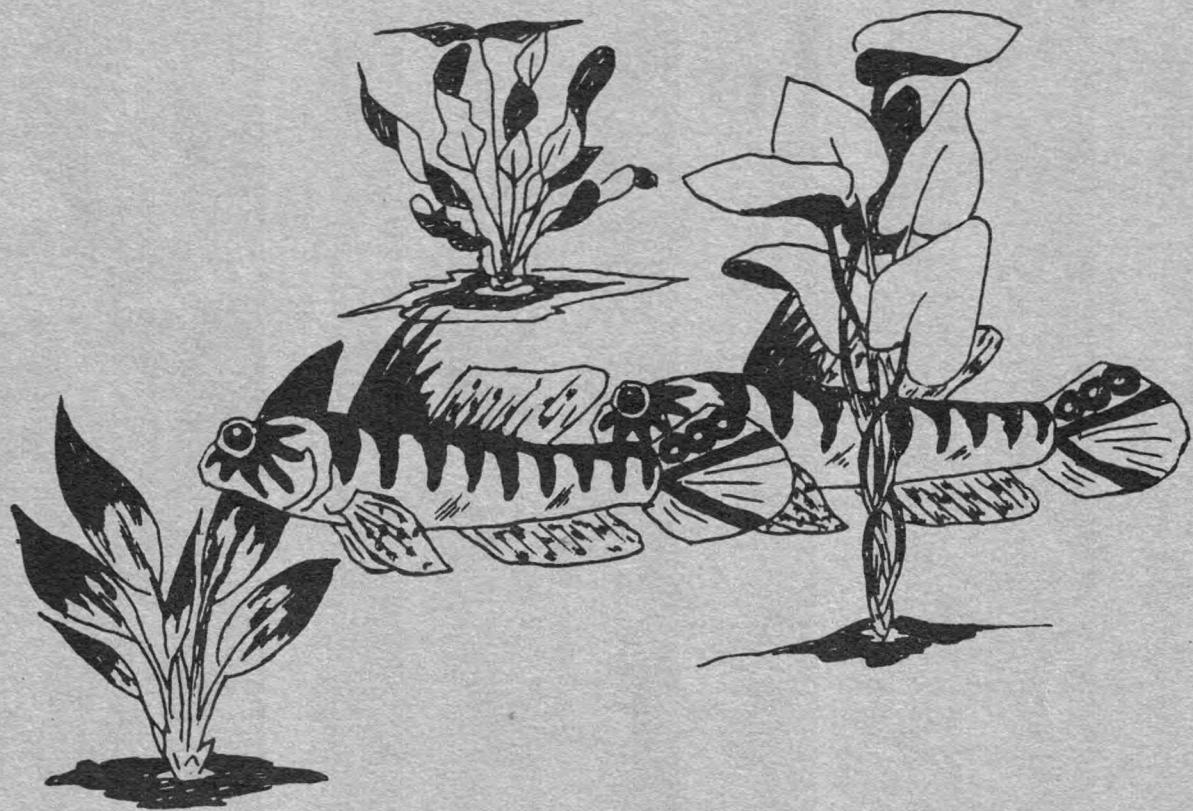


Nov., 1977

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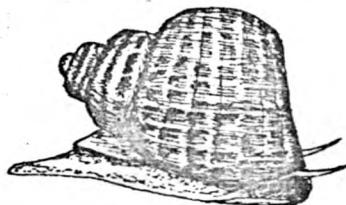
Collating

Bogackis, Hopfingers, Marshalls, Willemins,
Sue Kuster, Frank Simmons & Ralph Wilhelm

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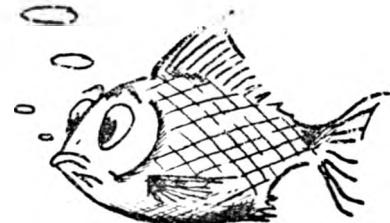
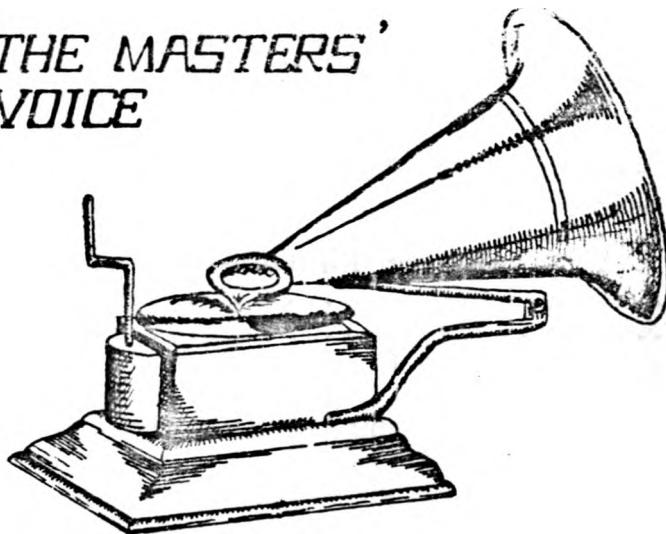
The Darter is published monthly by the Missouri Aquarium Society, Inc. at 1124 No. Kirkwood Rd., Kirkwood, MO 63122. Controlled Circulation

Postage paid at St. Louis, Missouri

Opinions expressed by the contributors are their own and are not necessarily those of the journal.

Opinions expressed by the contributors are their own and reflect the opinions of the Missouri Aquarium Society, Inc.

THE MASTERS' VOICE



PRESIDENT'S MESSAGE

I hope you all enjoyed the Super Bowl Show at our October Meeting as I did. There were only 60% as many entries this year as there were last year, but the fish that were brought for the most part were outstanding.

At the Executive Council meeting last month, a long discussion was conducted about our low attendance at the monthly meetings. A few new ideas will be started shortly in an attempt to increase our membership. I would hope that all of our members will try to bring a friend to our meetings.

We would like to remind all the people with fish in the Fish Raising Contest that the first judging of your fish will be at the November meeting (Good Luck).

I am looking forward to seeing all of you at the November meeting,
BRING A FRIEND.

Sincerely yours,

Dave Masters - President

NOVEMBER MEETING NOTICE

Time and Date: 8:15 P.M., Wednesday, November 9th

Place: Prudential Savings & Loan Community Room,
6th Floor, 8020 Forsyth, Clayton, MO.
Park in garage - lower level.

Bowl Show: Platies or Moons
Guppies - 2 Matched Males
Open

Feature Event: Fish Raising Contest entries will be
judged for the first time at this month's
meeting.

Program: AFRICAN CICHLIDS & FISH PHOTOGRAPHY:
HOMER ARMENT, nationally recognized expert
on both subjects, will present slides and
discuss fish photography with us. Don't
miss this opportunity to see some really
beautiful fish slides, and pick up some
tips on how to photograph your own fish!

COMING EVENTS

November 9th - M.A.S.I. General Meeting - Prudential - 8:15 P.M.
19th - Executive Council Meeting - Simmons' - 8:15 P.M.

December 4th - M.A.S.I. Auction - Holiday Inn North - 1:30 P.M.
14th - M.A.S.I. General Meeting - Prudential - 8:15 P.M.
17th - Christmas Party - Pozaric's

January 11th - M.A.S.I. General Meeting - Prudential - 8:15 P.M.
21st - Executive Council Meeting - Powell's - 8:15 P.M.

July - 1978 - M.A.S.I. will host the 1978 American Cichlid
Association Convention on July 28, 29 and 30,
1978, at the Red Carpet Inn, St. Louis, MO.
Watch future issues of The Darter for further
information!

October 12, 1977
GENERAL MEETING MINUTES

The meeting was called to order by President - Dave Masters at 8:31 P.M.

Dave called for approval of the last month's meeting minutes, and also for the reading of the treasurer's report. Both were approved.

Guest were introduced and new members were also introduced.

Dave gave a report about the Show Committee meeting that was held last week. He announced that the rules and classes had been set-up and that speakers had been picked and will be notified. The next meeting will be one week after the next general meeting at the Audrains home.

New Business - Carol Willemin said that in next months Darter or at the next meeting there will be a questionnaire about the bowl show - be sure to watch for it.

There was no old business.

The Executive Council meeting will be held at the Home of Ken Keim on October 21st.

Attendance prizes were given out while the Super Bowl judging continued.

Rich Smith has agreed to help with the library books.

It was Ginny Macrum birthday and we all sang Happy Birthday to her.

While the judging was continuing there was an open discussion from the members and guest to a panel selected for fish related interest,

Meeting was adjourned at 9:10 P.M.

Respectfully submitted,

Secretary

Executive Council Meeting Minutes

The Executive Council meeting was held on October 22, 1977 at the home of Ken and Laura Keim. Council members present were Dave Masters, Paul Powell, Rich Crabtree, Ken Keim and Carol Willemin. Visitors present were Joe Willemin, Barb Powell and Laura Keim. Dave Masters, President, called the meeting to order at 8:31 P.M.

The secretary's minutes were approved as printed in The Darter.

The treasurer's report was approved as read.

Paul Powell - Show Committee - The super bowl went smoothly, the new classes which were added this year were approved of by both the public and the judges. We are in the process of obtaining our speakers for the annual workshop - the final decisions have not been made. A revised list of the classes for the annual show will appear in the Darter at a later date. The council voted and approved not to have a raffle this coming year.

Rich Crabtree - Breeder Award - Rich brought the revised application sheet. Paul Powell, 2nd by Carol Willemin that Rich be authorized to have 100 sheets printed. This motion passed. Rich also, gave a report on the American Cichlid Convention - it seems to be nicely underway.

A discussion was held on membership attendance at the monthly meetings. Some suggestions will be followed through on.

Rich Crabtree, 2nd by Paul Powell that the kitty at the meeting be done away with. The council approved.

Ken Keim will check with Hampton Bank in regard to the use of Master Charge, for our auctions. He will report on that later.

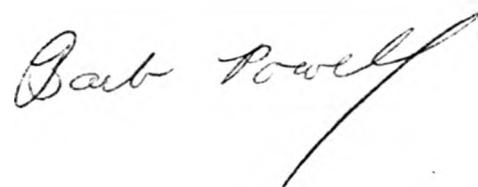
Carol Willemin stated that The Marine Aquarist will be sending us 12 copies of their publication each month.

Ken Keim will be passing out a questionnaire at the general meeting, regarding the bowl show classes. Please complete it and then return it.

Dave reported that we have now received additional requests for help in setting up an aquarium. He will check into setting up a committee to handle this function. The council approved.

The meeting was adjourned at 11:00 P.M. - with no further business appearing.

Respectfully submitted,



SUPER BOWL - 77

RESULTS

BEST OF SHOW

Jim and Joy Bogacki - (*Aequidens pulcher*)

JUDGES AWARD

Rich Crabtree - (*Tram. jacobfreibergi*)

CLASS 1 - GUPPIES, Single Male

1st - Bernie Macri	
2nd - Paul and Barb Powell	Purple
3rd - Elvis Bryant	$\frac{1}{2}$ Black Gold

CLASS 2 - GUPPIES, 2 matched Males

1st - Bernie Macri	
2nd - Paul and Barb Powell	$\frac{1}{2}$ Black Pastel

CLASS 3 - BETTAS

1st - Bill Misleddy	

CLASS 4 - CATFISH, 3 $\frac{1}{2}$ " and under

1st - Tom and Charlotte Hopfinger	
2nd - Ralph Wilhelm	<i>C. reticulatus</i>
3rd - Ralph Wilhelm	<i>C. palestrus</i>

CLASS 5 - CATFISH, SHARKS & LOACHES

1st - Bill Misleddy	Clown Loach
2nd - Jim and Joy Bogacki	<i>Leiocassis siamensis</i>
3rd - J. Williamson & J. Wright	<i>Acanthophthalmos myers</i> (Kuhli)

CLASS 6 - ANGELFISH

1st - Dave and Sharon Masters	Black
2nd - Ralph Wilhelm	Marble Veil
3rd - Ralph Wilhelm	Marble Veil

CLASS 7 - EGGLAYERS

1st - Ralph Wilhelm	<i>Aphyosemion australe</i>
2nd - Bill Miskelly	<i>Pearl Gourami</i>
3rd - Carol Willemin	<i>Aphyosemion gardneri</i>

CLASS 8 - LIVEBEARERS

1st - Bill Miskelly	Swordtail
2nd - Ralph Wilhelm	Sailfin Mollie (Albino)

CLASS 9 - CICHLIDS

1st - Jim and Joy Bogacki	<i>Aequidens pulcher</i>
2nd - Rich Crabtree	<i>Tram. jacobfreibergi</i>
3rd - Marilyn Waterston	Cobalt Blue

CLASS 10 - BOWL BEAUTIFUL

1st - Carol Willemin	Lemon Tetras
2nd - Bernie Macri	
3rd - Bernie Macri	

CLASS 11 - NOVICE OPEN

1st - Bernie Macri	Killie
2nd - J. Williamson & J. Wright	<i>Steatocranus casuarius</i>
3rd - Larry Marshall	African Lace Catfish

* * *

The members of M.A.S.I. wish to offer a special THANKS
to our 1977 Super Bowl Judges: Ginny Macrum, Bill Macrum,
Frank Bayne, David Wiley, Dave Breckenkamp and Charlie Zesch.

* * *

COMING MONTHLY BOWL SHOW CLASSES

November: Platies or Moons
 Guppies - 2 matched males
 Open

December: Barbs - all varieties
 Tetras or Rasboras
 Open

ENTER***ENTER***ENTER***ENTER***ENTER***ENTER***ENTER***ENTER

M.A.S.I. AUCTION - DECEMBER 4, 1977

M.A.S.I. will hold an Auction on Sunday, December 4, 1977, at the Holiday Inn North, I-70 and Lindbergh. Fish will be on display between 12:30 P.M. and 1:30 P.M. Bidding will begin promptly at 1:30 P.M.

The following are the rules governing the Auction:

1. All items must be clearly marked with the seller's name, letter and number, and type of fish, with a black waterproof marker.
2. Double bagging of all fish is recommended by the Executive Council. Bags of various sizes, rubber bands and markers will be provided at the auction for sellers' use, to re-bag if necessary in case of leakers. (Sandwich bags are prohibited.) Use of jars with watertight lids will be permitted.
3. Viewing of all items for auction shall be allowed between 12:30 P.M. and 1:30 P.M. No viewing of items shall be allowed during the auction. An intermission at a pre-set time near the midpoint of the auction shall be set by the Auction Chairman, at which time viewing will be permitted.
4. All items to be auctioned, not on the display tables by 1:30 P.M., shall be held out until the intermission, at which time all late-arriving items shall be placed on the tables for auction and viewing.
5. All items auctioned will have proceeds divided 50% to the seller and 50% as a donation to M.A.S.I.
6. All equipment brought for auction must be in working condition, and tanks, if leakers, must be marked as so.
7. Each seller is subject to a maximum of fifteen items for this auction, unless he previously has the approval of the Auction Chairman. There is a strict limit of five bags of any one species, color, fin structure.
(Example: Blue or Red Guppies, Angels, common or veil-Low or Hi Fin).

This Auction is the primary fund raising activity for M.A.S.I. Your support, both as a seller and a buyer, is vital to the success of M.A.S.I.

Auction Chairman,

John Griffitts

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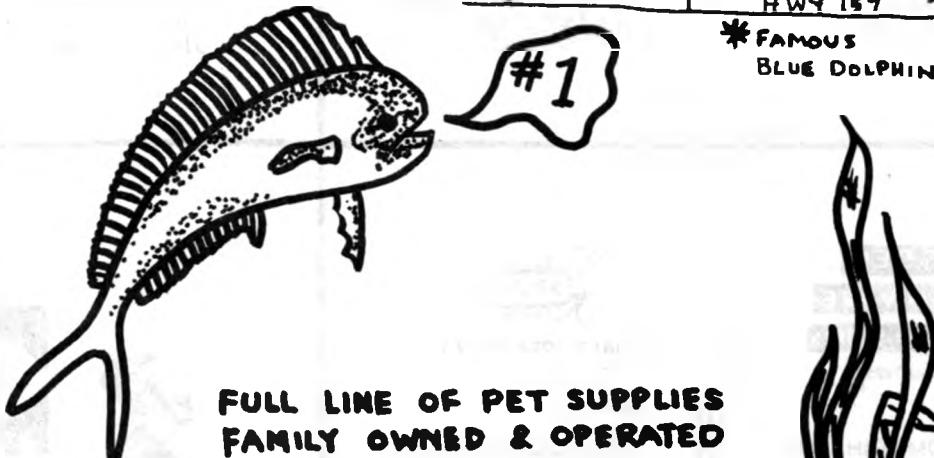
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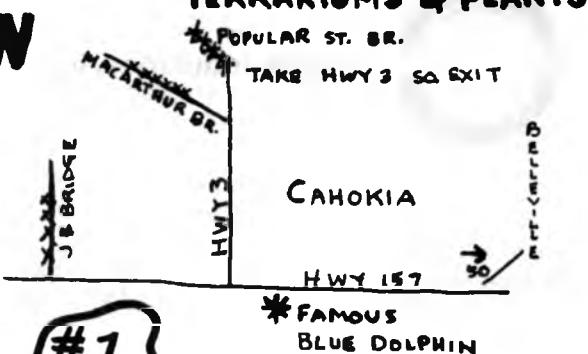
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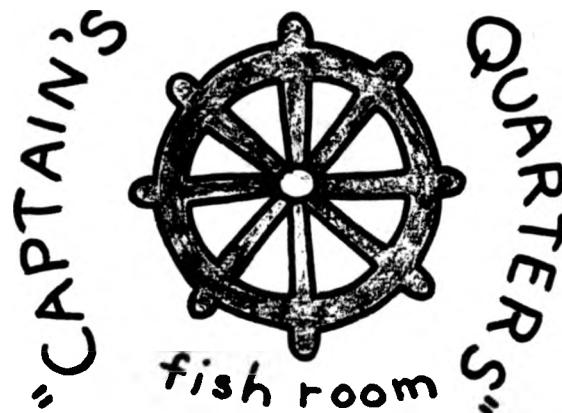
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EDITOR'S MESSAGE



I hope everyone gets a chance to read all of the Notices in this month's issue....Fish Raising Contest entries are due for judging at this month's meeting, the Show Committee needs a design for show racks, and Auction Rules for the upcoming auction on December 4th are on Page 12.

If you received a Questionnaire at last month's meeting and haven't turned it back in yet, please see that I get it at this month's meeting. The information on these sheets can be of great help to various society committees, but so far I've only received back 19 of the 48 passed out at the meeting. So, please take the time to answer these questions so that we can get a good overall view of what the members-at-large are interested in. If you were absent last month, or if for some reason you didn't receive one of the questionnaires, let me know at this month's meeting so I can give you one.

Another Super Bowl has come and gone, and although the number of entries was lower this year, there were many comments from the Judges on the fine quality of the fish shown in most classes. I'm sure that for every fine fish that was entered, there were many other fine ones that stayed home that night. It's a shame that we missed the chance to see them, and that they missed the opportunity to win an award.

On the subject of awards, if you haven't submitted an article for publication in the Darter during 1977, next month's issue is your last opportunity to be eligible for the 1977 Best Article Award. Any articles for the December issue must be received by me no later than November 28th.

What a nice Christmas present it would be for each of us if we received a December issue of The Darter, chock-full of articles contributed by our fellow members!

Best Wishes to all our members for a Happy Thanksgiving, from the Darter Staff!

Carol

DWARF RED GULARIS

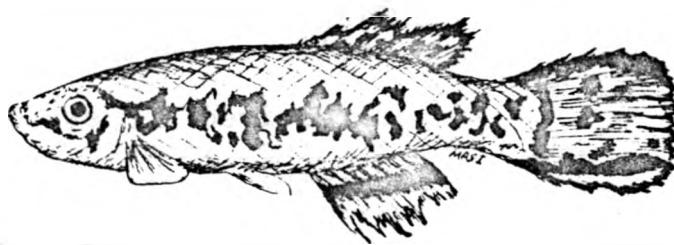
Jim Connell GAAS

The dwarf Red Gularis, a close cousin of the Blue Gularis, was first imported into this country in 1969 by Ron Jue. Contrary to the belief of a few, it is not a 'sport' or aquarium mutation of the Blue Gularis but a true sub-species of *Aphyosemion sjoedesti* on its own merit. I could find no information on the dwarf Red's bio-type or locale, but would imagine it to be very similar to that of the Blue Gularis. That is, the heavily vegetated waters of the Cameroons and southeast Nigeria.

Almost every aquarist is familiar with the beautiful and large Blue Gularis. Well, its red cousin is even more beautiful in color but is only about half the Blue's size -

the Blue attains six inches while the Red only grows to three. The Red has rounded orange pectorals while the pectorals on the Blue are longer flowing and pointed but have no orange in them.

As for the anal fin, the Blues have a little orange or yellow in it while the Red has a very big bright orange band lengthwise through the anal. The caudal fins on both varieties are much the same with alternating bands of blue and yellow and spotting of orange to reddish-brown. The Reds do not develop the filaments that the Blue males possess at maturity, but then again the dwarf Red's caudal is much more vibrant. The barring on the Red is similar to that of the Blue but is more prominent and a deep red-brown as in a dark cherry wood veneer. The top of the body, around the snout to the dorsal, is an orange-yellow. The colors look best when struck by early morning light or light from a weak incandescent bulb. Females of the species attain the same size as the males and possess the same barring but not the color of the males.



Since the dwarf Red Gularis is smaller than the Blue, it can be comfortably housed in a two gallon or five gallon tank, and as usual, a tight fitting cover should be on the tank. A heater is not necessary if the fish is maintained at 65° or above. Feeding is no problem either because these *Aphyosemions* eat anything, prepared, frozen, freeze-dried, or live. Live food is preferred, of course, but unnecessary unless preparing the fish for show since it brings out the male's colors.

The best results for spawning are achieved by using peat fibers placed inside a separate container in the tank and checking for eggs every four or five days. If you find some eggs, remove the peat and place it on absorbant paper or toweling until just damp and then put it in a plastic bag and seal

Dwarf Red Gularis - Continued

so that it is fairly air tight. The eggs are then stored for six weeks in a dark and warm place. Upon the arrival of that joyous day the peat and eggs are placed in water and lo and behold, the eggs hatch, hopefully, in about an hour to eight hours.

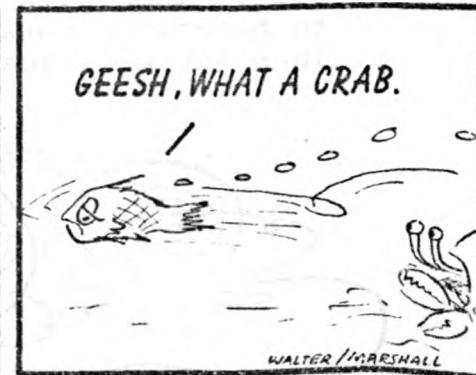
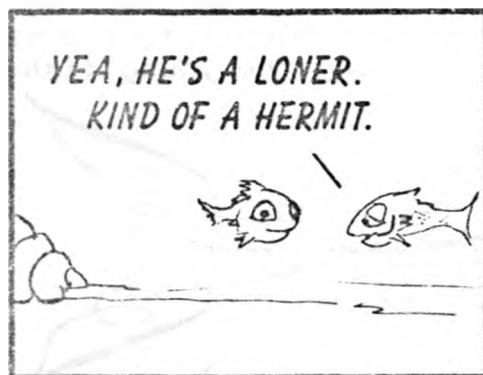
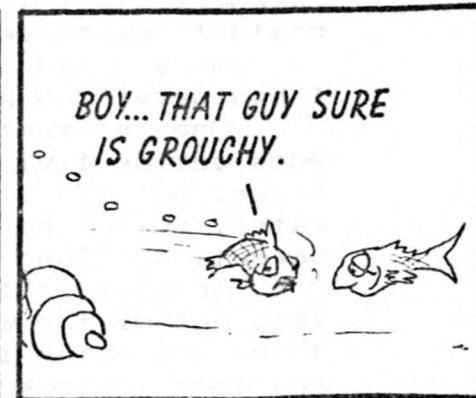
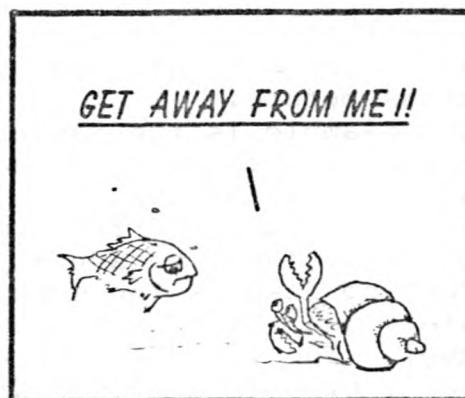
The fry are free swimming upon hatch and can consume live baby brine immediately and grow quickly. By six to eight weeks the babies have become recognizable adults and should be able to spawn at four to six months.

* * *

Reprinted from the June 1977 issue
of TANK TOPICS published by the
Greater Akron Aquarium Society,
Akron, Ohio

(Editor's Note: The illustration on the facing page is a very pretty Killie, but is obviously NOT, however, a Dwarf Red Gularis. My apologies to Staff Artist, Larry Marshall, for not providing him with the scientific name of the fish for his illustration.)

* * * * *



Book Reviews

By Marilyn Waterston

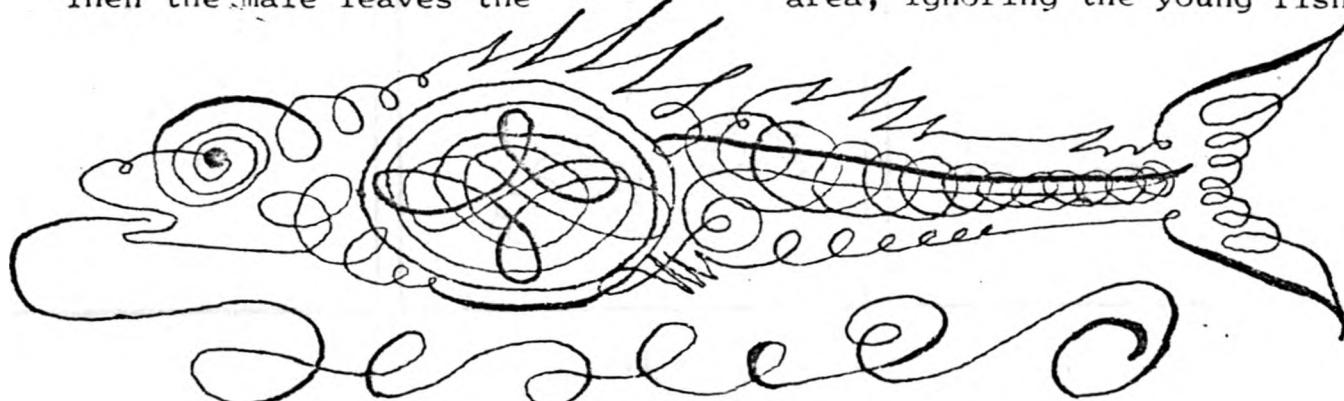
Recently I found an interesting book on the breeding habits of fish, at the Clayton branch of the County Library. It is a book that does not (thank heavens) have the oppressive Axelrodian stamp upon it. It is a fresh new look at some of the more unusual breeding habits of fish. Strange Breeding Habits of Aquarium Fish, Hilda Simon-Dodd, Mead, & Co., 1975, \$5.95.

Unlike the "How To" books on fish, I did not have to skip a large section of the book that would inevitably tell the reader what PH means, etc. What this book does, is explain the behavior of some fish after the conditions for breeding have been met, either in nature or in the home aquarium.

I'm sure anyone can guess what some of the fish in the book were: bettas, sea horses, and african mouth brooding cichlids. No book on unusual breeding habits would be complete without these. But there were quite a few, some of which are not in the "Home Aquarium Tropicals" category, that I had heard of or seen in films, etc., that I couldn't quite remember their habits- but this book seemed to refresh my memory. And there were a surprising number that in all my readings I had never run across before.

One interesting example is the Eastern Bitterling that lays its eggs inside living snails. The eggs do not harm the snail in the least, but after a few days the snail will flush out its shell with water, releasing the newly hatched fry. Of course by this time both parents are long gone, so the fry have to make it on their own.

Another interesting fish is the spraying characin. These fish leap out of the water, and the female deposits her eggs on the plants above the water level. The male fertilizes them in the same manner, and then guards them, even though they are high above him. He also sprays them with water in order to keep them moist. When they begin to hatch, he sprays them violently until they fall back into the water. Then the male leaves the area, ignoring the young fish.



Jewel fish are included in this book under the section labeled "The Pugnacious Parents". I don't find their behavior strange enough to include them in a book on strange breeding habits, but none the less they are interesting fish. The breeding colors of the jewel fish are absolutely fantastic, and any one who has put their hand into a tank of breeding jewel fish will testify to their pugnacity. A large jewel fish can not even give your hand a good pinch, but they try for all that they are worth.

One of the most interesting chapters in the book was "Sticklebacks--The Master Nest Builders". The nest is built of plant material, and is constructed by the male. The author compared the Stickleback nest to that of the weaver bird, but I feel a better analogy might be a sparrow. In any event it is unusual for any fish to be building a nest of leaves, roots, and twigs! The male carefully tests each piece of material for his nest--any that have a tendency to float are promptly discarded. After he has selected his materials, he glues the nest together with a kidney secretion. The finished nest resembles a long twiggy tube. The male then spawns with several females in the same nest, thereby making his brood a diversified bunch. After the eggs have been laid, the male then fans water through the nest, and guards the nest against intruders. After the eggs hatch, the male again guards the babies against other fish, until they are strong enough to fend for themselves.

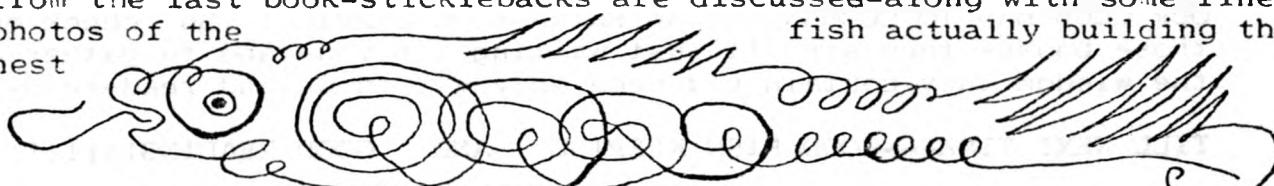
I found one very serious problem with this book. The language the author used, and the general construction of the book indicated that it was probably aimed at Jr. to Sr. high school students. Possibly I am being a bit too harsh, but I don't consider it a "scientific" reference book. If you are willing to ignore a slightly juvenile construction, this book affords interesting information--which possibly could lead to a better general understanding of fish behavior.

Living Fishes of the World is one book in the "Living ____ of the World" series. It is what I would consider a light reference book with many lovely photographs which I feel would make it an excellent coffee table reference book. The publishers price is \$16.95 but that was back in 1972, so I am sure that there has been a price increase by now.

Living fishes of the World is by Earl S. Herald, Pub. Doubleday & Co., 1961. Earl S. Herald is (at least in 1972) the curator of the Steinhart Aquarium of California.

Since this book is a general one, there is not a lot of information on any one kind of fish, and a lot of varieties are discussed that one keeping aquaria in the home would never attempt to keep (full size sharks for example). But, if you would like to increase your knowledge about fish in general, it is a good book.

Some of the fish discussed include, many varieties of salt water puffers, a rather complete discussion of parrot fish, our friends from the last book--sticklebacks are discussed--along with some fine photos of the fish actually building their nest



high up in some plants, a few africans, discus, wrasses, clown fish, nöpe fish, cat fish of all kinds, characins, butterfly fish, eels, piranha, loaches, bichir, etc., etc., etc. Most of these groups are represented by fine color photographs and a moderate amount of well written text. The combination of good text and fine photos makes this book well worth an evenings reading.

Goldfish in Your Home Axelrod & Vorderwinkler- Sterling Pub. 1958.

Goldfish, as with so many other short books, does not give a great deal of information on goldfish. It does, however, cover its subject better than books such as Guppies.

Goldfish has sections on all the major kinds of goldfish. This is primarily helpful in identification of the fish you may have purchased. It can also provide a hint as to what is available in the goldfish line.

Of some interest is the section on identifying the sexes of goldfish and techniques in breeding them. There is one section on hand spawning goldfish that sounds as if it might work well, but never having tried to spawn goldfish I can not vouch for it. The book does point out that hand spawning results in a high percentage of fertility--the book claims 90% or more.

The last section is about garden pools. Pools are not only a great place to keep fish, but they add a great deal of beauty to your yard. There are a few good hints in the section for anyone who wants to build a pool; those who already have one won't find much new.

Tropical Aquarium Fish- A. Van Den Nieuwenhuizen, trans. by Alfred Leutscher. Pub. by D. Van Nostrand Co., printed in Holland. Co. to English trans. 1964.

This book is basically a how-to-breed-fish book. It gives rather detailed accounts on how the various fish breed.

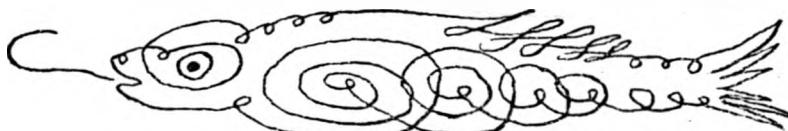
For example, Tropical Aquarium Fish has the biggest spread on how to breed the Chocolate Gourami I have ever seen- a full eight pages. The section on killi fish extends for 30 pages and covers *Aphyosemion schoutedeni*, *A. bivittatum*, and *C. nigripinnis*, only to mention a few. This book also covers quite a few of the more well-known aquarium fish such as bettas, barbs and tetras.

Over all, this book is generally very satisfying. It lacks a lot, to be sure, but with its limited space it has succeeded in providing some good in-depth information on a few aquarium fish.

At this point I feel that I must mention that the above effort was hurried-to say the least. Grammarians please bear with me this time. My next effort will be better I assure you. There is something else I would like to mention. If you have a favorite book, one that you feel is a stand-by or just one that you like for what ever reason, that you would like me to review, I will be more than happy to do so. I am very open to suggestions! If its part of our club library, all the better, then I will be able to spread the word about a good book to the rest of the club.

Now for the rest of you who have not read a good book lately, what's you excuse? Our library is FULL OF GOOD BOOKS! SO MANY THAT OUR CLUB HAD TO COMMANDER AN EXTRA BOOK CARRIER! So check out those books- they are all just waiting for you- and to gather all the wisdom they contain you need only sit down and read-read-read!

TILL NEXT TIME---GOOD FISH KEEPING AND GOOD READING!!!!!



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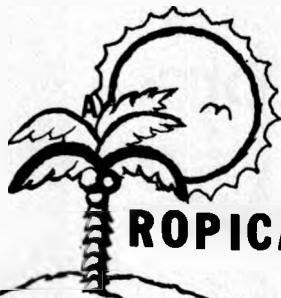
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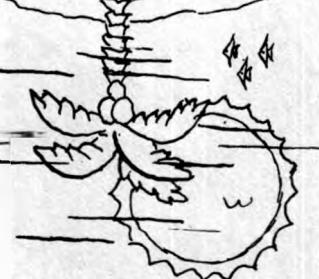
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NAMES IN THE NEWS

CONGRATULATIONS TO THE FOLLOWING M.A.S.I. MEMBERS, WHO
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Charlotte Hopfinger	"Ah, Sweet Mystery of Life"	<u>The Aquatic Net</u> Aug. '77
Joy Bogacki	"How To Feed Your Fish While You Are Away"	Aug. '77 <u>The Aquatic Net</u>
Ken Sommerhauser	"As The Water Bubbles"	<u>The Fish Culturist</u> Oct. '77
Carol Willemin	"A Fish 'Just So'"	<u>London Aquaria Soc.</u> Sept. '77

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BUMBLEBEE GOBIES FROM SANTA

BAP Report on Brachygobius xanthozona

By Jim & Nancy White GAAS

We've had these cute little minatures off and on for years, but never tried to spawn them. They never seemed too hardy. We'd buy several, acclimate them slowly to a community tank of small fishes and they'd gradually die off. Then in Sept. '76 we set up a 40 gallon brackish water tank. The water wasn't really brackish (should read 1.010 on a hydrometer) but we did put in 1 gallon of water from a marine tank, so some salt was present. We used coral for decoration and planted water sprite. The effect was startling, with the white coral, the bright green live plants, a few red swordtails, 3 each of *Monodactylus sabae* and *M. argenteus*, 2 datnoids, 6 scats and the 4 little bumblebees. Substrate was dolomite over U.G. filters, temp. 78°.

All of the fish except the swordtails were purchased as small as we could find but they didn't stay that way for long. The Monos grew extremely fast and the others weren't far behind. Before long, any mouth in the tank might have tried to engulf the little bumblebees, so in November we moved them to their own 10 gallon tank.

According to Willy Jocker, in Spawning Problem Fishes, Book II, the bumblebees need soft alkaline water, the two of which do not usually go together. We had moved them with water from the 40, which was pH 7.8. We then added a piece of coral to their 10 and a nylon knee stocking filled with 2 cups of Canadian peat. Jim added a 5 oz. cup of water from a marine tank. Not knowing he had done so, I added another 5 oz. cup. Not knowing I had done so, he decided later that his addition wasn't enough and added another 5 ounces. 10% water changes were made/week and by now each of us thought the other was adding salt and neither of us did. We're going to have to start communicating soon! Needless to say, we have no idea how much salt was in the tank. Truth is, we didn't expect them to spawn, even though we provided 3 large empty mystery snail shells for the purpose, 'just in case'.

Their diet consisted of live baby brine and small amounts of frozen adult brine. In spite of our mismanagement of salt, it soon became evident we had two fat 1-1/4" females and 2 slender little 1" males. By Dec. 1, just 3 weeks after the move, one little male began defending a mystery snail shell and trying to lure a female in to join him. She must have done so, for 3 days later he was guarding some amber-white eggs, a few of which could be seen on the upper inside, hanging from threads. They would bobble back and forth as the male, and sole protector, fanned them. Since Christmas was coming faster than we could get ready, we left the eggs and added some floating water sprite and hornwort, hoping some of the spawn would survive on the infusoria and hide in the plants. None did. (Continued)

We moved the male's favored snail shell to the front glass with the opening facing out and just an inch away from the glass. Even if we didn't have time to culture infusoria, we could at least get pictures if they spawned again, and they did, on Dec. 20th. This time there were at least 25-30 eggs visable. On the third day, every small egg that we could see had 2 large black eyes, and this is what we started calling them - 'The Eyes'. Being so close to fry, we couldn't stand to leave them to whatever fate had befallen the others and moved the shell containing The Eyes to a small 6" x 6" x 6" container. We used all of their water and placed an airstone, on fairly strong, right beside the shell. No fungicide was used.

The flurry of Christmas left little time for Eyes or anything else. The day after Christmas we realized it had been 6 days from spawn. Sure enough, several dozen little slivers were darting about the container and we had no infusoria ready. What to do. Three tanks away was a 5 gallon with sponge filter and algae covering the sides. Grunge was on the bottom and just a few livebearers that wouldn't mind being moved, which we did.

We then dumped the 5, being careful not to disturb the algae, and left some of the grunge in the bottom. We refilled the tank with water from the parent golie's tank and then eased the small 6" square container down in the 5, allowing the slivers to swim out. The snail shell still contained many attached fry that were not free swimming, so we layed the shell on the bottom of the 5, now containing the freeswimming fry. We didn't put an airstone next to the shell for those remaining, for they looked ready to swim. We added some floating plants from a nearby tank and 5 drops of liquafry. With fingers crossed, we hoped there were enough organisms in the tank to keep the fry alive until they could eat live baby brine.

The next day a check of the snail shell found those remaining had turned white and died. Perhaps if we had either left them in the hatcher with the airstone or put an airstone beside the shell when it was moved to the 5, they would have survived. However, we didn't and they didn't, so attention was directed to the living slivers. They were pale grey and seemed to hover at random about the tank, not showing preference to any area. They'd dart now and then and seemed to have rounded tummies (a magnifying glass is indispensable for checking this!) so apparently could see food we couldn't see. We tried newly hatched Bay brine, even though Mr. Jocker said they couldn't eat it for a week. They showed interest and would snap at it, but it was still too large for them. They survived the first 2 days on whatever was in the tank and were able to eat newly hatched brine on the third day. (Continued)

Bumblebee Gobies - Continued

A note here on Mr. Jockers' books. We've read that his works are worth their weight in fish eggs and we believe it. He gives instructions in great detail on spawning and raising fry of problem fishes and leaves few, if any, unanswered questions. The fact that our bumblebees could eat live brine after 2 days and his took a week, should in no way detract from his excellent writings. Many variables could be responsible for this difference and anyone spawning them would do well to be prepared for a week's feeding on infusoria, just in case. Where we part company with authorities is when reports are obviously guesses, and not based on someone's actual experience in working with the specie in question. Mr. Jocker has no doubt worked with every species he's written about, and differences you may note can be reconciled.

Though it is not always so, we feel we're home free once the fry are eating live brine and the little bumblebees did not disappoint us. We managed water changes by changing 10% in the parent's tank, then changing 10% in the fry tank using the parent's water. Eventually both tanks should be nearly free of salt, making acclimation of fry to new homes easier. They apparently do O. K. in fresh water but are happier with the addition of salt. We feel our past experience in gradually losing them in community tanks was a result of them getting the tail end at mealtimes. They are ravenous little eaters, but take their time, and do not compete well in a tank with swift, darting species.

The Eyes grew into their eyes and it was no longer noticeable after a week. They grew fairly slow but at 2-1/2 weeks had taken on the characteristic 4 black stripes of the specie. This transformation was remarkable, for it seemed to happen over night; no stripes one day - stripes the next. The basic fry-grey between the stripes did not give way to yellow for another week. At one month, the count is 45 wee bumblebee gobies that are tiny 3/8" duplicates of their little parents. We couldn't have bought a better Christmas present!

Reprinted from the March 1977 issue
of TANK TOPICS published by the
Greater Akron Aquarium Society,
Akron, Ohio

(M.A.S.I. members may recall seeing Jim and Nancy's little "Christmas presents" at our Annual Show last April! It's always a pleasure to reprint one of their super articles, but was a special treat to find one on some of the fish that we've actually had a chance to see "in person". Ed.)

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WHAT COLOR IS YOUR FISH? ARE YOU SURE?
By Bill Barker

(Reprinted from AQUARIUM WORLD, September, 1974)

Many hobbyists have at times wondered about the rapid changes in color that their fish exhibit. Some go through so many color variations that arguments have arisen as to the accuracy of color prints shown in all the more popular aquarium related literature.

Let's see what causes this color variation according to experts.

Obviously fish, as well as birds and insects, are highly colorful. Therefore, they must be equipped with similar eyesight as the human visual sense or else they would see only chromatic shades of gray, black, brown, and white.

Basically, the color is due to the following: In the dermis (the outer skin) of the fish we find large cells that contain chromatophores. These are in the form of Grainlets or Droplets that can distend or contract instantly, thereby intensifying or decreasing the color.

The basic grainlets are called melanines. These are in black, blue black, or brownish black. The Droplets are called Lipochromes that are red or yellow.

Strange as it may seem, there are absolutely no green, nor blue pigments. At this point I realize the thoughts that have entered your mind. You have seen these colors in a large number of fish. I hope I can explain this phenomena to you so you may understand.

Fish have shiny crystals imbedded in the second layer of the dermis. They shine through the upper layer of dermis. If the fish tends to be fat these crystals look yellow. The more fat the deeper yellow it becomes. When the black grainlets in the chromatophores are viewed with the yellow glow behind them they look blue or green. At this point I want to stress to you that the fishes basic colors must not be confused with the delicate hues resulting from the reflective metallic glitter of the fish. (Those of you who have used highly fluorescent colored gravel have perhaps noticed the reflected color of your fish - example: vivid red gravel used with silver angels.)

This guanin (crystals) also will work under certain types of light. In a basic incandescent light the colors you see are actually truer of the fish for the chromatophores are more evidence and the reflective guanin less.

When the guanin crystals are imbedded deeper in the dermis of a fish they form a silver layer called argenteum so common in your truly all silver fish (Silver Dollar, Tin Foil Barb, etc.) If the chromatophores are equally intense we experience the marvelous effect of luminosity seen in fish like the neon tetra.

The color cells of fish are primarily the result of light. You will notice the bellies of fish tend to be less colorful and fish deprived of light have a relatively pigmentless skin (cave fish). Fish also adapt to the surroundings of their native habitat in color and design. The fish can change color by contracting or distending the pigments in the chromatophores such as turning pale when in discomfort or deepening in color when excited. These changes can be as rapid as a few seconds over either part or the whole of the body.

Experts have noted definite color changes due to lowered temperature, fright, lack of oxygen, diseases, discomfort of all types, change of diet, and excitement.

Spots, stripes, bands, etc. are primarily acquired due to surroundings but also coloring plays its part in the same way. This is used by a large number of fish as a protective device, a camouflage, to enable them to more easily blend in with the area they live and to keep them safe from natural enemies (example: Leaf Fish).

The fish can darken in dark surroundings and pale in lighter ones.

A number of fish have a permanent mating color such as the Rosy Barb, wherein others go through a variety of changes during the stages of spawning. You can easily see this with most dwarf cichlids.

They have separate colorings for fright, bluffing, mating, spawning and breeding. As a rule in fish, the male is by far the more colorful. Some fish even have a resting color as you can discover by turning on a light after the fish have been in darkness for awhile. (The blue on Neons takes on a purple cast).

Some colorations help you to spot the areas where the fish are found. Open water fish have a light silver glitter. Bottom dwellers tend to be spotted. Plant dwellers have cross stripes and close to shore fish have dark clouded designs.

Those of you who have done any skin diving or scuba have perhaps noticed that when you are viewing fish underwater that you can often see them in shades of gray similar to black and white photography; and certainly nowhere near the vivid colorations seen in a well lit tank.

This has led to controversy as to the ability of fish to actually see color. Extensive experiments have definitely proven that they do see color. If your fish is colorful you stand a better chance of having a healthy fish. If a fish varies from its natural colorations whether in normal or spawning colors, it is a malformation.

The changes occur due to absence or over-abundance of certain pigments. Internal disease, lesions, eye defects, and other undiagnosed injuries may produce black pigment; this is called melanism. Other colorations are xanthorism (gold coloring),

albinism (lack of color) and alampy (inability to produce the glitter and sheen common in healthy fish). If your fish suddenly develops these symptoms the malformation is apparent yet may not lead to fatalities. An exception to the rule is found in goldfish that have a variety of color changes over periods of time.

If your fish are well cared for their metabolism will be in balance and you will experience the great pleasure of seeing a veritable rainbow of color in your tanks.

* * *

HELP!

HELP!

HELP!

SHOW RACK DESIGN NEEDED

M.A.S.I.'s Show Committee is hard at work planning next April's 1978 Annual Show.

One of the Show Committee's main concerns is to see that we have special show racks for this coming year. As anyone who attended last year's show knows, these racks are badly needed. Funds are available to provide them, BUT A DESIGN IS NEEDED!

If anyone has an idea for a design for the show racks, please submit your design to Dave Masters as soon as possible.

Work on the racks must begin soon if they are to be ready in time for the Annual Show, which is now only five months in the future.

Ideas or suggestions for a design from ANYONE will be appreciated, so please, let Dave know if you think you have any ideas or suggestions.

THANKS!

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Ceratopteris thalictroides, WATER SPRITE

By Rick Craffee

There comes a time when all fish enthusiasts want to incorporate plants within their aquascaping plans. Perhaps it is at the annual show or just a home tank that he wants greenery in. He asks the question, a basic one, where do I start? As plant chairman I would recommend starting with Water Sprite, beautiful and an easy plant to start with. Water Sprite, or Water Fern, is one of the in-between plants which does equally well rooted or floating. The handsomest plants are produced when submerged without crowding in good light. Water Sprite is a perfectly developed hydrostatic apparatus which makes them float on the surface of the water. The roots are thick and in bunches. Leaves are fragile and break off easily. Leaves vary from a dark green to a light beautiful emerald green. Water sprite seems to do well with the Cryptocoryne, Cabomba and vallisneria species. Bright light seems to be best, but artificial light gets excellent results. I have a 53 gallon aquarium that is planted with all sorts of Crypts and swords, and generally I keep my lights burning about 12-14 hours a day. Water sprite seems to do exceedingly well when planted in an established aquaria containing numerous amounts of fish wastes, although this is not entirely necessary. If you think that water sprite is a small plant, you have a big surprise in store. Generally I plant my nice small specimens that have a long root system. Several of my older specimens are close to 16 inches high containing 10-12 large leaves. Two submerged specimens will cover an entire background of a small tank. Water sprite is delicate and should not be in a tank with fish that love greenery. Best temperatures seems to be between 68 to 78 degrees F. although quite often my tank is in the 80's. Soft water and a pH of about 5 - 5.6 seems to suit it best although my water is medium hard and is very alkaline. There may seem to be contradictions, but part of my article comes from what is available in literature and what I have experienced first hand. New plants will often form on the leaves of the older plants. A portion of the leaf will seem to break off and then it will start to form roots. After it breaks off completely it will float to the surface and the roots and leaves will start to grow longer and longer. When the roots have reached a length of 2 - 3 inches, I generally replant them in the sand. Caution comes at this point, because water sprite reproduces so rapidly it will cover the entire surface of your aquarium in no time at all. If you have plants below which need this light you're in trouble. I generally remove the surface plants and feed the plants to my plant eating fish or put them in tanks that need surface cover for babies to hide in. Care should be taken when planting. Do not cover the plants above the root system. Just above the roots is where the fern-like leaves will begin to grow out and open up. Also the stalks of each leaf are very brittle and break off easily.

Water Sprite - Continued

Water Sprite can be a beautiful plant for your baby fish to hide in. It is also a good floating plant for your gourami's to anchor their nests in. Overall, water sprite is a beautiful plant and will truly add to the beauty of your aquarium.

Reprinted from THE KITSAP AQUARIAN,
Jan. 1975

* * *

FISH RAISING CONTEST REMINDER

The Hi-Fin Lyretail Swords, subject of this year's Fish Raising Contest will be judged for the first time at the November General Meeting.

Since fewer members than usual are participating in this event, we hope ALL CONTESTANTS will remember to bring in their fish for the judging.

If you lost one of the two fish, or you think one of them has inferior finnage, you are probably in the same boat with just about everybody else, and remember, ONLY THE BETTER OF THE TWO SPECIMENS WILL BE JUDGED!

So, don't forget to BRING 'EM IN FOR THE JUDGING!

CHANGE OF ADDRESS

M.A.S.I. Member, Laura Drane, has moved to Texas. Her new address is as follows:

Laura Drane
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