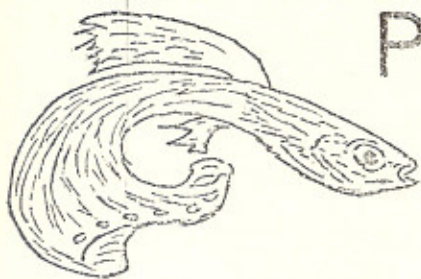


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COVER

A pair of Eettas, male above, female below,
drawn by our artist Catherine DeLucien.



POTOMAC VALLEY AQUARIUM SOCIETY

FROM THE PRESIDENT

Dear Fellow Members:

I hope you like this issue. As you can see there are a number of new features and some style changes which should only enhance our publication. We may even get it out on time!

Our February meeting was most gratifying. A good turn out and lots of fish! Don't forget that we will vote on the new constitution at our March meeting. Please plan to be there.

I've had some bad luck in my fish room and have lost a number of valuable specimens. I've been interested for some time in dwarf cichlids and was dismayed to find all my *Apistogramma reitzigi* dead one day. Nothing else was affected in the tank. Mysterious death is one of the plagues of the hobby. Then to top it off, I lost a beautiful six inch *Haplochromis williamsi*, again, for no visible reason. Such is life.


JOHN E. JESSUP, JR., Ph.D.

EDITORS' NOTE

This is a plea for our members' inputs to Delta Tale since they should be much better than our screening of the literature in search of good but borrowed articles. Many of our members have interesting and educational things to say about all aspects of the hobby. We prefer getting our Society's experience and ideas into print and suggest several ways: write an article and don't worry about whether it is a literary masterpiece; phone us for an interview and leave the writing to us; and find an article which is especially meaningful to you and give it to us with any information you can find from the source on permission for reproduction. Any of our members who are also members or subscribers to specialized aquarium clubs, societies, or magazines could be of particular help. We don't want to miss out on any class of fish, interesting spawning experience, or any other important item of activity by members of our Society. Please help keep the Delta Tale mostly our own and as free from outside help as possible.

Our apologies to Joel Goodman, author of the excellent article, "Building An Aquarium." Inadvertently, his name was omitted in last month's issue, and our special thanks to Dick Baker for suggesting this month's angelfish article. Because of our earlier deadline, "What's Happening at the National Aquarium" with Alan Levitt does not appear this month. Mr. Levitt's column will be resumed in the April issue.

Don and Linda DeRoze

MEMBERSHIP AND THINGS

As the membership chairman, I need two volunteers to serve on the membership committee. The work involved is minimal, consisting mainly of welcoming guests and new members at our monthly meetings. If you are interested, give me a call or see me at the March meeting.

Would you like to subscribe to a "fishy periodical" but don't know where to write? If so, here is a list of publications, which appeared in the January 1973 issue of the Wyoming Aquarium Society Newsletter.

African Aquarist/\$5/Monthly
PO Box 1275
Bloemfontein,
South Africa

The Aquarist & Pondkeeper/\$6/Monthly
The Butts, Half Acre
Brentford, Middlesex
England

Aquarium Hobbyist/\$8/Quarterly
1075 Post Rd.
Riverside, CT 06878

Aquatic Life/\$1.50/8 Issues
6105 Kenwood Ave.
Baltimore, MD 21237

Finchat/\$4/Monthly
PO Box 96
Heidelberg West,
Victoria 3081, Australia

Marine Aquarist/\$4.50/Bimonthly
PO Box 35
Marlboro, MA 01753

Petfish Monthly/\$7.50/Monthly
554 Garratt Ln
London SW 17
England

Salt Water Aquarium/\$4.50/Bimonthly
PO Box 1005 Kendall Br
Miami, FL 33156

Tropical Fish Hobbyist/\$5/Monthly
211 W. Sylvania Ave.
Neptune City, NJ 07753

Aquarium Digest International/\$2/4 issues
21393 Curtis St.
Hayward, CA 94545

Pets/Supplies/Marketing/\$10/Monthly
757 Third Ave.
New York, NY 10017

I subscribe to the AQUARIUM DIGEST INTERNATIONAL and find it very informative. If you have opinions about any of these publications or know of others, let me know and I will put your comments in my column.

The January 1973 issue of the Bulletin of the Advanced Aquarists of the National Capital Area carried a short article about a new

aquarium club in Ohio. The new club was organized at the Chillicothe Correctional Institute, a part of the Ohio prison system. The club has 25 members, however, only 10 have tanks and fish. The CCI Aquarium Club is in need of equipment, fish and reading material. If you have any books or magazines or even extra equipment or supplies, why don't you send the material to the CCI Aquarium Club, PO Box 5500, Chillicothe, Ohio 45601. I know anything you send will be appreciated.

Memberships that expire in March are as follows: COLEMAN, J; GERGUADY, A.V.; and JOHNSON, J. & K. Please fill out the membership application and bring it with your dues to the March meeting or mail both to P. V. A. S., PO Box 6067, Arlington, VA 22206.

The membership cards have been received and are available at the monthly meetings. If you haven't received your card, please see me at the next meeting.

From the WELCOME CORNER this month, I am happy to greet five new members, two raise guppies and three specialize in cichlids.

JAMES TOWNSEND is a new corresponding member from Staten Island, New York. Jim specializes in guppies, specifically reds, cobras, and multis. He has 6 tanks and a total of 209 fish, of which 130 are show quality. Jim is 14 years old, is in the 7th grade and has been breeding guppies for seven years.

LOREN R. WILSON is our other new guppy breeder. He has 15 tanks and has been in the hobby for nine months. Loren is very interested in showing his fish so you guppy breeders better watch out. Loren works for FORD as an automotive quality control specialist and lives in Springfield.

LINDA N. DUA has been in the hobby three years and currently raises angles, silver dollars and gouramis. She has one tank and has spawned guppies and bettas. Linda is a student and resides in Arlington.

BILL and VICTORIA LONG have been in the hobby a little over one year and have four tanks. They raise fish in the Cichlidae, Cyprinodontidae and Anabontidae families and have spawned Kribensis and red swordtails. The Long's live in Riverdale, MD and Bill works for HEW.

TOM JONES crosses the lines of the two major PVAS specialties, as he raises both guppies and cichlids. Tom, however, is favoring the cichlid family, especially the dwarf varieties. Tom has been involved

in the hobby for 2½ years and is now managing six tanks. He has spawned kribensis, bettas and several varieties of livebearers. Tom lives in Hyattsville, MD and works for the telephone company.

Again, a big HELLO to all our new members. Let's make these people welcome by helping them with their "fishy" problems.

FLASH - I just received information about the 1973 Mid Atlantic "All Species" Tropical Fish Show. The show will be held on May 4-5 and 6 at the Cherry Hill Mall in Cherry Hill, New Jersey. More information next month, but for now, mark the dates on your calendar and see me at the next meeting for entry blanks.

That's it for this month. Join us at the March meeting and bring a friend.

DICK BAKER

The March meeting of the Guppy Club and the Cichlid Club will be at the following homes:

Guppy Club

March 23, 1973 at 8:00pm
John Wolcott's
13454 Yorktown Drive
Bowie, Md.
262-4213

Cichlid Club

March 21, 1973 at 8:00pm
Chuck & Genny Story's
482 N. Owen Street
Alexandria, VA
370-3593

Please call if you need directions.

SECRETARY'S LETTER

After the introduction of several visitors to our meeting February 12, Dr. Jessup explained to the membership the present situation of the Delta Tale. Because of the lack of original articles of sufficient number to warrant such a publication, it will be necessary to change our format to that of a quarterly magazine with merely a newsletter each month--unless this situation is changed! There is much valuable information stored away in the heads of our many knowledgeable members, but this information fails to reach those others who could benefit from it. We need more original material if we are to improve our club and our magazine. Don and I have volunteered to take over the editorship of the Delta Tale, but we must have your 100% support. Morris MacGregor and Sue O'Meara upgraded the Delta Tale considerably, but we as a club left most all the work to them alone. Let's hope we haven't turned these two fine people off completely and that they will continue to lend their experience to our club.

All of you received your copy of the Constitution and proposed changes in your February Delta Tale. There were no additional changes from the floor at this meeting. Please fill out and sign the ballot on the next page and mail to the corresponding secretary, Dick Baker, at the address below.

Gene Aldridge and Sue O'Meara just returned from the meeting of the South Eastern Aquarium Society in Memphis. Gene gave a brief report on the various workshops. We hope to get more elaborate reports from both of them so the information they received will be passed on to all of us.

Although our monthly attendance has been increasing, some of our older members haven't been seen around for a while. If you are one of these, may I say, come on back-- you are missed! You'd be surprised at how much larger our bowl shows have become. There were 89 entries this month! It's fun to learn new fish as well as see what our fellow members have been working on. Keep it up!

Linda DeRoze
Recording Secretary

BALLOT FOR THE CONSTITUTION

I hereby vote for against the draft Constitution
for the Society which was mailed with the February, 1973
Delta Tale.

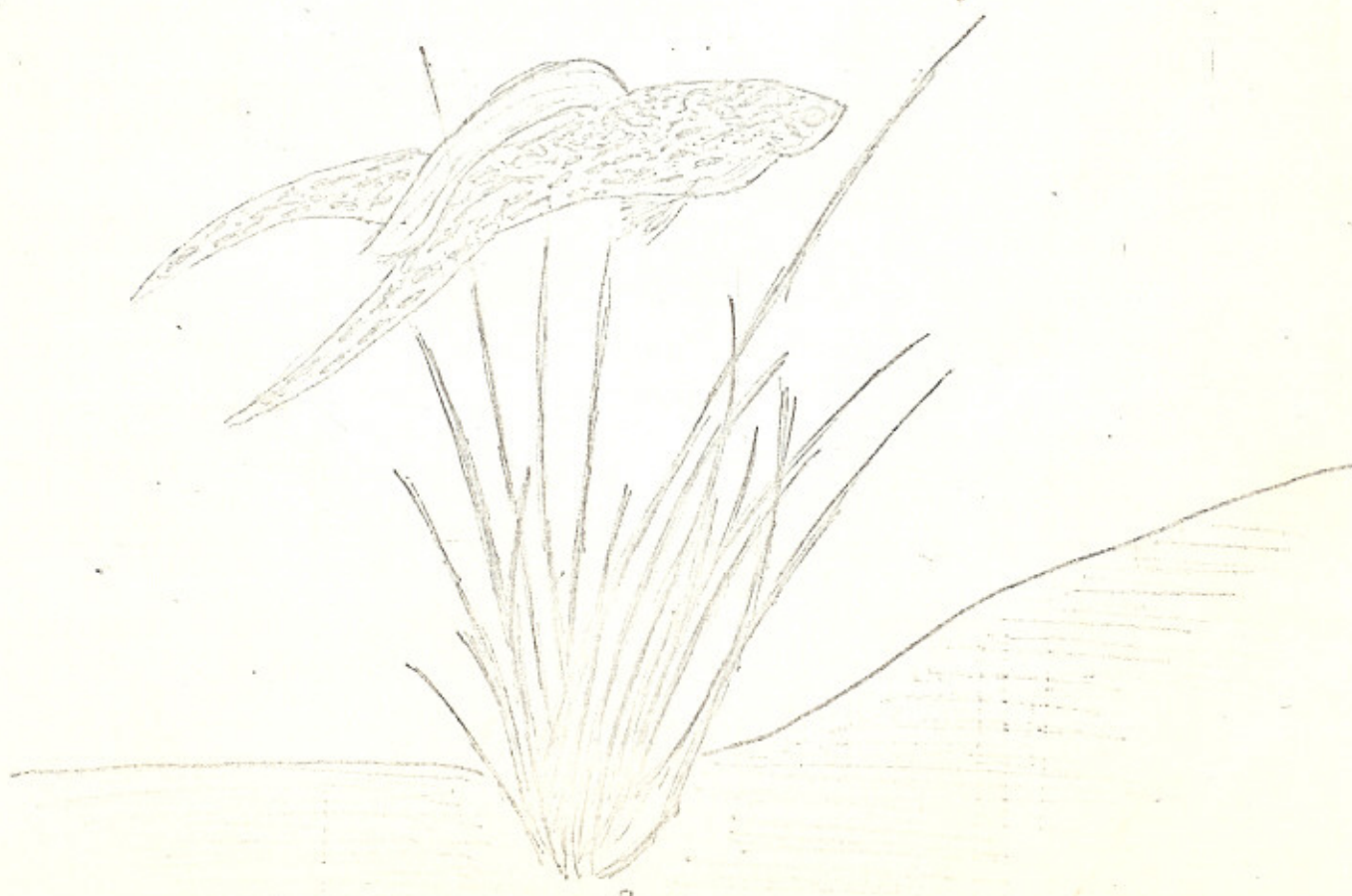
Check if
family
membership

Signed

Date

Mail ballot to: Richard Baker
Apt 101
8557 Richmond Highway
Alexandria, Va. 22309

CUT HERE



POTOMAC VALLEY AQUARIUM SOCIETY

TABLE SHOW RESULTS & STANDINGS

FEBRUARY 1973

★ <u>FANCY GUPPY</u>	<u>1st</u>	<u>2nd</u>	<u>3rd</u>
a. H/B AOC	SERGEANT	WOLCOTT	SERGEANT
b. Female	SERGEANT	SERGEANT	WALSH
c. AOC	WALSH	POULSEN	LENZEN
★ <u>CICHLIDS</u>			
a. Cent & So (Medium)	DeROZE, D.	HARDY, CARL	DeROZE, D.
b. Riftlake Breeding Pairs	GOODMAN	JESSUP, JN	JESSUP, JN
c. Other	SPRAGUE	JESSUP, JN	SPRAGUE
★ <u>EGGLAYER/LIVEBEARER</u>			
a. Barbs	HIRSCHMAN, A.	PETTINGILL	DeROZE, D.
b. Anabantids	SHIFLETTE, A.	GOODMAN	HIRSCHMAN, A.
c. Other	HIRSCHMAN, A.	PETTINGILL	STORY


POINT COUNT

<u>GUPPY</u> [37]	<u>February</u>	<u>QTR</u>	<u>ANN'L</u>	<u>EGGLAYER/ LIVEBEARER</u> [26]	<u>FEBRUARY</u>	<u>QTR</u>	<u>ANN'L</u>
♠ Sergeant, P&G	14	19	19	♠ Hirschman, A.	11	20	20
Walsh	9	16	16	Shiflette, D.	5	14	14
Wolcott	7	15	15	Shiflette, A.	7	13	13
Shiflette, N	5	12	12	Jessup, June	-	8	8
Poulsen, W	7	10	10	Pettingill	7	7	7
Raab	2	9	9	DeRoze, D.	4	4	4
Melnick, A	5	8	8	Goodman	4	4	4
Lenzen	4	4	4	Hardy, Don	1	4	4
				Poulsen	-	2	2
HIRSCHMAN, E & RUSHTON	1 Each			Rushton	2	2	2
				Story	2	2	2
<u>CICHLIDS</u> [26]				HARDY, DAN; WHITTMAN	1 Each		
♠ Jessup, JN	10	23	23				
DeRoze, D	8	13	13				
Hardy, Carl	7	12	12				
Hirschman, E.	3	11	11				
Shiflette, J	3	11	11				
Sprague	6	6	6				
Goodman	4	4	4				
Story	2	2	2				

ALDRIDGE; HARDY, B; MELNICK, S; AND
LENZEN 1 each



The competition at our monthly shows has
really improved. Keep up the good work -
SHOW YOUR FISH

 MARCH 12

GUPPY: Red, 5 Matched Males, AOC

CICHLIDS: Cent & So Am (Dwarf), Tilapia,
Other

EGGLAYER/LIVEBEARER: Livebearers (other
than Guppies), Killifish, Other

THE AFRICAN CICHLIDS OF LAKE MALAWI

By Don DeRoze

In the last few years a class of fish has taken over the interest of a small group of tropical fish hobbyists. These fish are the Lake Malawi (Nyasa) cichlids. The popularity of this group is spreading and there are several good reasons. These fish have very distinct personality and intelligence; they are not just pretty, peaceful or easy to raise in aquariums.

Lake Malawi cichlids can have all sorts of beautiful colors and markings, but they are not as vivid generally as the salt water fishes. There are basic blues like the *Pseudotropheus zebra*, *P. elongatus*, *Labeotropheus fuelleborni*, *L. trewavasae*, *Cynotilapia afra* and basic yellows like *P. tropheops* and *P. auratus*. However no basic color is really a good description, as there always are several other colors and shades of the basic color in any species. In some species the male is the more colorful fish but in other species both male and female can be very colorful. In any one species it is also possible to find unusual colors or markings. There are two new species that are unusually beautiful. The one is called "round-nose auratus," with the male being deep blue and the female a combination of browns, yellows and blues. The other is called "gold auratus," with the male varying from orange-black to blue-black and the female a bright orange.

The cichlids of Lake Malawi cannot be mixed in a community with other classes of fish for two main reasons. First, they require unique conditions--very hard water (produced from special rocks like tufa rock or artificially); cool water (75°-78°F), alkaline water of about 8 pH, and good aeration. We use about 20 lb. of tufa rock for a 50 gallon tank and about one heaping teaspoon of baking soda per four gallons of water to get the required hardness and alkalinity. Some salt may also be used, from zero to one teaspoon per gallon. We prefer very little or no salt as salt complicates maintenance (corrosion problems) and rules out certain scavengers. Second, these cichlids are too aggressive and territorial for most other community fish. They get along best in a semi-crowded community of mixed Lake Malawi species with or without scavengers like cats or loaches. We have found it best to have only one male and one or two females of a species in a community. The minimum tank size is about 30 gallons, but the best is 50-55 gallons or above. A good density is 12-15 fish in 50 gallons or about six fish in 30 gallons. There will be more territorial aggressive fighting with fewer fish and less likli-

hood of spawning and fun-play (rearranging of gravel, pecking-order rivalries) with more fish. The tank should have lots of hiding places with plants and rocks since this simulates the caves and shallow rocky conditions these fish have in Africa.

A good group of Lake Malawi cichlids to start with are *P. microstoma*, *P. auratus*, *P. tropheops*, and *P. zebra*. They are readily available and among the easier of the group to keep healthy. They are also less aggressive than some others in the group. *P. elongatus* and *C. afra* are a bit aggressive unless raised from young fish in an established community. *L. fuelleborni* and *L. trewavasae* are our favorites, but are more delicate than most others and require special high vegetation/low protein foods. All species do very well on the conditioning vegetable variety of TetraMin. They all need greens in the diet, but especially *L. fuelleborni* and *L. trewavasae*. We blend and freeze a high protein diet (fish, beef liver, shrimp, scallops and spinach) for all except *L. fuelleborni* and *L. trewavasae* and a high vegetable diet (mostly spinach with shrimp) for *L. fuelleborni* and *L. trewavasae*. If possible, the best feeding schedule is TetraMin two to three times daily and prepared foods (like the high protein and vegetable diets) one to two times daily.

It may seem that the Lake Malawi cichlids require too much care to be reasonable. I guess this is true for some, but let me give you an idea of how easy it can be. We clean a 50 gallon tank in about 40 minutes every week. The most important step for these fish in the weekly cleaning cycle is changing about 1/3 of the water. These fish need clean water for good health. The feedings take time, but we don't count that as it is just part of the fun of watching the fish. I guess we enjoy watching the capers of these fun fish more than most TV shows. We can blend both special foods in about three hours and then freeze them in ice cube trays for subsequent feeding with a standard kitchen shredder. This three hour work load will keep us in food for about six months.

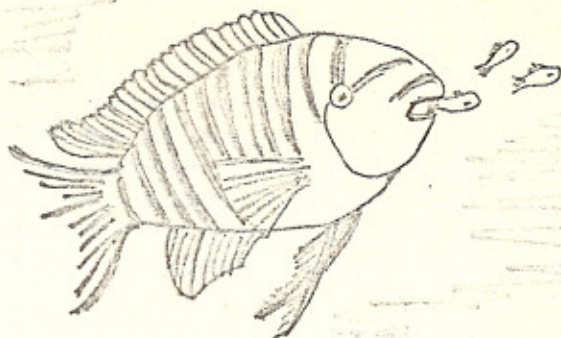
One of the most interesting aspects of the Lake Malawi cichlids is the spawning cycle. A male will twitch at a female and pursue her. If she is ready and willing, she will stop running away eventually and will join the male in pre-spawning activity which includes making a nest for the actual spawning. Most nests consist of holes dug in the gravel to get to the tank bottom. She will then drop eggs, he will fertilize them, and then she will gather them up in her mouth. The spawning will take about 15 minutes. She will not eat and this, plus a lump in her throat, provide the signals you need to get her netted out into a

separate small tank for about 20-30 days for the brooding period. She should not be fed during this period and only requires good aeration and the same type of water as before. Remember to continue giving her 1/3 clean water on a weekly basis. Her tank should have rocks or low plants and gravel since she will build another nest into which she will spit out her babies. The babies will number anywhere from a few up to about 50, depending upon her age and size as well as her species. She can be fed after the babies have emerged and the babies take baby brine shrimp. She will take several days to let all the babies out; the first day or two you may see only a small part of the total number of babies, so don't be disappointed by the small number at first. When scared or at night, the mother will probably take the babies back into her mouth. About a week or so from the first baby's appearance, she will probably lose interest in the babies. When she can be decoyed from her young for food, it is best to net her from the tank and raise them separately. She should be carefully conditioned with food because she is in a weakened state after the long 20-30 day fast. Sometimes it is best to put her in a separate small tank for a few weeks to build her up before she rejoins the community. She will be taken back into the community from which she spawned much more readily than a newly introduced stranger. We prefer keeping a female who has spawned away from the male for over a month after the end of the brooding period. This can be done by separate tanks or by having several females of the species for the one male in the community tank. This will allow the mother to ignore or hide from the male until she is physically ready again, while the male can occupy himself with other females.

If you are interested in getting started with Lake Malawi cichlids, there are a few good tips which we have picked up as beginners in the last year. First, get young fish from native breeders; we have a number of them in our society. These young fish are free of parasites which can come with imported larger wild fish from Africa. They will stand a much better chance of survival than the imports. If you are attracted to the larger imports, treat them right away with tetracycline to kill off any parasites or disease. The riskiest larger imports are *L. fuelleborni* and *L. trewavasae*.

We have found no group of fish more enjoyable, rewarding, and challenging than the cichlids of Lake Malawi and hope to have stimulated some interest in them through this article. This group will have many new surprise additions in the future, but for the species that are relatively well known now there are still many unanswered questions and new discoveries. We have never had such an interesting experience

in the hobby as in our recent spawning of the new "round nose auratus". In closing, as the new editors of the Delta Tale, we would like to get lots of articles from our membership on their experiences with fish. Our own experiences should beat use of articles borrowed from others.



L. fuelleborni

THE EVER POPULAR ANGELFISH

By Alicejean Eman

Reprinted from the Water Log, Southplains Aquarium Society, Lubbock, Texas

This majestic South American river fish is one of the most popular fish among hobbyists. Second--if that--only to the guppy. Almost every hobbyist has or has had one or more of these graceful "swans" in their aquariums. Even those not involved with tropical fish will immediately notice and admire these lovely, graceful fish.

There are three kinds of angelfish recognized by the scientists: the *Pterophyllum scalare*, the largest of the group and once thought to be the only angelfish; the *P. eimekei* is somewhat smaller than the *P. scalare*; and *P. altum*, the smallest angelfish, which is seldom bred. Along with the scientific names, we are also aware of the "sports" or one time freaks of nature that have been cultivated into recognition. Among these are the black, the veiltail, blacklace, black veiltail angelfish.

Description of the angelfish is hardly necessary, as almost everyone has seen them. Their bodies are disc shaped with very high dorsal and anal fins, almost like a saucer with wings. The ventrals are long and narrow extending downward, similar to an old oriental priest's mustache.

Almost everyone who owns angelfish wants to try their hand at breeding these lovely fish. It is indeed an exciting and rewarding experience, even if not always successful. Careful attention should be paid to the purchasing of parent stock. Be careful of the bargain fish, there may be a reason for the cheaper price!! As there is no reliable method of sexing either young or mature angelfish, you should buy several young fish to raise in the hope at least two will pair off and that those two are a male and a female. Choose six to twelve young specimens with good color, good fin development and overall vitality.

The common silver angelfish are more apt to breed than the fancy strains. So, to avoid disappointment, the first attempt at breeding, try silvers, then apply your knowledge to an attempt with a fancier breed. The fancier breeds are harder to raise and not nearly so eager about pairing off for breeding.

Having purchased your potential parent stock, you now have a six to eight month period to get acquainted with the habits and personality of your angelfish while you raise them to maturity.

Angelfish grow to size of four to six inches in length and eight to eleven inches in height. Because these fish grow to such sizes, it is important that the owner provide them with a large enough tank. It is particularly important that the tank be deep enough to provide adequate room for full development of the fins.

Angelfish don't seem to be too picky about the hardness of the water in their tanks, but you should avoid extremely hard or soft water. A pH of 6.8 is ideal for the breeding of angelfish. They seem to thrive on partial water changes about once a week and replace it with fresh water. The temperature in our tanks is kept in the high 70's, 82° for breeding.

Angelfish are a peaceful fish when kept with fish their own size. Angelfish prefer living food, smaller fish are apt to disappear much to the distress of the owner. Our angelfish are fed frozen brine shrimp and occasional treats of live brine shrimp. We also keep several live bearers in the tank so that they can have some living baby fish, even if they are alive only a few minutes).

About six to eight months after you have purchased your parent stock, you will notice a general restlessness among your almost grown fish. Fights at this time are common. Soon you will notice two fish are fighting off the

others instead of everyone fighting alone.

On close observation, you will notice these two stay together most of the time. One day they will begin to establish their own territory. Woe be to the other fishes who invade their "home". Now is the time to set them up in their own private apartment.

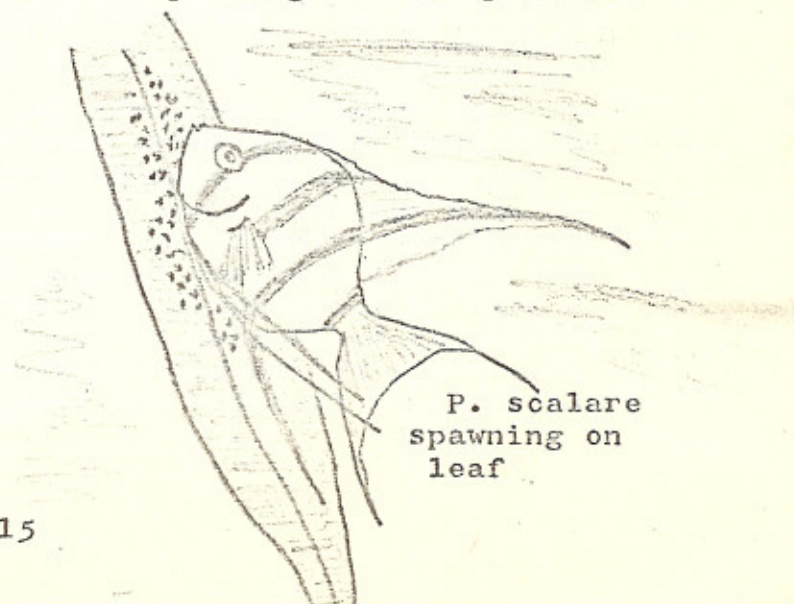
The breeding tank should be at least ten gallons, preferably larger, depending on the size of your fish. The water should be slightly acid, a pH of 6.8. The tank should be bare, except for a potted amazon sword plant (or other large leafed plant) and a piece of slate or colored sheet of plastic placed at a slight angle to the side of the aquarium. This gives the prospective parents a choice of spawning places.

Once your pair is set up, patience and continued feeding of the best foods available (live adult brine shrimp and baby fishes) is necessary. Keep the temperature around 80° to 82° for best results in breeding. Lower temperatures will slow down the breeding process. At 82° angelfish will spawn every two to three weeks.

The first sign of breeding is the appearance of the breeding tube in the female a day or two before the actual spawning. The next sign is the careful cleaning of the spawning spot. With their wide sucker type lips they will peck away at the spawning area. The pair will spend hours on end picking at the minute specks which are invisible to us, but apparently visible to the parents. The area must be perfect, according to the parent's standards, before the actual spawning will take place.

There is no one time of the day that angelfish prefer to lay their eggs. They will spawn anytime from dawn to dusk, anytime the parents feel the spawning area is perfect.

It is best not to disturb the angelfish once the egg laying has begun, as they are apt to consume the eggs out of fright. The female will begin by laying a string of eggs on the selected area. She then backs off and watches the male while he swims over the eggs fertilizing them. This process is repeated until



P. scalare
spawning on
leaf

100 to 600 eggs are laid and fertilized.

The parents exercise a great deal of parental care. They take turns fanning the eggs and picking out the bad ones. There are no words to describe the loving attention these fish give their eggs. The water around them is never still. No food or foreign substance is permitted near them. Other fish, if spawned in a community tank, are fought off valiantly.

After two or three days the eggs start to hatch. You will have a wiggling mass of what looks like jello. On close observation, you will see a tiny hair-fine tail and two black spots that are eyes. At this point the young are transported by mouth from one location to another. This lasts for about five more days, until the young begin to swim. Then the parents keep their young together in a school. Stragglers are not tolerated. The stragglers are caught up in the parents mouths and spat into the school. However, if the same ones repeatedly disobey, they are eaten by the parents. That's one way of solving the delinquency problem.

Witnessing this parental activity is exciting, but not without its hazards. If the parents feel that the eggs or young are in danger, they will eat them. Also, sometimes fish parents, like people, disagree on how to raise their young. In the fish world, as in the people world, the young wind up losers, the parent fish eat them.

To avoid losing the young to the parents try hatching the eggs artificially. After the parents have laid their eggs, remove them from the tank into a clean one or two gallon jar filled with water from the breeding tank. Insert an air stone so that the bubbles pass close to the eggs, but do not touch them. At this point you can add about ten to twenty drops methylene blue. I have hatched the eggs both with and without the methylene blue with about the same results.

In about a week, the fry will be free swimmers and will have used up their yolk sacs. At this point I begin feeding frozen baby brine shrimp about three times a day. After a couple of days I remove the fry to a larger tank containing slightly aged water with a pH of 6.8. For about two weeks I continue feeding frozen baby brine three times a day. I feed enough at each feeding so the young fry are literally surrounded by the shrimp. Then I start adding some adult frozen brine shrimp, thus providing a variety of sizes of food for the young to choose from.

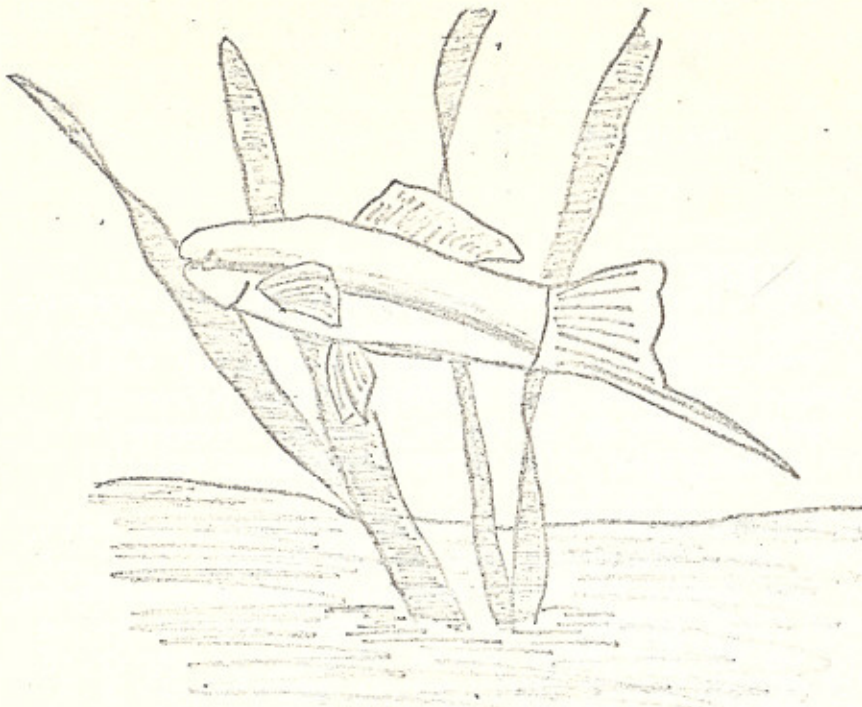
The change in the young angelfish is one of the most fascinating miracles in fishdom. The eggs suddenly develop tails and eyes. Then they become free swimming little fish. By two weeks of age, they look like most other fry. But by three weeks they are already beginning to look like angelfish. With large amounts of food and room, they are about the size of a quarter and ready for sale by the time they are ten weeks old.

Comments from the editors

Our survey of the more recent angelfish classification leads to the following clarification: *Pterophyllum scalare*, the common angel, *Pterophyllum dumerilii*, a similar but differently patterned species, and *Pterophyllum altum*, a reputedly larger species which is rarely seen. *Pterophyllum eimekei* is synonymous with *Pterophyllum scalare*.

From our own experiences of at least a couple of dozen angel spawnings, we have observed our pairs laying eggs as often as eight to ten days, if the parents were not allowed to raise them. Our Naja golds, however, have proved to be excellent parents, so we let them raise their own in which case they wouldn't spawn until their young were about a month old, and we had to remove the fry to larger quarters. All of our spawnings occurred from noon to four o'clock. If the parents are left to raise their own, don't add anything to the water, but if raised artificially, the addition of about ten drops of methylene blue per gallon was necessary to avoid total fungusing of the eggs, plus the immediate removal of any white (unfertilized) eggs so they don't fungus and contaminate the good eggs. This is perhaps the most important step. We used the sharp point of a knife to loosen fungused eggs and a turkey baster or eye dropper to remove them from the tank bottom

--Don and Linda



THE
CHALLENGE
OF
LIVE
BEARERS

By Brian Newman
Reprinted from
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Are you one of the many aquarists who regard live-bearers as active, colorful additions to your aquarium, but feel that anyone can spawn live-bearers? If so, perhaps you have been overlooking a challenge.

The often heard saying that anyone can spawn live-bearers is true to a great extent. Even in large community tanks, the males and females seem to get together without any degree of difficulty and ensure that the species is perpetuated, which is something which cannot be said for many egg-laying species which are difficult to breed in captivity. So, you may well ask, how can fish which multiply so readily present a challenge to the aquarist?

The challenge presented--is not to produce a spawn as is the case with most egg-layers, but to produce a spawn which meets with predetermined objectives as to color, finnage, etc. It is in this area that the spawning of live-bearers can be challenging and rewarding, or frustrating.

The process by which the breeding objectives are determined and then carried out is generally known as "SELECTIVE BREEDING".

There are a great many examples of selective breeding accomplishments swimming in our aquariums today, most of which we seem to take for granted. The best example of

what can be accomplished by selective breeding is probably the Swordtail. The basic coloration of a wild Swordtail is a bluish green. The many other varieties which we see today (red, black, spotted, gold, albino, wagtail, Hi-Fin, Lyretail, and many combinations thereof) have all been developed by intensive selective breeding by aquarists who have recognized a challenge and have accepted it.

Admittedly, although there may not be too many more color varieties which can be developed, today's aquarist can still set up a breeding program which, if properly carried out, will provide him with attractive fish of which he can be justifiably proud, as he will have basically done it by himself (with a little help from the fish, of course). Then, too, if you should happen to decide upon a variation of a particular fish which is not too plentiful in your area, you should also be able to reap a financial reward for your investment and patience.

Now, let's take a look at some of the general characteristics of the fish we have been discussing.

To begin with, unlike most egg-layers, live-bearers are not too fussy about their water conditions, as long as the water is clean and the tank is not over-crowded. A good overall temperature for maintaining and breeding live-bearers is 75 degrees. Food is not a problem as one does not usually have to condition the breeding fishes to the same extent as is necessary with egg-layers. Most prepared foods are suitable, although occasional feedings of live and/or frozen foods will certainly help keep the fish in the best of condition.

Unlike the egg-laying species, whose eggs must leave the body of the female before they can be fertilized, the process of fertilization takes place within the body of the female livebearer. The young then develop within the female and after a gestation period of approximately 28 days, the free swimming young are born.

So far, things sound very simple, so, perhaps now is the time to mention a peculiar characteristic of live-bearers which has undoubtedly caused many an aquarist to turn prematurely bald. The female has the annoying ability to retain the sperm of the male within her body for an extended period of time. This results in as many as five or six broods of young being born from a single insemination. Therefore, anyone who is contemplating the development of a particular strain of fish must be very careful that the females he is using for breeding purposes have not come into contact with undesirable males or else he is liable to end

up with a large number of unwanted fish.

Now that the challenge has been presented, let's take a look at how to meet it. First of all, we must decide upon what characteristics we wish to develop and/or establish. Suppose we decide to breed an aquarium full of HiFin Platies. To begin with, we must find at least one fish which has the FiFin. If we can find a pair, the task is relatively simple, as all we have to do is ensure that the HiFin female does not come in contact with any non-HiFin male and should therefore all be HiFin. However, if a pair cannot be obtained, we have a little bit of work to do before the tankful of platies can be proudly displayed. So, let us assume that we have managed to obtain a HiFin male Platy.

STEP ONE

The HiFin male is mated to a regular finned female... preferably one which has never been in contact with a male before. The young from this mating are placed in a tank by themselves and their development is watched carefully. Frequent culling (the removal and disposal of any deformed, slow growing, or fish with poor color) must be practised. As soon as the fish can be sexed, the males and females must be transferred to separate tanks. This will ensure that the females do not come into contact with any males and will provide a stock of virgin females for future breeding.

STEP TWO

When the young fish have reached breeding age and size (approximately six months) the best of the females should be placed with her father. The initial fertilization may take a little longer than normal, but, in most cases, will be accomplished without any great degree of difficulty. After the normal gestation period, the second generation of fish will be born. These fish should then be raised, sexed, separated, and culled as the first brood was. The process of culling should be even more ruthless than before, eliminating all but the best of the bunch.

STEP THREE

As the second generation of young fish attain maturity, the best of the females (the one exhibiting the HiFin most evidently) is placed with the original male. If the original male is no longer capable of fathering another batch of young, a male from the second generation may be used, providing, of course, that he exhibits the desired finnage.

The resultant fry from this third mating should be primarily HiFinned, and it should then be fairly simple to keep the strain pure by keeping out all other Platies but those with HiFins.

While the foregoing steps seem simple enough (they really are)--they do require quite a bit of work and a great deal of patience. But, for anyone who wished to attempt this, the resulting fish can be very beautiful and you will have a tremendous feeling of accomplishment.

TO SUMMARIZE, THE BASIC REQUIREMENTS ARE:

- (1) At least one parent with the desired characteristics.
- (2) A certain amount of tank space. Probably a five gallon tank for the original mating and several in the 7½ to 15 gallon range for raising the broods of young.
- (3) Intensive culling.
- (4) Patience and determination.

If you can meet all of the basic requirements and the abovementioned steps are followed, anyone can spawn live-bearers the way they want them, which is quite different from just spawning live-bearers!!!!

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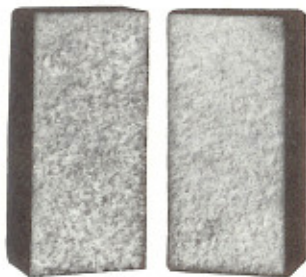
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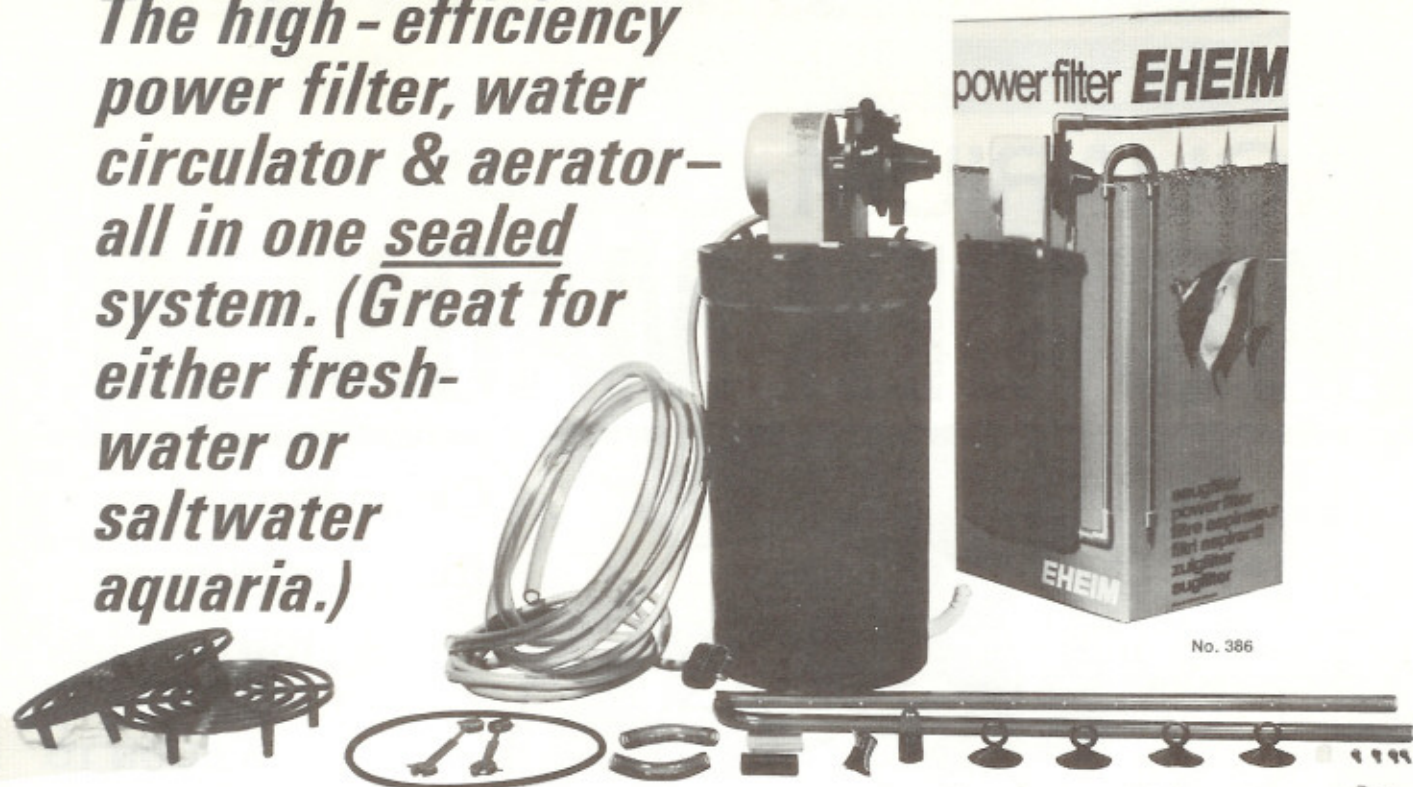
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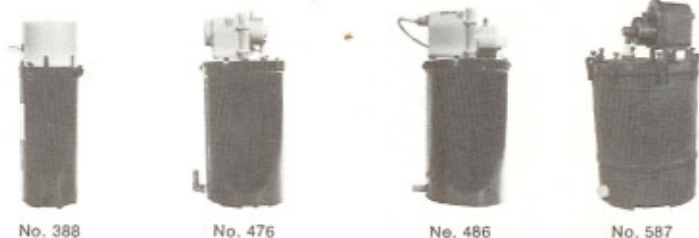
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