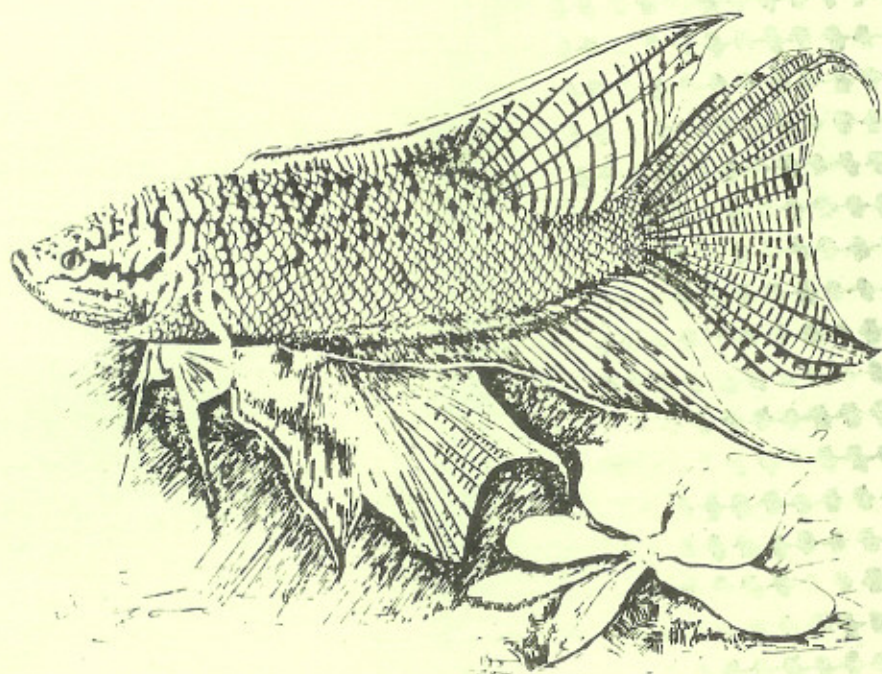


*** DELTA TALE *** AUGUST 1982

OFFICIAL PUBLICATION OF

VOL. IV Issue 7 50¢

potomac valley aquarium society



August Mini-Auction

POTOMAC VALLEY AQUARIUM SOCIETY



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Delta Tale is published for the benefit of the Potomac Valley Aquarium Society (formerly the Potomac Valley Guppy Club), a non-profit organization, established in 1960 for the purpose of furthering the aquarium hobby by dissemination of information, encouraging friendly competition, soliciting participation in its shows, and promoting good fellowship. Correspondence should be addressed to: Secretary, P.V.A.S., P.O. Box 6219, Shirlington Station, Arlington, VA 22206. Original articles and drawings may be reprinted if credit is given the author and Delta Tale. Two copies of the publication in which the reprint appears should be sent to Delta Tale, which will forward one copy to the author/artist. All material for inclusion in Delta Tale should reach the editor no later than the first Saturday after the monthly Monday meetings. The Potomac Valley Aquarium Society and the Delta Tale disclaim any responsibility for content or availability of advertised merchandise or service in these pages. Customer satisfaction is a matter to be worked out exclusively between the advertisers and buyers.

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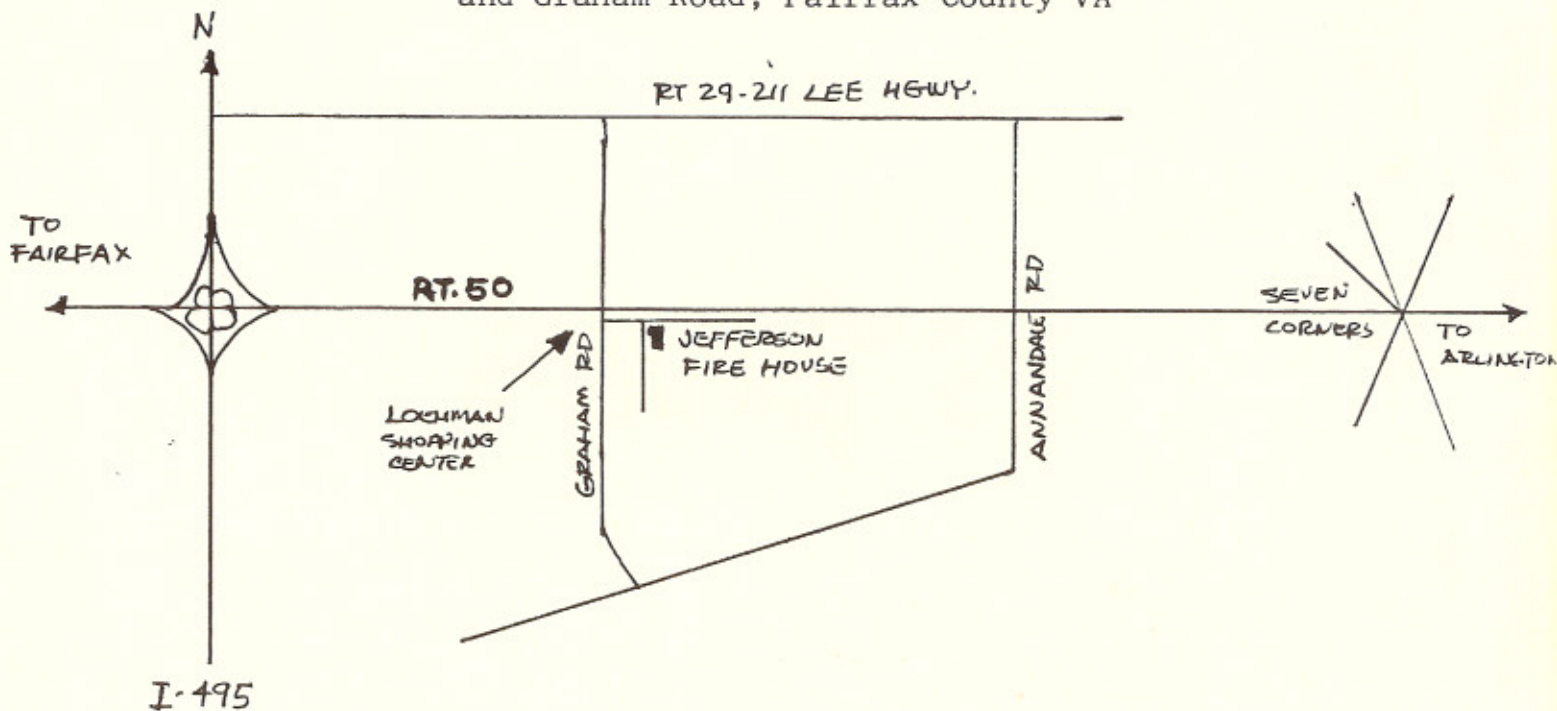
MEMBERS AND NON-MEMBERS HAVING QUESTION ABOUT FISH, AQUARIUM KEEPING, AND BREEDING CAN CALL ONE OF THE OFFICERS LISTED ABOVE, WHO WILL BE GLAD TO ASSIST YOU.

Printed by TOP CAT PRINTING, 164 Colburn Dr., Manassas Park, VA 22111

AUGUST 9th MEETING: 8:00 p.m. Monday

JEFFERSON FIRE HOUSE COMMUNITY ROOM

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P.V.A.S. NOTES.....

Summer doldrums have settled on the club for sure. John Jessup is busy at a history association conference. Many members are vacationing,... or just back from one. Weather too hot, humid and hazy for much more than keeping tanks within reasonable temperature ranges.

Welcome to visitor (and new member) Tim Belcher of Sterling, Virginia. Tim is into Betta breeding.

The BOD accepted the initiation of a new Plant Breeding Program to parallel the Breeders Award Program.

By the time you receive your Delta Tale we will have had our August 1st picnic. Officers and the general membership voted at the July meeting to have the club treasury pay for food and drink.

Fall Banquet and Auction is planned for Oct 16th(Banquet) and Oct 17th(Auction). It's to be at Mr T's restaurant and the guest speaker is not confirmed yet but will be David Herlong, or Bob Goldstein, both from North Carolina.

August meeting includes the second mini-auction of the year. Bring those fish you spawned this spring!

WH



POTOMAC VALLEY AQUARIUM SOCIETY

Treasurer's Report - 6/30/82

6/1/82	BANK BALANCE		\$2,120.35
	Plus Revenues:		
	Memberships	\$ 10.00	
	June Raffle	10.00	
	Refund on cokes	16.60	
	Spring Auction tabs paid	<u>140.50</u>	+ 177.10
	Less Expenses:		
	Bowl Show Awards	50.96	
	Printing June Delta Tale	33.00	
	Postage: May & June Delta Tale	66.60	
	Post Office Box Rents	56.00	
	Fee for Picnic Site	15.00	
	Show Expenses:		
	Phones	8.04	
	Supplies	19.33	
	Cokes	138.11	
	Advertising	<u>81.50</u>	
		<u>246.98</u>	- 468.54
6/30/82	BANK BALANCE		\$1,828.91

Betta taeniata

by John Mangan

Nearly everyone, even people who have never kept fish, is familiar with Betta splendens--the Siamese fighting fish--with its flashy colors and fighting behavior. What most people don't know is that there are many other species of Betta, some of them quite different from the familiar B. splendens. One of these is Betta taeniata.

B. taeniata is native to Thailand, Sumatra and Borneo and was first described by Regan in 1910. The fish did not become available to aquarists until 1956 when Roloff imported some into Germany and they are still not commonly available even today.

B. taeniata is similar to B. splendens in basic body shape but is much larger, attaining 4 inches. Mature individuals are an attractive red-brown color when in good condition and the male has a bright blue area from the lower jaw back to the operculum. Being anabantoids, they can be kept under fairly crowded conditions although their tank must be tightly covered as they are fairly good jumpers. Unlike B. splendens, they do not fight and any ratio of males to females may be kept together peacefully. Wild-caught individuals prefer live foods although they sometimes take flake food while the tank-raised fish will eat any type of food offered to them, so feeding usually does not present a problem.

Spawning B. taeniata is fairly easy. A five gallon tank is large enough for one pair. The tank should contain at least a few plants (live or plastic) and a filter is not really necessary. As mentioned above, the tank should be kept tightly covered. This prevents jumping and also keeps the air over the water warm and humid. This is important for the fry when they begin using their labyrinth organs to breath atmospheric air. The breathing of chilled air is a major cause of mortality among anabantoids although B. taeniata does not require as high a temperature as does B. splendens. A temperature of 75° F is sufficient for spawning and actually works better than higher temperatures. The pair should be brought into spawning condition by feeding live foods and blackworms seem to work best and the fastest. Spawning should occur shortly after the female appears heavy with eggs.

The spawning act is very interesting and not at all violent as with B. splendens. The fish embrace and position themselves so that the female's vent is over the male's anal fin. One to several eggs are released and the male catches them in his anal fin. The female turns around and takes the eggs from the male's cupped anal fin into her mouth. The female then swims around in front of the male and spits the eggs toward his face. The female then darts forward and grab the eggs before the male can get to them. This is repeated many times until the male is finally able to take the eggs into his mouth. This may take as long as 10 to 15 minutes per egg and the whole process is repeated many times.

After the male has lost interest in continuing and has his mouth packed full of eggs, the female is best removed. The female will

will harass the male by following him around spitting eggs at him and getting "angry" when he tries to ignore her and swim away. The male will then spend most of his time in the plants near the top of the tank. The eggs will hatch in about two weeks depending on temperature and the fry are about 5 mm in length upon release and look like miniature versions of the adults. They can be fed baby brine shrimp, microworms and crushed flake food immediately and growth is very rapid even when crowded in a five or ten gallon tank and the fish can be up to one inch by two months.

The aquarist should not be discouraged if the male eats or spits out the first spawn. It often takes two or three spawnings before he gets everything right. Roloff(1959) artificially incubated eggs of B. taeniata to observe their development and made a very interesting observation: "Infertile eggs dissolved into a thick mass, which was quickly dissipated over the bottom when stirred with a glass rod. This is nature's way of providing that the bad eggs do not infect the good ones, but are quickly disposed of with water expelled by the fish when breathing." In conclusion, B. taeniata is a very attractive, easy to keep, and interesting fish well worth trying if you are lucky enough to find some.

Reference: Roloff, E. 1959. Breeding Betta brederi. Tropical Fish Hobbyist, Sept., 1959, page 8.

An End to Ich?

by John Mangan

"Hello, is this Dr. Smith's office? I'd like to make an appointment to bring Walter, my guppy, in for his ich vaccination. Yes, 12:00 Wednesday would be just fine. Thank you; good-bye.

Such a telephone call may sound rather silly now, but someday it may be a rather common occurrence thanks to researchers at the University of Georgia. Dr. John B. Gratzek, chairperson of the department of microbiology, has developed a vaccine for ich (Ichthyophthirius multifiliis), one of the most common diseases of aquarium fishes. Dr. Gratzek and Dr. Donald Dawe are undertaking a three year study to find the most practical way to administer the vaccine to large numbers of fish and also the optimum dosage as well as the duration of immunity.. They will try feeding, spraying and immersing the fish in the vaccine. They already know that injection of the vaccine bestows immunity, but this, of course, is impractical except for large valuable fish.

Betta coccina

by John Mangan

Betta coccina is one of the newest species of bettas to be imported into this country and, in my opinion, is the most attractive of all the bettas, including B. splendens. B. coccina (about 2") is smaller than B. splendens and is more slender. In the male, the basic body color is a deep wine-red highlighted by irridescent blue along the top edge of the dorsal and caudal fins some flecks of this coloration throughout the tail. Young males usually have a greenish patch on their sides which disappear with age. Some individuals retain this spot longer than others. The male's dorsal and anal fins are longer than the female's and have long tapering points. The female is a slightly less red in color and lacks the blue coloration. The female also has a more stout body structure, although both fish have a point in the center of the tail (longer in the male). Both sexes have bright blue eyes that glow like tiny lights. I have never seen another fish with eyes quite like these and even if the fish was otherwise ugly, they would be worth having just for the eyes. Both fish also have a lightly colored patch in the opercular area. These fish really have to be seen to realize how truly attractive they are and the few published photographs do not do them justice.

B. coccina has another color pattern that is occasionally exhibited. The fish becomes a very dull red with dark longitudinal stripes. This may occur when courting, when frightened, or sometimes for no apparent reason.

B. coccina was described as a species by Jorg Vierke in 1979. They are native to east central Sumatra, are relatively peaceful, and the males do not usually fight. Like B. splendens, they build a bubble nest for spawning and the fry are rather small, requiring infusoria as a first food. The fish is a good jumper and the tank should be kept tightly covered.

All of the individuals now in North America have come from Marty Cain of Canada. Marty found them in the summer of 1980 in a department store's fish section. I consider myself extremely lucky to have gotten a pair of these bettas since the limited number of fish available have been distributed to only a handful of aquarists. As far as I know, there have not been any successful spawnings to date. Several people have gotten eggs and Marty Cain had one batch of fry, but lost them to an unknown disease he was unable to cure. Hopefully someone will get lucky soon. Tank raised fish should spawn much more readily than their wild-caught parents. If they become readily available, this fish should become very popular.



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For the purpose of awarding the FAAS "Hall of Fame" Award posthumously to Braz Walker, the following is submitted by the American Catfish and Loach Association (ACALA) for consideration by all voting societies.

James Brazelton (Braz) Walker died on March 28, 1982 at his home in Waco, Texas. At the time of death, he had just completed another book, a volume for children entitled A Boy and a Dolphin.

Braz left a lasting impression with all hobbyists through his writings which included: Enjoy Native Fish; Bouillabaisse; Aquatic Oddballs; Tropical Fish Identifier; Angelfish; Sharks and Loaches; Oddball Fishes and Other Strange Creatures of the Deep; Keeping and Breeding Cichlids; Fish in Fact and Fantasy. He was an author of columns and photographer for T.F.H. Publications; Freshwater and Marine Aquarium (FAMA); Pets/Supplies/ Marketing; Medical Research Engineer; Aquarium Illustrated; The Aquarium; Aquarist's Gazette; Petfish Monthly; Today's Aquarist. His photographs have appeared on the covers of numerous hobby-related publications.

Braz's growing fame as a writer and scientist despite his handicap brought him numerous awards throughout his life including the coveted title, "Fellow of ACALA", an award bestowed upon outstanding individuals for their dedication to the hobby. The following are but a few of the awards presented to Braz during his lifetime: Self-Employed Handicapped Worker of the Year (1964); Distinguished Service Award (1968); Outstanding Young Texan (1968); Outstanding Young Men in America (1969 & 1971); Anchor Magazine (1968); Associate Editor of FAMA (1980).

During his freshman year at the University of Texas, he was stricken with all three strains of polio. Within three days, he was completely paralyzed except for his tongue and eyes. Not one to allow his handicap to stop his progress, Braz designed mouth operated equipment for fish photography; mouth operated equipment for the use of dictaphone and tape recorder; and tongue operated equipment for electric typewriters.

Earlier this year, Braz addressed a local club group and told them he felt he was one of the luckiest men in the world.

"I was born at the only time in history when someone in my situation could survive....I have a favorite quotation from Pilgrim's Progress: 'On this I am resolved, I will run when I can, go when I cannot run, crawl when I cannot go. My mind is beyond the river that has no bridge, though I am, as you can see, but of feeble mind.'"

Braz continued, "I'm a strong believer in motivation. Pick out something you want to accomplish in the realm of possibility, work toward it, and it will become a certainty one day."

Submitted by: Carol S. MacDonald
Editor of Catalyst & Member of ACALA

Carol S. MacDonald

Culturing Tubifex Worms

by Tony Benages

It is common knowledge to all fish "nuts" that live foods represent the best in high protein food for growth and development of young fish as well as conditioning of breeders. A variety of live foods can be cultured and raised for this purpose. In each instance best success is achieved by duplicating when possible natural environments and conditions.

One such food which is especially suitable for conditioning breeders is tubifex worms. To date, however, these are expensive, frequently unavailable and not infrequently represent a source of disease for your fish. Only those caught wild and sold commercially have been available. I have, as yet, never read of anyone successfully noticing that tubifex worms enjoy the conditions of silt on the bottom of a slow moving stream, I contrived a method of keeping them without any refrigeration.

METHOD: Place the contents of a 12 quart pail filled with silt obtained from the bottom of a local stream and cultured with tubifex, into a shallow galvanized pan measuring 15x12 x 3¹/₂ inches deep. Set the pan on a drain table in a cool room and allow a very small stream of water to flow continuously through a rubber tube into the pan. The worms come to the surface within a few hours. During the night, small masses of worms tend to migrate out of the pan and on to the drain table if the pan is overcrowded. If the mud rises in the pan because of the formation of gas, prick holes in it and press it down.

FEED: Baked potatoes cut in half; boiled potatoes; butts from head of lettuce; Masses of bran and bread. Press food down into the mud. Before feeding the tubifex worms to your fish, make sure that they are thoroughly washed.

TUBIFEX CULTURE PAN(patent applied for)

Since most of us do not have a drain table available, and since the expense of a continuous flow of water is prohibitive, I have devised a closed system which would permit the circulation of water over the mud without having to use large volumes of water from the faucet. The idea is the same as that used in the popular outside type filters used in many aquariums.

Reprinted from The Valley Stream (8/75)

Pisces Press, Nassau County Aquarium Society, May 1982

Live foods are the best food you can feed your fish. Even an occasional feeding will help vary their diet and keep them in good health. Live foods contain certain proteins and vitamins that are not found in most frozen or flake foods. Yet live foods are often avoided by hobbyists because they don't want to take the time to give their fish a treat or to get that special pair into spawning condition. No wonder some people say their fish lack color or will not spawn. One of the best reasons for feeding live foods is the pure joy of watching your fish gulp it down. There are many kinds of live food. Some, like brine shrimp and tubifex worms, can be purchased at most fish stores. This article will deal mainly with ones you can catch yourself.

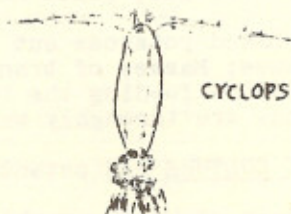
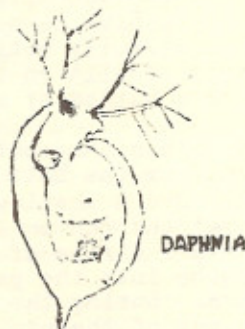
There are quite a few freshwater animals that have a value as live food. Here listed are some of the more common ones.

DAPHNIA:

This is the most common of live foods found. Some aquarists look upon daphnia as the best of all foods. This is not true. However, daphnia have a hard, indigestible shell, giving them a laxative property. Daphnia are very good for a fish which is not eating or is constipated.

FAIRY SHRIMP:

Fairy shrimp are a freshwater relative of the brine shrimp. They are a little larger than the brine shrimp; some species reaching one inch. Fairy shrimp can be collected a few weeks of the year,
(cont'd.)



Collecting & Feeding

LIVE FOODS

by Cary White / N.A.A.

COLLECTING & FEEDING LIVE FOODS, cont'd

only. When they are found they are quite abundant.

CYCLOPS:

This is a small crustacean like daphnia. It gets its name from the one eye on its head. Cyclops is a little faster swimming than daphnia, and is hard for some fish to catch.

BLOODWORMS:

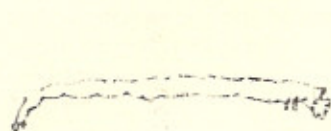
Not really worms but insect larvae, bloodworms are a good food for cichlids and other strong-jawed fishes. They can be recognized by their bright red color and whip-like movements. Bloodworms are not found in large numbers. Most often they are found with other foods collected.

GLASSWORMS:

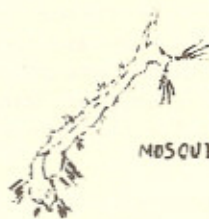
These too are insect larvae. They are hard to see in the net because their bodies are as clear as glass, hence the name. Glassworms are one of the few foods that can be found in the dead of winter.

MOSQUITO LARVAE:

The mosquito, that common summer pest, can be our friend by providing us with a good supply of fish food. The larvae of mosquitoes can be seen wiggling at the surface of most ponds in the summer months. They can be easily collected with a swift sweep of the net. You can raise your own mosquito larvae by filling an old tub with water and adding a little decaying vegetable matter. In a few weeks you should have a good supply of larvae. (A true fish-nut will put up with a few bites.)



BLOODWORM



MOSQUITO LARVA

Collecting live foods isn't very difficult, in fact it is quite enjoyable to get outdoors and get a little exercise. The only equipment you need is a large, fine mesh fish net (about 4" x 8" x 4" deep) attached to a five foot length of broom handle, and a large plastic bucket with a lid. It is important that the bucket be large enough so that the food animals collected do not suffocate and die. It should have a water tight lid to prevent spilling in the field or on the way home.

Now that you have your equipment, where do you collect? Live foods can be found in almost any stagnant, muddy-bottomed pond where there are no fish.
(cont'd.)

COLLECTING & FEEDING LIVE FOODS, cont'd.

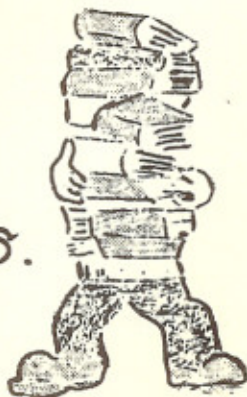
Often these places will have a bad odor. This is caused by the formation of gases in the mud. These gases have no effect on you or the food. Finding ponds is not too difficult. Look in low, flat, wooded places. One of the easiest ways to locate them is to ask local children. Road-side ditches are a good place to look. Many farms have ponds which are loaded with live foods. When you find a likely spot, move your net in a "figure eight" motion just below the surface of the water and about three feet from the edge of the pond. After a few strokes remove the net and look at its contents. If it contains many small, wiggling bugs the pond is good. If not, try again in a different part of the pond. Should you not come up with anything, try another pond. Most ponds are seasonal and do not contain live food all year round. Spring and Fall are the best seasons for most live foods. When you do find a good spot try to keep as much leaves and dirt out of the net as possible. This will make it easier to clean when you get home. Transport your catch home as quickly as possible. Don't leave them too long or they will die. When you arrive home, let the container settle. This way you can carefully siphon the settled dirt off the bottom.

In the same places where live foods are found, live certain fish enemies. These are sometimes accidentally collected and could kill your fish if not removed. One must be very careful to check for these when feeding any live food, even store bought. The most common of these enemies are hydra, water tiger, dragon fly larvae, leeches, and water beetles. You should check a good fish book for identifications and photographs of these. By pouring your catch into a shallow enameled pan, you can observe and remove any unwanted animals. If you are in doubt about anything, get rid of it.

Being sure you have only safe food animals, you can now feed your fish. Place a small amount in your tank and watch the fish dig in. Live foods will stay alive in your tank until they are eaten by the fish, but they should not be overfed because they use up oxygen. Some fish will eat themselves to death if overfed. Live foods should be stored in a large container with an airstone. They will keep for almost a week.

If you have never fed live foods, try some. Your fish will love you for it.

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a good
book? See us.



SPAWNING BETTA IMBELLIS

by: TED WILLIAMS D.A.S.

We were very lucky to receive a pair of *Betta imbellis* as a Christmas present from Dr. Suzanne Liebetrau. The male I received was already a show winner in an IEC sanctioned show and the female was a very ripe and mature beauty.

The first step was to acclimate them to our local water as Dr. Sue told me they were used to $\frac{1}{2}$ teaspoon of kosher salt per gallon of water. Since I do not believe in using salt, except as a medication for velvet, I made the complete change over to local fresh water before spawning them.

These fish got their name, *imbellis*, from the German meaning peaceful. They should have named them Jumping Bettas. Although most of you have probably already read the description of them in TFH as well as many other publications, I would like to explain the trials and tribulations I have had in spawning them.

I set up my standard *Betta* spawning tanks, however, being forewarned of their jumping ability I cut a glass cover for the top of the tank. One gallon of fresh aged water and some artificial spawning grass was added to the tank as well as a plastic coffee cup lid for the nest. The pair of *imbellis* were added carefully, allowing myself plenty of time to be able to watch their reaction to each other.

Upon entering the tank you would have thought that it was a family reunion. No flaring or aggressiveness, just like putting two females guppies in the same tank. Well, I thought, just my luck, another show freak not a spawner. I watched the tank for about two hours while doing other jobs around the fishroom and still no changes. Finally I left the fishroom in pursuit of other jobs.

The next morning the pair were still swimming around like brother and sister but every once in a while he would flare and go into his spawning colors, yet still no sign of a bubble nest. It was thirty-six hours before there was any sign of a nest, and a small one at that. Finally, forty-eight hours later, a beautiful, full nest. I am sorry to say, however, that I missed the actual spawning. By the third day (seventy-two hours) there were a large number of eggs in the nest.

The female and male were still swimming around in the tank together and as far as I could tell the female never did use the cover. The female was removed along with the cover and found that the male was not the least bit attentive toward the nest. At this point I figured the female had dropped her eggs and either one or both of them had picked them up and put them in the nest. I was sure that it was a false spawn and the eggs would fungus in the nest but lo and behold, twenty-four hours later, there were fry by the hundreds. I was happy and surprised to see it was a large spawn.

After forty-eight hours had passed the fry became free swimming just like *Betta splendens* so I removed the male and put him into a jump proof jar. This is where the similarity between *Betta splendens* and *Betta imbellis* ended.

(continued)

Spawning Betta Imbellis (continued)

After the male had been removed the fry seemed to become very frightened and gathered into about four or five groups and did one of the weirdest things I have ever seen fry do. They hung to the surface of the water much like new fry hang from the nest. Every once in awhile one would leave his group and go to another.

With splendens I have always fed live baby brine as soon as the male is removed and they always ate with relish. The same program was started with the imbellis and not a single baby brine was eaten. I immediately added mystery snails to clean the tank up and keep it from becoming polluted. For three days I fed baby brine with no sign of any of the fry eating. On the fourth day I noticed the number of fry was getting smaller. Finally, at seven days of age, the few fry that were left started to eat baby brine. You can always tell this by the pinkness that develops in the stomach area. Out of a spawn of about 200 I have managed to save six fry, so far.

After two weeks rest and conditioning of the parents I was determined to try again. I went through the same spawning setup with exactly the same results. This time I was determined to raise more than six fry so I used a trick Ed Wickenheiser told me about.

The day I saw the eggs in the nest, I took the dirtiest filter I had in my tanks, removed the dirty floss and installed it in a gallon of fresh, aged water. By the time the fry were free swimming I had the best culture of infusoria I had ever seen (checked under my cheap microscope). Instead of starting out with baby brine I used the infusoria and I could watch the fry attack them with great zeal. After three days mystery snails were added and I started with just a drop of baby brine. The first day the fry ignored the brine and ate the infusoria but the next day a few pink bellies were showing. I continued feeding both for about ten days, then went with only the brine shrimp. I would venture to say I saved 75% of the fry this way.

The imbellis seem to be much slower growers than the splendens as I have splendens that are two weeks younger and are almost twice the size. At the rate they are growing I would say that they will almost have to be five or six months old before they will be old enough to spawn, compared to four months for splendens.

No third spawn has been tried because the female jumped out of a $\frac{1}{2}$ inch opening in her jar cover and the male will not spawn with any splendens females I have. They all seem too aggressive for him and he hides in the cover I put in for the females. I, therefore think that my spawning of Betta imbellis is finished until some of the fry get large enough to do their thing.

Reprinted from Wet Pet Journal, April, 1976, Downriver Aquarium Society, P.O. Box 125, Taylor, MI. 48180, USA.

easy infusoria

By Bill Kuhlman, N.A.A.

Infusoria are small, usually single-celled, animals which live in water and are barely visible to the human eye without optical help in the form of a hand lens or low power microscope. There are probably hundreds of species of organisms which can be labelled infusorians. Some of these species may be found in lake water, others may be found in the aquarium, some may even be found in drinking water.

Infusorians exist in every single aquarium that you own. Most of us don't even know that they are there, however. To see these small creatures simply take the filter floss out of one of your filters which is getting brown or deep green in color. Let a few drops of water from the floss drip onto a piece of glass. Now hold the glass near a light bulb; move it around in various positions until you can see the small dots swimming around. Those small dots are the infusoria we wish to culture, and eventually have enough of to feed our very small fry.

Infusoria were originally introduced into your aquarium through spores which are carried through the air. These spores eventually found their way into your aquarium and began to multiply there, feeding on the bacteria present in their new environment.

Nearly all of us, at one time or another, spawn fish. Our first success may be the guppy, the convict cichlid, or perhaps the angels in that tank in the living room. At any rate, these fishes may be fed baby brine shrimp or even finely ground flake food when they become free swimming, and grow well. Many other fishes, however, require food which is nearly microscopic in size. Given this properly sized food many fishes are capable of being raised with great success. Obviously, these infusoria we've been talking about fill the bill; yet many people fail to begin infusoria cultures. The end result is that what could have resulted in a successful venture ended in failure - all the fry starved to death.

Maybe you've tried cultures before but gave them up because they smelled up the house or were too much of a problem to keep going. But over the last few weeks I have been asked to give my "secret" for no-work infusoria cultures that don't smell.

For the last two years I had the thought of beginning infusoria cultures. Somehow I always had other things to do, especially when I thought about how much time it would take. This procrastination killed thousands of fry. We lost gourami fry, the fry of gold rams, and a spawn of 500 black skirts, among others. This latter loss impressed upon me the need for a good stock of infusoria. My method is derived from that of Walter Matheson, who had the most beautiful (if infusoria en masse are beautiful) cultures anyone could wish for. I had attempted infusoria cultures previously, but Walter's success was an inspiration.

(cont'd.)

EASY INFUSORIA, cont'd.

And now on to the directions

- 1) Obtain several one gallon wide mouth mayonnaise jars from your local restaurant, or what-ever. Plastic boxes used for shoes also work well.
- 2) Fill the jars with water from an established aquarium.
- 3) Add a 2" square piece of lettuce, shredded, and $\frac{1}{4}$ tsp. of milk.
- 4) Let the jars sit in subdued light for about five days.

At the end of this time you will notice that the initial cloudiness is nearly gone, and in its place are numerous vertical columns of very small white dots (and maybe a few small worms). Believe it or not, this is success! If you set up several jars one, several, or all may look like this. Maybe none will. If the culture was not successful throw it out and start again. If one of the jars does contain infusoria and the rest don't there is no need to despair. Simply take about $\frac{1}{2}$ cup of the good culture and place it in the jar that didn't take. Within a couple days all your jars should be swarming with infusoria.

You will notice that infusoria seem to prefer the upper regions of the jar. This is a help in feeding, as all that is necessary is to lower a soup ladle into the jar and let the lip go just below the water's surface. Capillary action will force those near the surface into the ladle. How much of the culture you feed at one time depends upon the density of the culture and the number of fry to be fed. The fry should have full bellies, but the water should not be fouled.

As you use your culture add fresh water to make up the difference. To keep a good culture going add $\frac{1}{4}$ tsp. of milk whenever the water clears. At 78° this works out to be about every other day. Small bits of lettuce, or very small chunks of potato may also be used. Infusoria cultures are just like fish - they do well with frequent small feedings. This also keeps odor to a minimum.

Some people have several cultures of infusoria on hand at all times. Some of these may be used for raising very small infusoria, while the remainder contain larger species. The best infusoria to use are those which are the right size and which cannot swim faster than the fry which are supposed to eat them. Some rotifers are very rapid swimmers, as are some ciliates.

Infusoria help to keep our tanks clear by consuming bacteria which would otherwise cloud the water, and they are the first food for the fry of many species. I hope that with the above instructions you are able to begin raising infusoria. It is not really that much of a chore. If your attempt is successful I am sure that you will find that there are many species of fish which you can then raise that you may otherwise have never attempted.

VARIOUS COMMON "INFUSORIA"



HELIOZOA



VORTICELLA



ROTATORIA

PARAMECIUM CAUENTUM



BOWL SHOW

JULY 1982

Cichlids

Judge: John Mangan

New World Medium

No Entries

Haplochromis

1st: Hap Kirkii -- Amy Stirman

2nd: Hap Kirkii -- Amy Stirman

Open

1st: Ps. Albino Zebra -- Amy Stirman

2nd: Ps. Cobalt Blue -- Amy Stirman

3rd: Labidochromis Ceuruelus -- Amy Stirman

Egglayer/Livebearers

No Entries

JUNE 1982 Judges: Woody Griffin and Darrell Holman

Cichlids

New World Large

No Entries

Riftlake, non-Mbuna/ex. Hap.

1st: Melanochromis Auratus -- Amy Stirman

2nd: Labidochromis Ceuruelus -- Amy Striman

3rd: Haplochromis Kirkii -- Amy Stirman

Cichlid Open

1st: Ps. Albino -- Amy Stirman

2nd: Ps. Zebra (Red) -- Amy Stirman

3rd: Ps. Zebra -- Amy Stirman

Egglayer/Livebearer

No Entries

BREEDER'S AWARD PROGRAM REPORT

<u>NAME</u>	<u>POINTS</u> (through June, 12, 1982)
Gerry Hoffman	645****
Woody Griffin	525****
Garland Neese	680***
Pat&Maggi Mahoney	575***
Darrell Holman	480***
John Jessup	465***
Vince Edmondson	370***
Ruth Brewer	305***
Jim Hajdics	275**
Art Lembke	165**
The Wagner Family	165**
Kenny Warren	90*
Tom Wright	80*
Gene Aldridge	80*
Thompson Family	80*
Amy Stirman	40
Ken Fisher	30
Leslie Stirman	10

Recent Points Awarded:

Vince Edmondson	Herotilapia multispinosa	10
	Cichlasoma spinosissimum	10
	Mollienesia sphenops	10
	Cichlasoma nigrofasciatum	10
Gerry Hoffman	Heterandria formosa	10
	Aphyosemion marginatum	10
Jim Hajdics	Poecilia reticulata	10
	Amea splendens	10
	Poecilia sphenops	10
	Epiplatys dageti	10
	Aphyosemion calliurum	10
	Rivulus Petit Bourgi	10
	Epiplatys chaperi	10
	Badis badis	15

BAP COMMITTEE MEETING- JULY 11, 1982

Changes to the Rules and Regulations: The Special Request Form is to be used for 15 point fish and above. For 10 point fish the request may be added in the remarks area at the bottom of the breeder's award form.

Category 11- 20 points New World Large Cichlids except as indicated elsewhere

A plaque is to be made for the Grand Master Breeder Award when achieved. For each 100 points above 500, a separate certificate will be awarded. These will be printed up in a 5X7 size. The BAP slide program should be ready for use by other clubs on a rental basis in 1983.



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 the club? _____

Which sub-genus interests you? (guppy, chlid, other) _____

How long do you plan to be in this area? _____

Occupation _____

Membership fees for the Potomac Valley Aquarium Society are:

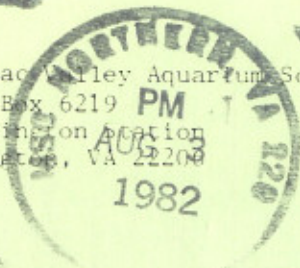
Family	\$10.00	Corresponding	\$5.00
Individual	\$ 7.00	Junior	\$3.00
		(under 18)	

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.

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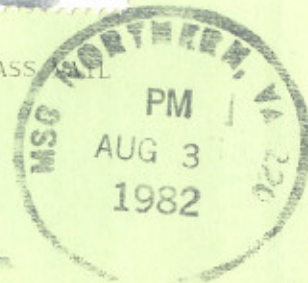
Potomac Valley Aquarum Society
P.O. Box 6219 PM
Shirlington Station
Arlington, VA 22209



Robert Millikan



FIRST CLASS MAIL



JOHN MANGAN
9770 OLEANDER AVENUE
VIENNA VA 22180

1982 MEETING DATES:

JAN. 11	APRIL 12	JULY 12	OCT. 11
FEB. 8	MAY 17	AUG. 9-★	NOV. 15
MAR. 8	JUNE 14	SEPT. 13	DEC. 13

*See
inside*

The August 9, 1982 meeting will be held at the Western Baptist Church, intersection of North Washington Boulevard and Patrick Henry Drive, in Arlington, Virginia.

Meetings start at 8 p.m. Doors open 7:30 p.m. Bowl Show registration, 7:45 p.m. to 8 p.m.