work on the hard-to-excite fish.

are. It takes a little something extra like live daphnia or white worms or a few earthworms, almost anything new or different in the fishes' diet. It doesn't need to be a live food but this usually does the most good. I try to feed a varied diet which includes several brands of basic flake foods, brine shrimp, scallops, smelt, daphnia, krill, freeze dried tubifex, and in general, almost any food on the market is worth trying. But I always try to hold something back as that extra incentive. It really works! Quit feeding the "secret weapon" for a few days before you want the fish to spawn, then feed it several times a day. Then prepare your rearing tank.

Water changes are the miracle of the century as far as spawning goes. I can remember reading old aquarium magazines and books that advocated the well aged water with the yellowish cast to it for the health of your fish! That has all changed in case you may not have heard. Water changes of up to 50% a week are advocated by almost every aquarist keeping or breeding fish. There are exceptions of course but almost all fish will do better with water changes. So you do water changes every week regularly and the fish grow and grow and their colors shine in the dark but they won't spawn. Skip the water changes for a week or maybe even two. Then do one of up to 50% and it usually kicks them off. Again I believe that fish can become almost too pampered and they need a little change to excite them.

A lot of times a pair or number of fish are living together in a tank that was set up to raise them in or are in a community tank set up where they spawn regularly but the offspring or the eggs are devoured by the parents or other occupants of the tank. When an attempt is made to set them up in a spawning tank the parents hide all the time or just plain refuse to spawn. Take a close look at the tank. Most fish are very much ill at ease in a bare tank and won't spawn in one. A fish needs to feel secure before it attempts to reproduce. Add gravel or rocks or plants to the conditioning/spawning tanks according to the requirements of the particular species. All it really takes is a look at the tank they came from to give you the basics of their requirements. Make the spawners feel secure in their new tank!

Temperature is another factor that may bring the success or failure of spawning. Maintaining the fish at an unusually high temperature will make them grow faster in most cases and usually make them spawn more readily. However, the higher temperature also raises the metabolism of the fish which brings about a quick "burn out" of the fish. Maintain the pairs or species at a normal temperature or just a few degrees above normal, and when spawning is desired raise it a few degrees, usually five to eight is all that is needed. This way you can save on the heating bill, the fish's food bill (they eat more at higher temperatures), and the fish will be better off for it also. It is easier to raise the temperature from the normal to a higher range than to keep a fish at an abnormally high temperature only to have to raise it again to induce spawning.

Well, that's about all anyone has to know in order to get their fish to spawn. There are NO super secrets or recipes or incantations needed. Why are some fishes like clown loaches, elephant noses, Rift Lake cichlids

like *Haplochromis moorii* or *Lamprologus sexfaciatus*, or in general so many of the expensive fish so difficult to spawn and why aren't many people spawning them? Mostly because they are so expensive and sufficient numbers aren't maintained by sufficient numbers of aquarists to spawn them. Remember how hard the angelfish was supposed to be to spawn when it first came in?

Another reason may be due to the fact that most people don't realize that a clown loach can attain a size of over 12 inches in the wild, the same with elephant noses. But the day is coming when these and a lot of the other "unspawnables" will be spawned, either due to lower prices, more availability, or a better understanding of the species due to research and observation.

Again, good aquarium practices and technique is the single most important factor in spawning fish. If you have the combination of sexes, the conditions proper for successful spawning, mature fish, and know the procedure for taking care of your particular species of fish, you can't go too far wrong.

AFTERWORD: I realize a lot of generalizations are stated in the above but it is unavoidable in an article that covers all fish! There are thousands of exceptions to every rule and that follows in the above. I know, you can think of a fish right now that requires water that has been in use for a few centuries, or a pair of fish that will spawn at three hours of age, or a fish that is so rare that it doesn't even know what it is itself, but the important fact is to give it the proper care and follow the guidelines I tried to bring out and don't rely on a "secret technique". KEEP SPAWNING!

A NOTE ABOUT THE ART WORK

The sketch of Charlie, the plecostomus, on page 4 is by Sharon McInturff. I must say that she did better with a pencil than I've ever managed to do with my camera on that fish! The sketch of the kissing gourami on page 13 is by Royal Blomberg.

The cover is a secret to me at this typing. I had to rush the deadline on the Delta Tale this month and I don't know the subject or the artist tonight. Full credit will be given, if not this month, at least next month.

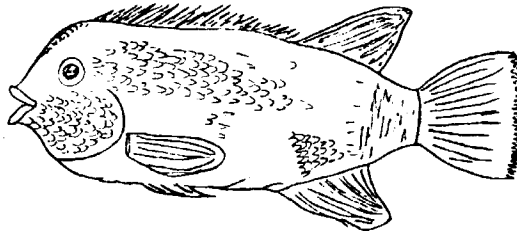
FISHY QUOTATIONS

By: Ruth Brewer, PVAS

Each of these quotations can be completed by filling in common names of fish. How many can you complete?

1. "Some circumstantial evidence is very strong, as when you find a _____ in the milk."
Henry D. Thoreau, Journals.
2. "I might have been a _____ in a glass bowl for all the privacy I got."
Saki, The Innocence of Reginald.
3. "Level spread the lake before him;
From its bosom leaped the _____."
Henry Wadsworth Longfellow, Song of Hiawatha.
4. "Slippery as two _____ on a block of ice."
Old folk saying.
5. "If the young _____ be a bait for the old pike, I see no reason in the law of nature but I may snap at him."
William Shakespeare, II Henry IV.
6. "Oh, the _____ has pretty teeth, dear,"
Marc Blitzstein, Mack the Knife.
7. "Neither fish nor flesh, nor good red _____."
John Heywood.
8. "And this is good old Boston,
The home of the bean and the _____."
John Collins Bossidy, Toast.
9. "Will you walk a little faster," said a _____ to a snail."
Lewis Carroll, Alice in Wonderland.
10. "He is a man of splendid abilities, but utterly corrupt. He shines and stinks like rotten _____ by moonlight."
John Randolph of Edward Livingston.

(Answers on page 16.)



KISSING Gourami R.B.

BOWL SHOW RESULTS AND STANDINGS

June 14, 1976

| | <u>1st</u> | <u>2nd</u> | <u>3rd</u> |
|--------------------|---------------|---------------|------------|
| <u>Guppy:</u> | | | |
| AOC | Walsh | - | - |
| 2 Matched | | | |
| Males | Walsh | Walsh | - |
| Multi | Walsh | Walsh | - |
| <u>Cichlid:</u> | | | |
| New World | | | |
| M'brooders | - | - | - |
| Other Africa/ | | | |
| Asia | McInturff, J. | McInturff, J. | - |
| Open | McInturff, J. | McInturff, J. | - |
| <u>Egglayer/</u> | | | |
| <u>Livebearer:</u> | | | |
| Tetras | McInturff, D. | - | - |
| Characins | - | - | - |
| Open | McInturff, D. | McInturff, D. | Lenzen |

| | <u>POINT STATUS</u> | | | | <u>June</u> | <u>Qtr.</u> | <u>Ann.</u> |
|-----------------|---------------------|-------------|-------------|--------------------|-------------|-------------|-------------|
| | <u>June</u> | <u>Qtr.</u> | <u>Ann.</u> | | | | |
| <u>Guppy:</u> | | | | <u>Egglayer/</u> | | | |
| Walsh | 18 | 53* | 89 | <u>Livebearer:</u> | | | |
| McInturff, S. | - | - | 5 | McInturff, D. | 12 | 44* | 71 |
| Nixon | - | - | 2 | Donnelly | - | 5 | 11 |
| | | | | Lenzen | 2 | 2 | 12 |
| <u>Cichlid:</u> | | | | Nixon | - | - | 4 |
| McInturff, J. | 14 | 41* | 59 | Warren | - | - | 2 |
| Warren | - | - | 22 | | | | |
| Sprague | - | - | 9 | | | | |
| Nixon | - | - | 6 | | | | |
| Lenzen | - | - | 4 | | | | |
| Tietjen | - | - | 3 | | | | |

* Second Quarter Award

T H A N K Y O U

We would like to express our appreciation to the following shops and individuals for donations used for the raffle at the recent PVAS Spring Show:

Gene Aldridge.....Advanced Aquarist Guide
Textbook of Fish Diseases
Killifish

American Pet Co.
c/o Korvetts.....10-gallon setup

Annandale Pet Shop.....8 oz. Tetramin Staple

Aquarium Supply.....29-gallon tank certificate

Aquatic World.....10-gallon Woodtone tank & hood

Bailey's Pet Center.....10-gallon tank

Ben's Tropical Fish.....\$10.00 gift certificate

Bubble 'n' Bark.....6 bottom filters

Centerville Pets &
Supplies.....8 oz. Tetramin Staple

Engleside Pet Shop.....Hush II Pump

Fish Ltd.5-inch fish net, Maracyn,
Spawning strip, 3-D tank back-
ground, 1/2 oz. Ocean Plankton

Home Aquarium.....10-gallon tank

Kordon.....2-1/2 oz. Ocean Plankton,
2 1 oz. Micro Plankton,
2 8 oz. Super Activated Carbon,
2 8 oz. Wood Charcoal,
12 1 oz. Diet 15

Kordon (via Salt
Water Group).....5 Easy Filter & Novaqua package

The Menagerie.....2 \$5.00 gift certificates

National Petland, Inc ...Hush III Pump

Oakton Pet Shop.....20-gallon long tank & \$5.00
gift certificate

Ocean Odyssey.....65 lbs. tuffa rock

Pisces Publishing Corp. . "Today's Aquarist" Vol. 2, No. 2
The Betta Splendens: A Breeder's
Primer

Tetra Sales....."Beginner's Aquarium Digest"

And thanks to the following members who made trophy donations:

| | |
|----------------------|----------------------|
| Gene Aldridge | Bob Moore |
| Jerry Donnelly | Richard L. Rich |
| Carl & Mary Hardy | Steve Siska |
| Gary Haas | Mike & Susan Sprague |
| John Jessup | Pete & Pat Tietjen |
| Dave & Jan McInturff | Ted & Edna Walsh |

And to each and every one who pitched in helped with the work -- getting publicity and donations, setting up, registration, benching, fish sitting, auctioneering and all the other jobs right on through knockdown and cleanup -- our heartfelt thanks for your willing efforts.

Last, but by no means least, our appreciation to the judges who served with such distinction:

| | |
|-----------------|--------------------------|
| Gene Aldridge | Charles & Helen McCorkle |
| Jack Connery | Mark Schneider |
| Bill Cunningham | Ed Taylor |

Thanks to all of you for helping make our show a success.

- # - # - # - # - # - # - # - # - # - # - # - # -

bap REPORT

Welcome to our second Intermediate Breeder -- Jan & Dave McInturff. Let's hope that all the new fish purchased at the recent auction will spawn and we'll be getting new entries in the program.

The current totals are:

| NAME | POINTS | |
|----------------------|-------------|-------------------|
| | <u>Firm</u> | <u>In process</u> |
| Susan & Mike Sprague | 130* | - |
| Ruth Brewer | 115* | 25 |
| Gene Aldridge | 80 | 15 |
| John Jessup | 55* | 45 |
| Walt Lilley | 200** | - |
| Diane Nixon | 60* | - |
| Pat & Pete Tietjen | 15 | - |
| Jan & Dave McInturff | 215** | - |

* Breeder Award

** Intermediate Breeder Award

McInturff - Rusties, Plecostomus, Kribensis, Nanacara

Gene Aldridge, BAP Chairman

- # - # - # - # - # - # - # - # - # - # - # - # -

ANSWERS TO "FISHY QUOTATIONS"

- | | |
|-------------|--------------|
| 1. Trout | 6. Shark |
| 2. Goldfish | 7. Herring |
| 3. Sturgeon | 8. Cod |
| 4. Eels | 9. Whiting |
| 5. Dace | 10. Mackerel |



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 | \$3.00 |
| | | (under 18) | |

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 Cocoa-Cola Bottling Plant, 5401 Seminary Road, Alexandria, Virginia at 8:00 P.M.