

DELTA TALE

1970 JULY

PVGC



JULY 70
VOLUME No. 1
BOOK No. 1

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FUTURE EDITION

Starting in the August issue of "DELTA TALE" there will be a three part series on Guppies by Dave Culver. If there is anyone else in the Club who would like to write an article for "DELTA TALE" please contact me.

George W Turner
Secretary
PVGC 671-6850

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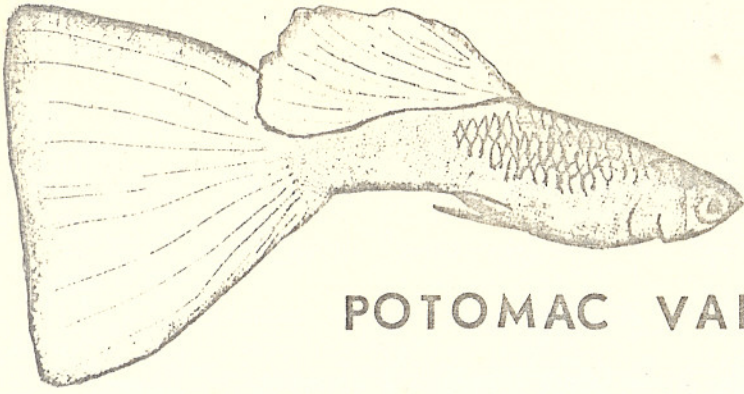
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Delta Tale is published for the benefit of Potomac Valley Guppy Club members, a non-profit organization established in 1960 for the purpose of furthering the Aquarium Hobby by promoting good fellowship among its members, encourage the improvement of the art, to disseminate information to all wishing it, encourage friendly competition, and solicit participation in its shows. Correspondence should be addressed to George Turner, 821 So Florida St, Arlington, Va 22204. 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.

SHOW DATES

JULY	AUSTRIAN GUPPY ASSOCIATION- VIENNA
JULY 25 & 26	GUPPY ASSOCIATES OF MILWAUKEE
AUGUST	GERMAN GUPPY ASSOCIATION- BERLIN
SEPT 6 & 7	SOUTHERN CALIFORNIA GUPPY CLUB
SEPT 12 & 13	COLUMBUS OHIO GUPPY SPECIALISTS HP
SEPT 26 & 27	IFGA MEETINGS TIDE WATER AQUARIUM SOCIETY, NORFOLK
OCTOBER 4	GREATER PITTSBURGH AQUARIUM SOCIETY
OCTOBER 11	CINCINNATI GUPPY CLUB HP
OCTOBER 18	NORTHEASTERN INDIANIA AQUARIUM SOCIETY HP
OCTOBER 25	SWANSEA OF CANADA
NOV 7 & 8	INDIANAPOLIS AQUARIUM SOCIETY HP IFGA ANNUAL MEETING & BANQUET



July 13, 1970

POTOMAC VALLEY GUPPY CLUB

The 127th meeting of the Potomac Valley Guppy Club will be held on Monday, July 13 at 8:30 P.M. in the Hospitality Room, Coca Cola Bottling Plant, 5401 Seminary Rd., Alex., Va

The Table Show for this month will be Guppy-Open, Guppy-Female, and other-small cichlid. Remember only five combined Guppy entries and five other class entries for a total of ten entries.

The July 13th program will be a slide and talk by Doug Smith local cichlid raiser and photographer par - excellence.

An error of mine was noticed by one of the club members. The show standings for Red Veils , of the 1970 Spring Fish Show should have read :

1st	R. Shaw
2nd	R. Shaw
3rd	R. Shaw

In this months edition of "Delta Tale" you will find a Fish Block puzzle containing 25 different named fish. The first person to circle the 25 fish listed (and mail the puzzle to me after July 1) will receive a door prize at the July 13, meeting. (Send your answer to George Turner)

I did not put Trading Post in this months edition for one reason; I believe that there are some members who don't understand the meaning or value of the Trading Post. Trading-Post is for every club member, it is used by everyone for everyone. If you have fish or equipment which you do not need, or have become excess, this is your outlet. Advertise it in Trading Post (at no charge). It may save you some time and some money.

For those of you who didn't attend our last meeting, there has been a change to our by-laws. Section I, Para D-4 of the By-Laws has been amended to read:....by the President or Secretary. A copy of the By-Laws will be available at the July 13 meeting.

George W Turner
Secretary
P.V.G.C. 671 - 6850

MESSAGE FROM THE PRESIDENT

This meeting should be a good one if you like cichlids. Doug Smith is a terrific photographer, I have seen some of his slides and they are terrific. He had just been named the official photographer for the American Cichlid Assoc.

Plans are being developed for a raffle of a large tank set-up. This will include a tank, stand and hood. Give some thought to the subject and how big the tank should be, as it will be brought up at the next meeting. Tickets will be sold in order to raise the money to cover the cost.

It is with sorrow that I must advise the club members of the passing of an old Guppy Club member Larry Weisz. He was one of the original club members. Flowers were sent from the club.

Plans are being made for our 24 October show. To provide a better emphasis for Home Grown fish. The class structure is going to be changed.

GET A FRIEND TO JOIN

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BUILD A BETTER BRINE SHRIMP HATCHER

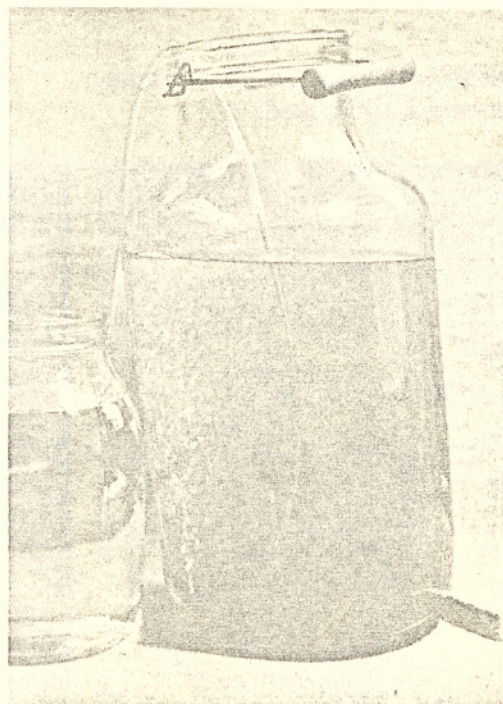
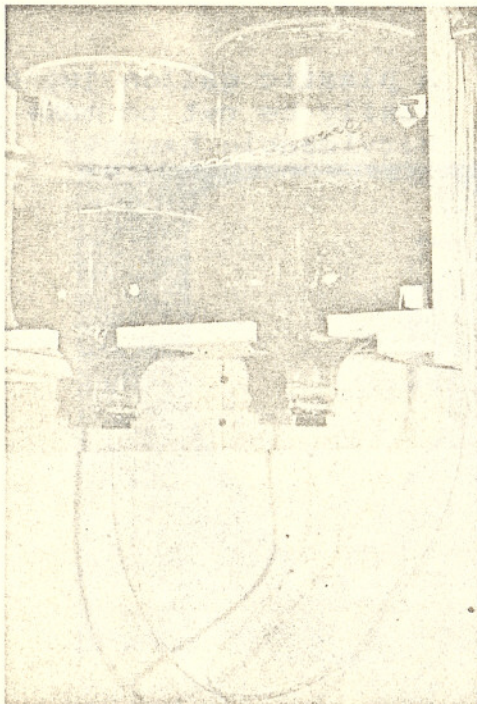
by Charles & Martha Elzer, GCAS
photos by Ray Juschkus

In a manufacturing area that is replete with burping clams, battery operated dip tubes and fluorescent rocks, "you can't hardly find" one of the most important pieces of equipment necessary for breeding fish. There is a plastic cone and a soup dish affair one can purchase to hatch brine shrimp, but both of these have some obvious faults.

The plastic one is hard to fill, difficult to siphon, and more difficult to clean. The yield is severely limited in the other. In addition to building a better mouse trap, the appearance of a better brine shrimp hatcher will be more than welcome, and the aquarium world will beat a path to your door.

Gallon jars can be supported
upside down in a wooden frame

A three and one-half gal.
jug for greater quantities
of shrimp



Until such an event, there are several hatchers you can make that are very serviceable. The materials that present themselves are glass and plastic. Metal can be used if properly coated. However, salt water is very pervasive. For this reason, glass and plastic will be most seriously considered.

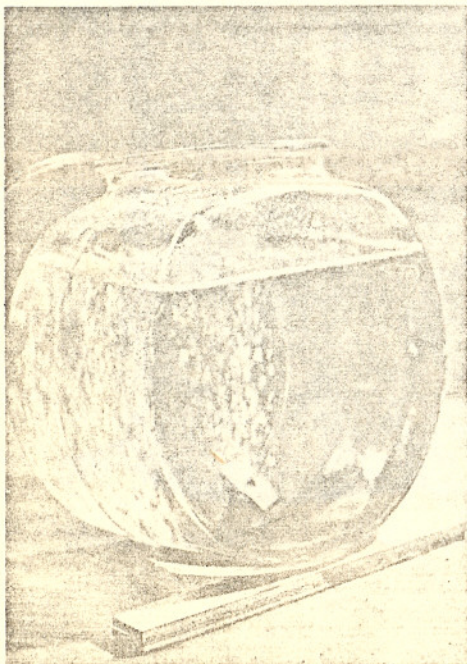
Since aeration is necessary and agitation of the mixture is of prime importance, the shape of the vessel has great affect on the outcome. A great deal of brine shrimp is hatched in a wide mouthed gallon pickle jar. The jar should be tipped slightly in order to provide a better movement. Jars of similar shape in three and five gallon sizes are used by both hobbyists and professional breeders alike. A round container usually works best.

Another favorite is the half gallon, gallon, and two gallon drum shaped fish globes. Ther peculiar glass shapes are also used as they are found. All of these "off the shelf" shapen have one short-coming. We cannot get total agitation of the mix.

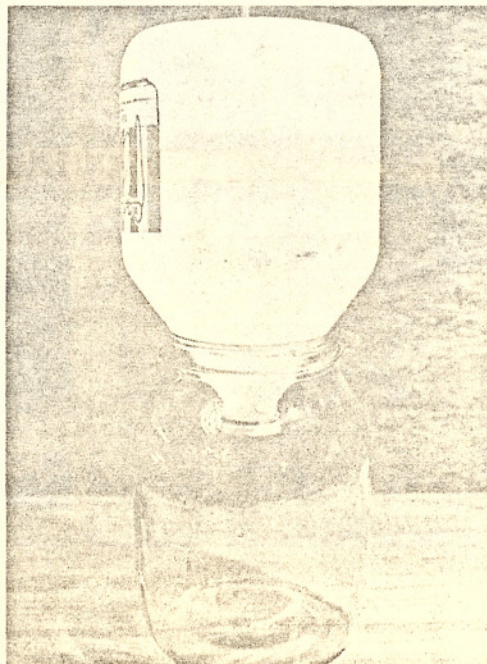
In an attempt to improve the agitation qualities, the following hatcher has been developed.

The basic raw material for the hatcher to be discussed in this article is a gallon cider or vinegar jug. The bottom is removed and the jug is held upside down when functioning. A number 6, one hole rubber stopper is placed in the neck, and an air line fitted to the stopper and connected to a rather vigorous air supply.

Drum bowls of various sizes are frequently used



A plastic gallon jug can easily be cut to make a serviceable hatcher



BUILD A BETTER BRINE SHRIMP HATCHER

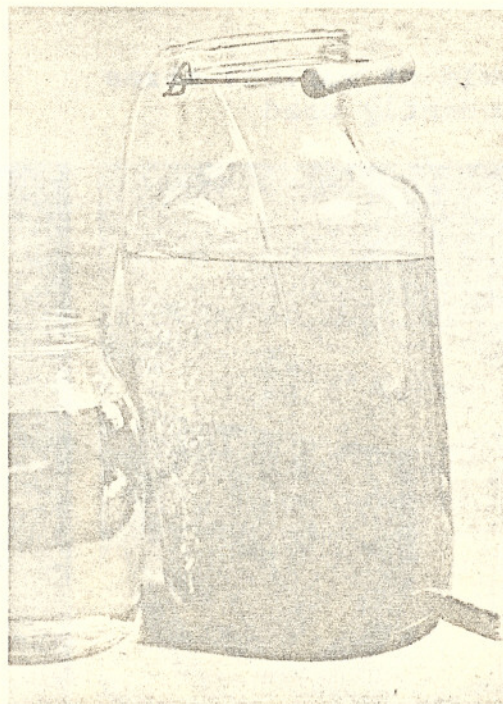
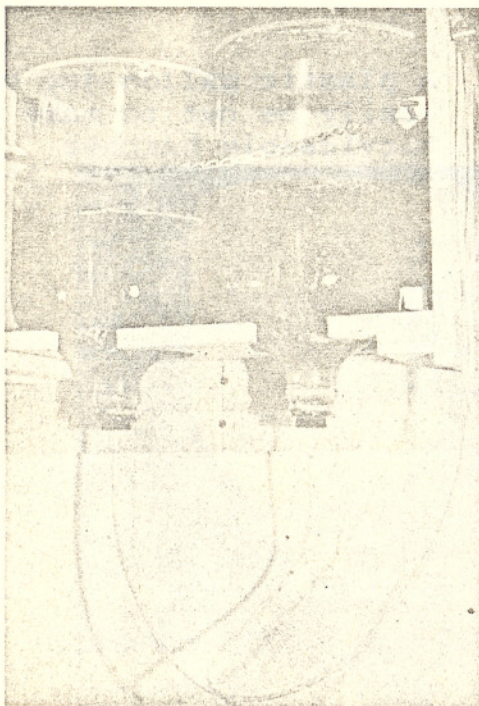
by Charles & Martha Elzer, GCAS
photos by Ray Juschkus

In a manufacturing area that is replete with burping clams, battery operated dip tubes and fluorescent rocks, "you can't hardly find" one of the most important pieces of equipment necessary for breeding fish. There is a plastic cone and a soup dish affair one can purchase to hatch brine shrimp, but both of these have some obvious faults.

The plastic one is hard to fill, difficult to siphon, and more difficult to clean. The yield is severely limited in the other. In addition to building a better mouse trap, the appearance of a better brine shrimp hatcher will be more than welcome, and the aquarium world will beat a path to your door.

Gallon jars can be supported upside down in a wooden frame

A three and one-half gal. jug for greater quantities of shrimp



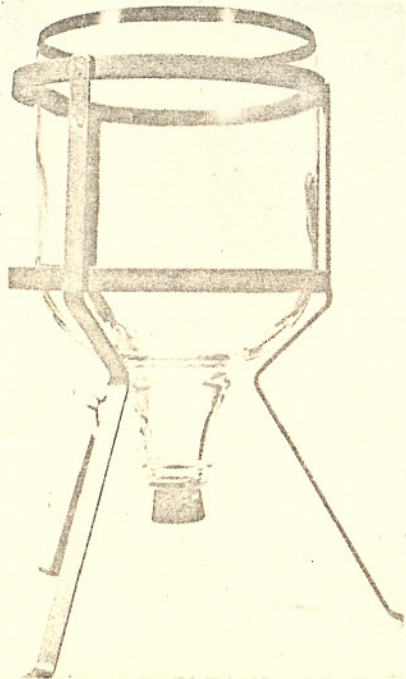
In order to remove the bottom a line must be scored with an ordinary glass cutter, approximately 1" up from the bottom. This is most easily accomplished by clamping the glass cutter and a block of wood to a table and rotating the jug against the cutter. The jar is then placed in cold water equal in depth to the height of the scored line. With the aid of a funnel, hot water is poured into the jug. A sharp cracking sound will signal the conclusion of the operation. Plastic electrical tape, adhesive tape, or masking tape can be used to cover the resulting edge.

The jug can be held upside down in a variety of ways. A wooden frame, a wide mouthed glass jar, or a metal frame can be used. Since jugs of varying capacities are used, depending on the need, the usual range is from one to five gallons. Commercial hatcheries may have 20 five gallon hatcher going at one time.

A more sophisticated hatcher can be built of plexiglass or lucite plastic. A wider range of tools and skills are necessary to fabricate the type pictured. This type was first used by Bob Cinquemani of New Hyde Park, New York.

I'm sure that when faced with a real need, the problem of building a workable hatcher will be solved in a great many different ways. Send us a picture of your "answer to the problem". It may be the best one yet.

This hatcher has found wide acceptance in the New York area



This battery of plexiglass hatcher keep the authors fishes well fed

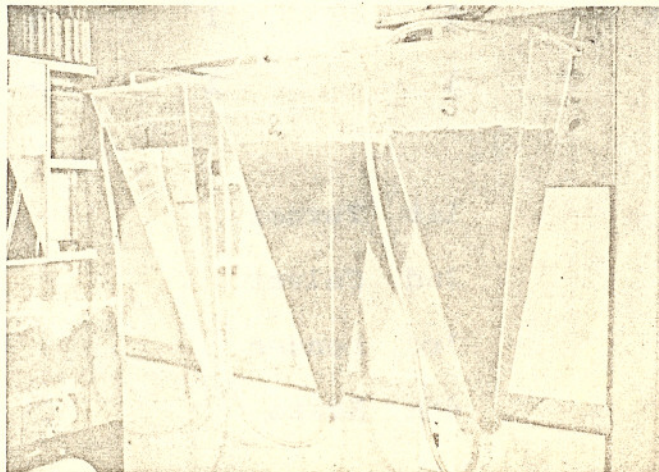


TABLE SHOW STANDINGS

The quality and the quantity of the entries at our last table show was good. The club standings are listed below;

Trios 1st Wolcott 2nd Culver 3rd Kratz
 Open 1st Turner 2nd Turner 3rd Turner
 Other 1st Lenzen 2nd Turner 3rd Lenzen

	Entries	HG	Places	total	O.T.	N.T.
Aldridge	-	-	-	-	-	6
Culver	1	1	3	5	19	24
Hale	-	-	-	-	-	6
Kratz	3	3	2	8	6	14
Lenzen	4	-	7	11	6	17
Levitt	-	-	-	-	-	3
Shaw	1	1	-	2	4	6
Turner	7	5	13	25	17	42
Wolcott	1	1	5	7	4	11
Walsh	1	1	-	2	2	4

1st Turner
 2nd Culver
 3rd Lenzen
 4th Kratz

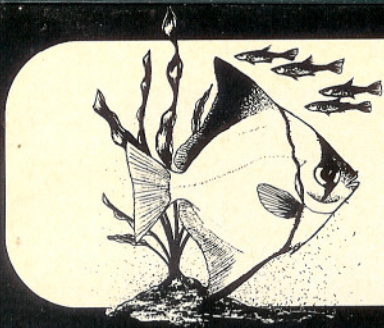
SEE CLUB LETTER FOR RULES
FISH BLOCK

In the alphabetical block below there is 25 fish listed in horizontal, vertical, and diagonal lines. Some of the fish listed are end to end, as you find the fish draw a circle around the word. HAVE FUN.

A O L C O A S R A S B O R A
 I S W O R D T A I L O A T H
 N I O R A I O C D O N T I C
 R S O Y S C G O U R A M I D
 A N T D I M H F A S O G E A
 S G Y O C O I S H A R K N P
 T O I R A S N O T K B Y O I
 B L X A N G E L A F I M P S
 O D A S E I O N R S M O A T
 H F K H D L N O A P A L Y O
 A I E O E C T S T O C L H G
 T S R A M A I G U P P Y S R
 C H B N P C D U B I S H T A
 H A E C S H O S T I M O A M
 E O N B E T T A T H I B H M
 T C S O Y X S I S A O N N A
 F D I A A E O N A L N L K P
 I P S N B E T I S F P D A A
 S I A P L A T T O B I O E T
 H A L R F I C T M E S P H R
 P O T A A I H N A A T L E D
 C A O N V D A N I K A A N A
 D F N N I S I S T O A T T N
 O P O B E D I S C U S Y E I
 A C S O P D E N E I O F I O

- ✓ CORYDORAS
- ✓ ANGEL
- ✓ SWORDTAIL
- ✓ GUPPY
- ✗ NEON
- ARATUS
- ✓ GOLDFISH
- ✓ MOLLY
- ✓ GOURAMI
- ✓ DEMPSEY
- ✓ HEADSTANDER
- ✓ LOACH
- ✗ HALFBEAK
- ✓ BETTA
- PANCHAX
- ✓ APISTOGRAMMA
- ✓ PARADISE
- ✓ PLATY
- ✓ SHARK
- ✓ HATCHETFISH
- ✓ RASBORA
- ✓ DANIO
- KIRBENSIS
- ✓ CONVICTS
- ✓ DISCUS

~~D~~
H
P
C



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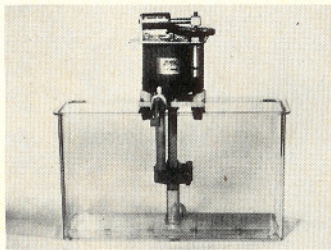
VOLUME 1 An Independently Published Supplement for Aquarium Society Publications NUMBER 3

New Things in Aquaria —

Mixing Air & Water, Nixing Leaks & High Costs, A New Mag

2-IN-ONE PUMP

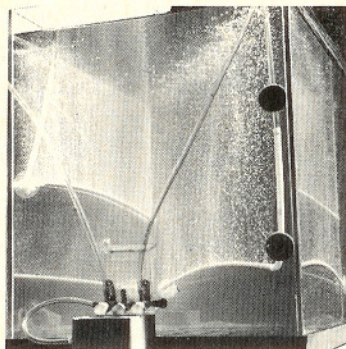
A Clever-Idea-of-the-Month award, if we had one, would go to the maker of a combination water pump/power pump that simultaneously cleans and aerates a



tank. That's the claim for the new Imperial double-action pump by Addlife, supplier of a long list of aquarium accessories. President Milton R. Cohen tells us that one of these pumps will aerate six to eight tanks, and that the cleaning attachment can be shifted from tank to tank. For more info, ask Addlife Products Co., Inc., 2482 3rd Ave., Bronx, N.Y. 10454.

BUBBLES, BUBBLES, BUBBLES

In our last issue we mentioned a new aerating bubbler under the upcoming Marineland label. Here's the first picture on how the device throws up a veritable curtain of tiny air bubbles for the full length of your aquarium — on both sides, if you want that much aeration. It's called Bubble Wand. The tubing, a scant quarter-inch in diameter, appearing to have no holes at all, provides copious bubbling from the smallest air pump on the market. Dealers will stock it soon. If you



can't wait, write Aquaria, Inc., 800 N. Cole Ave., Hollywood, CA 90038.

GLASS & PLASTIC TANK

Did you check the photo at left? No ordinary aquarium that. It has four glass sides — but a plastic bottom, to absorb the strain of irregular table or stand surfaces, cause of common leaks. The Aquaria, Inc., people may sell it as a do-it-yourself setup. The plastic bottom, incidentally, is configured to improve subsand filtration.

COLORFUL WORD ON FISH

Fish Life magazine, a new full-size slick for aquarists, promises to be a showpiece of the fish hobby. First issue is due the middle of June. We hear the magazine has gathered a staff of competent experts on seemingly every aspect of . . . well, Fish Life in all its categories. Subscribe (1 year special rate, \$3.25) from the publisher, Pet Scene, Inc., 12506 Beatrice Ave., Los Angeles, CA 90066, or buy a copy (75¢) at your favorite fish shop.

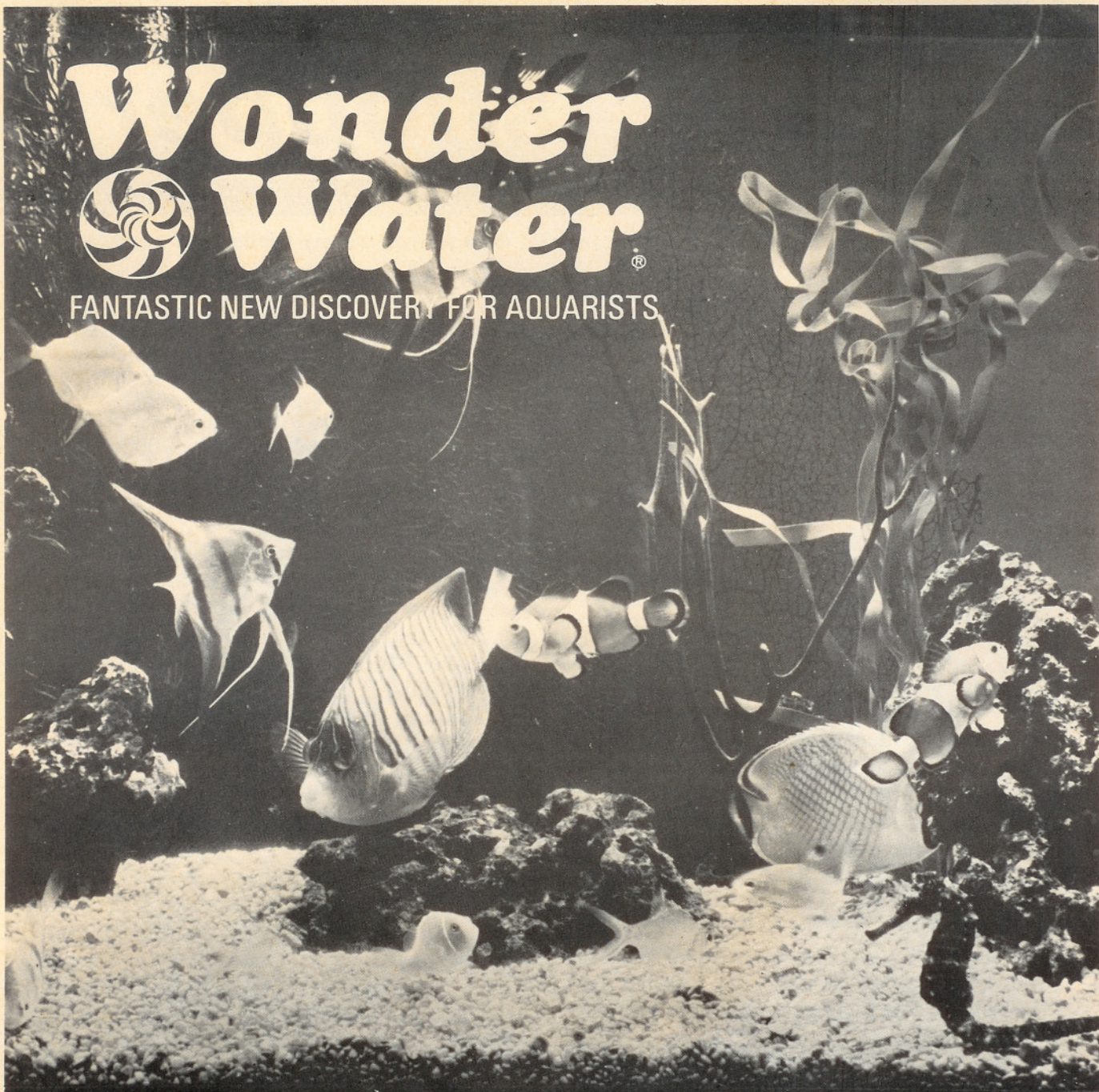
TRIMMING FOOD COSTS

Keepers of the prolific guppy can now buy the Tetra brand of guppy food in a new large size (2½ oz. plastic can, \$1.89). If you're a serious breeder and have a large number of these little friends to feed, the new can is a great buy. It saves over 22% in food cost.



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A RAKOWICZ-ROFEN ENTERPRISE

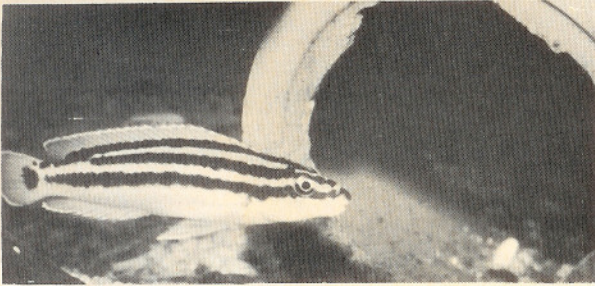


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CAMERA CORNER

CAMERA CORNER RULES

Best photo personally taken and submitted by a fish hobbyist will be published in this space. Prizes: \$10 each to winning photographer and his society. Black-and-white prints only considered. Prints should be captioned with name and address of the photographer and of his society. Fish and other detail in photo must be fully identified. Provide data on camera make, film type, shutter speed and f-stop, if possible. Pictures will be returned only if accompanied by self-addressed, stamped envelope. Mail photos to Camera Corner, c/o The Aquarist Shopper, 815 East 14th Street, Oakland, Calif. 94606.



This month's winner is a broadly striped *Julidochromis ornatus*, native to Lake Tanganyika in Africa. A fine flash photo by Edward C. Taylor, using Plus-X film in a Nikkormat FTn, set f.22 at 125th second. He and Tidewater Aquarist Society, Norfolk, Va., take \$10 each prize money.

Just released! Mr. Straughan's latest edition —

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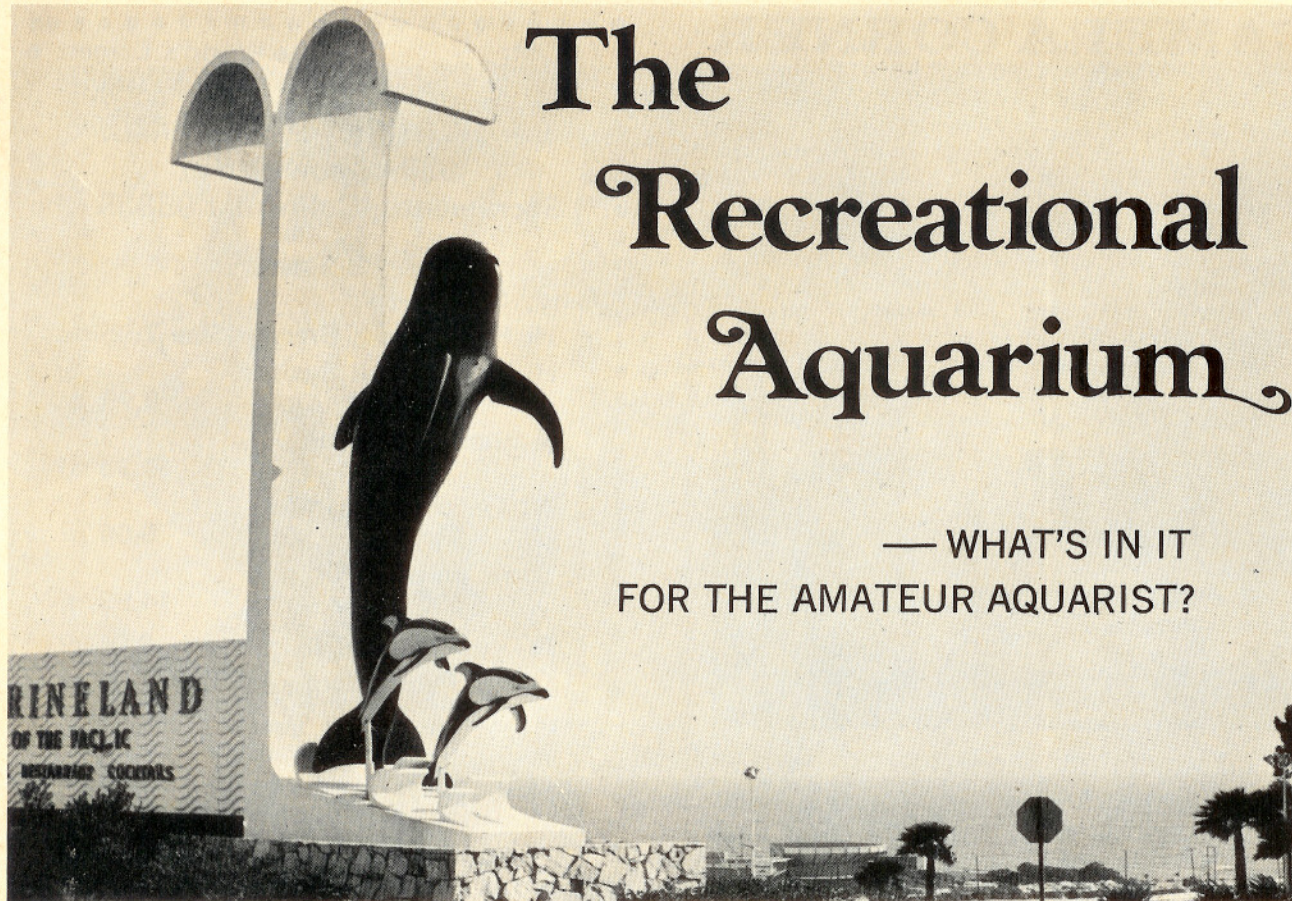


SYMBOL FOR QUALITY

Tetra

The Recreational Aquarium

— WHAT'S IN IT
FOR THE AMATEUR AQUARIST?



Marineland of the Pacific, perched high on a cliff overlooking the ocean, is a widely-known and popular fun place based on the fish sciences.

The Aquarist Shopper Interviews

JOHN H. PRESCOTT

Vice President-Curator

**MARINELAND
OF THE PACIFIC
Near Los Angeles**

SHOPPER: Can an amateur aquarist profit from a visit to a recreational aquarium?

PRESCOTT: I think he can. When a hobbyist comes to Marineland, he'll find there are many things for him to look for and to learn about, as affects the keeping of his own fish.

S: For example?

P: Well, there are chronic problems in caring for so many kinds of fish as we do. Here the aquarist can learn which combinations of fish can cause a problem, and which can live together. He can learn about which plants help create a satisfactory environment — plants that "go" with the fish.

S: What, really, is a recreational aquarium?

P: Marineland, actually, is an oceanarium. That is, we house and display principally ocean fish. But we are a recreational institution — aren't all aquariums?

S: Is the difference, then, that you put on a show, or demonstration for your patrons?

P: Basically, yes. However, the distinction is not well defined, because some municipally-owned aquariums are also beginning to put on shows.

S: Aren't your mammal exhibits — whales, for instance — largely a waste of time so far as the serious fish hobbyist is concerned?

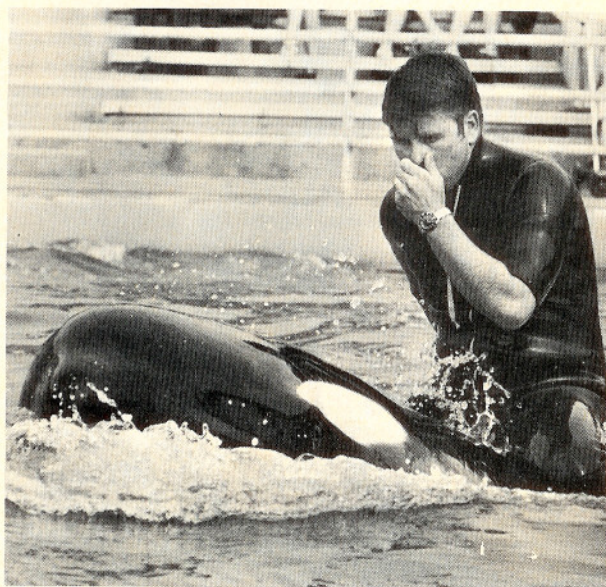
P: I don't think so. They afford a valuable demonstration of how very large water systems are handled, and also I think they give the hobbyist an unusual opportunity to see at first hand complex forms of ocean life.

S: Is there anything the amateur aquarist can learn from food diets or feeding methods at Marineland?

P: I would say probably not, because we usually feed only once a day, after operating hours. Still, there may be some informative data on the exhibit labels. Let me say this—most aquariums I know of are willing to devote some time to individuals with specific problems, as, say, the compatibility of fish, or condition of tank water, etc.

S: You mentioned your large water system. Is there something special about it?

P: Yes, our flow-through water system enables us to feed materials the hobbyist wouldn't dare fool with in a fixed-water tank. A half-eaten fish, for example, that lies in the bottom of an exhibit tank is no problem in a flow-through system, but in a fixed-water tank it could cause havoc.



Curator John Prescott steals a ride on Orky, 6,200-lb. killer whale at Marineland. Water for this huge tank is pumped direct from the ocean.

S: Precisely, what is a flow-through system?

P: Our water comes directly from the ocean. We pump from a sand-filtered well, some 11 feet under the ocean floor, into a 30,000-gallon tank. There the water is heated from its sea temperature of from 50° to 70°, to 78°. A valve is opened and the heated water moves into an exhibit tank and out again, and is returned to the ocean. A one-time pass through.

S: Where would an amateur aquarist visit an aquarium if he couldn't come here to Marineland?

P: There are many, many of them, really too many to list. But to mention

those in the large cities, Boston has the New England Aquarium. New York City has an aquarium. There's the National Aquarium in Washington. Another Marineland is in St. Augustine, Florida. The Seaquarium is in Miami. Ocean World is at Fort Lauderdale. Galveston-Houston has the Sea-Rama. In San Diego it's the Sea World. Redwood City, near San Francisco, has Marine World, and of course San Francisco has Steinhart Aquarium. The Shedd Aquarium is the place to visit if you're going to Chicago, but if you're headed for Hawaii, it's Sea Life Park. Vancouver has a municipal aquarium with a show, and Cleveland has a late-May 1970 opening scheduled for the Sea World of Ohio.

S: What does it cost to get in Marineland?

P: Tickets are \$3 for adults, \$2 for juniors, \$1 for children, and youngsters under 5 are free

S: By the way, what fresh-water tropical fish would the aquarist find here?

P: Not too many, frankly. As I said, Marineland is an oceanarium, but we do have some piranhas and some lungfish. Our main thrust is marine exhibits.

Marineland diver, standing in 540,000-gallon, 4-story-high tank, feeds a green sea turtle, while more prosaic forms of ocean life wait their turn.





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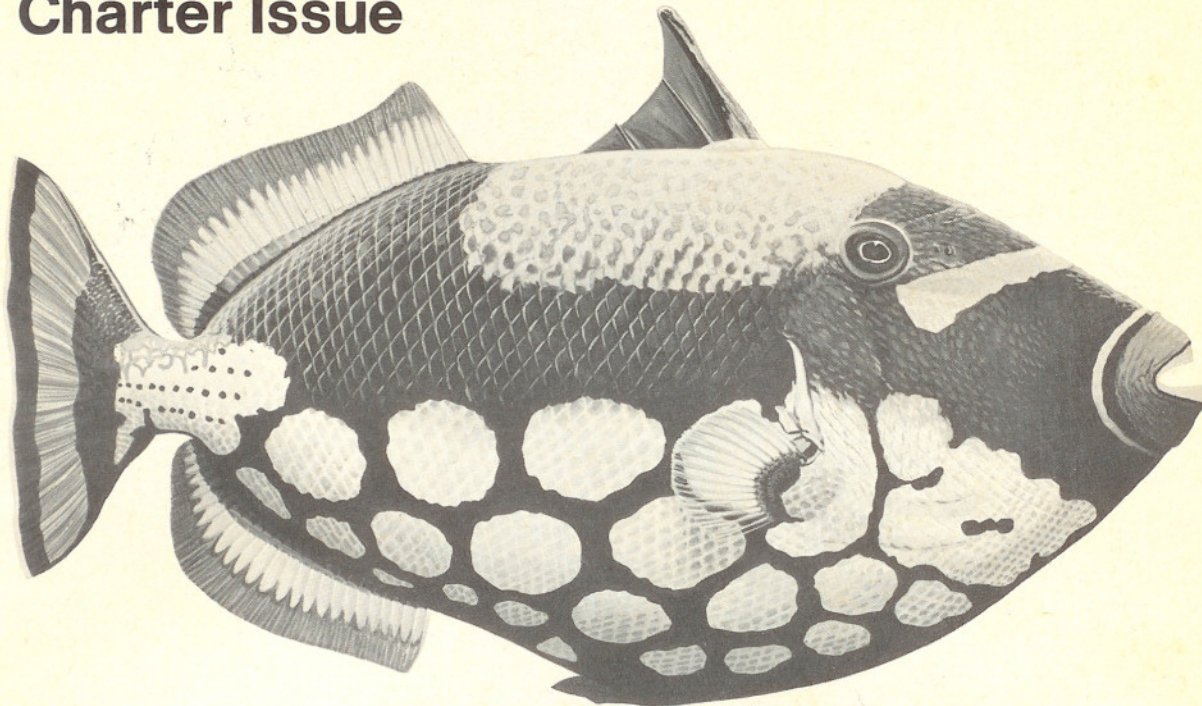
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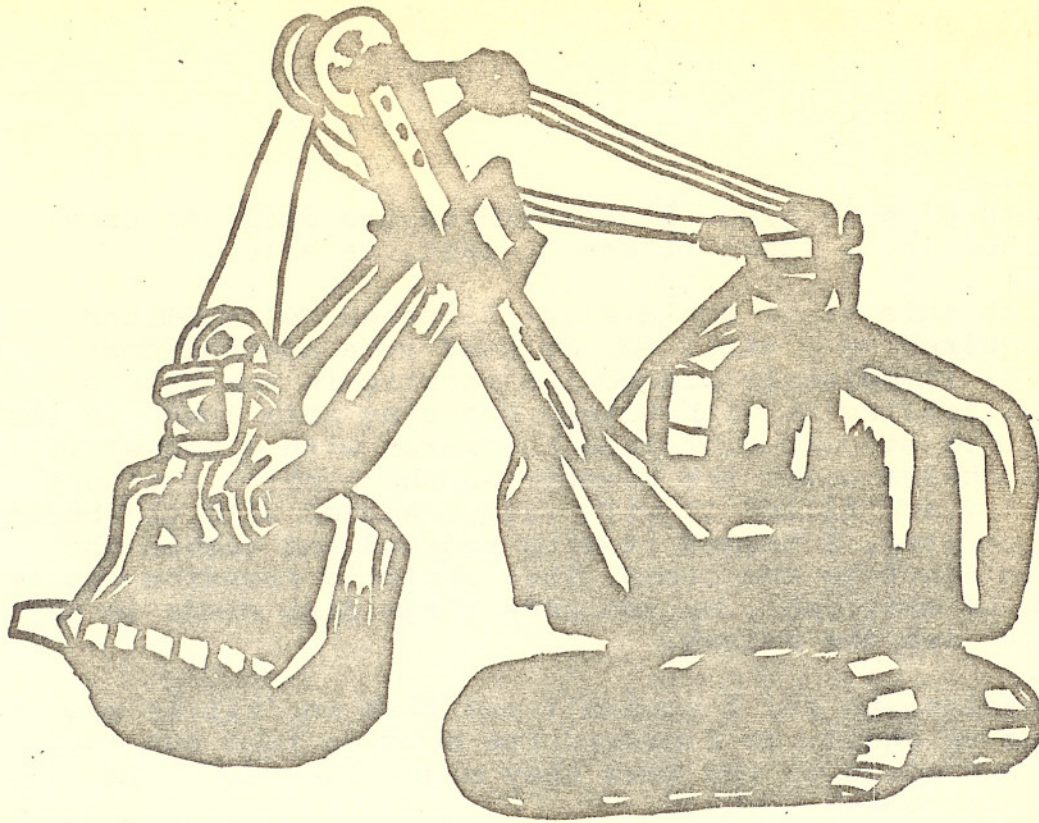
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SO YOU WANT TO MAKE A FISH POND OR HOW TO MAKE A \$2. FISH POND FOR \$907.59

By Dick Saleh
reprinted from the Harbor Aquarist
Publication of the Harbor Aquarium-
Society

So you want to make a fish pond, do you? Well, here are a few tips before you begin. Ask others around the club for expert opinions as i did.

An "expert" gave me the idea of a nice pond that would cost about \$2.00 to build. To start, you simply dig a hole 3 feet long and 2 feet wide and 18 to 24 inches deep. Then you buy some plastic from a "Build and Save" type store. the plastic will cost about \$2.00. Put the plastic in the hole, fill it with water and frame it with wood or rocks... Sounds quite simple, doesn't it?.... Well, here is my story.

After proper consultation with the experts, I began digging my pond to the right of my patio. The lovely abode of my yard was somewhat reluctant to give...as it broke my new shovel.

With pick in hand, I attacked to the duel. After a weeks battle... there it was at last...a hole.

With this great achievement I rushed to "Buildand Save" and acquired my plastic for my pond at a nominal cost of \$2.18. I immediately placed the plastic in the hole and started filling it with water. Noticing some lumps in the bottom...I stopped...drained the water with a bucket... put cardboard under the plastic so the pebbles wouldn't tear it...and filled it with water. Amazed with the beauty I had created, I framed it with redwood and tacked the plastic liner to the frame. This artistic creation was truly a work of art...so...my two sons threw dirt clods in the water to see the splash.

Needless to say I couldn't put fish in 'til it was cleaned up again. So I orderd the boys to take out the water and clean up the mess they made. They did this.... with thier beach buckets.

When I started filling the pond with water again, I noticed the dirt was getting wet around the pond....The buckets had torn a hole in my lovely pond.

I emptied the remaining water, took out the ruined plastic and replaced it with the new heavy duty plastic I had acquired at the "Buildand Save" store for the nominal fee of \$3.49. Now...I had a foolproof pond!

Somehow the dog got into the pond...with fish in it... and tore my indestructible heavy gauge liner. Nearly all the fish were dead, mostly from this black, 5-foot upright monster, and the rest were in very bad shape....I had to dump the whole mess.

Undiscouraged, I then acquired a meat cutter's tub.... about 5feet long, 2 1/2 feet wide and 32 inches deep. With pick in hand, I once again attacked the adobe and won after a bitter struggle. I placed my meat tub in the hole and stood back to gaze at my achievement. I then let my sons fill it with water and gathered a few fish to put in it. I also bought a pump for only \$10.98 so I could have a filter and water in the NEW pond.

Before putting the fish in the pond I realized that the tub was galvanized and toxic to the fish. So... I emptied the tub, using the pump to pump out the water. I was impressed with myself for the progress I had made...a steel tub for a pond and a pump to pump out the water.

After drying out the tub, I painted it with a clear plastic water-proof paint which i bought for the nominal sum of \$3.98 a quart. Two quarts were enough to properly cover tub. Back into the hole went the tub...I filled it with water , rigged up a filter and waterfall...put in my fish...and...at last...a perfect, indestructible fish pond!

Then...the rains came!

The pond overflowed and distributed fish throughout the yard... a tragic loss. Then the rains came again... and with my experience, I rushed to the pond and drained more than half the water out to give room for the rainfall, so it wouldn't wash my fish over the side...It rained four days and nights and created somewhat of a flood in my backyard. When I went out to see my pond... I gazed in amazement at a muddy and empty hole.

Looking to the other side of the yard where my wife's plants used to be...sat a very large obnoxious tub...my fishpond! Lightened by the draining of the water, with the flooding of the rains, my pond floated out of its loosened hole and came to rest in the plants.

Undiscouraged, I came up with a tremendous idea....I could tear out the plants and lovely dichondra lawn in front of the house and build a fish pond above ground and make it look like a Wishing Well.

With this thought, I rushed to the store and bought a plastic pool 3 feet deep and 10 feet across for only \$10.98Then...I tore out all the plants ...and dug up the lawnand... placed the pool in the center.

After the fish were in, I started the framework for the Wishing Well. A friend was kind enough to give me a ton of Palos Verdes rock to build up the sides of the pond. The next four weeks were spent with hammer and chisel, breaking the stones into the proper shapes. In the meantime, the local kids helped themselves to our fish and made kind deposits of rocks, tin cans, marbles and assorted trash to my lovely pond.

After thinking it over and discussing it with my wife, we decided it would be best to put the pond in back of the patio. So...I tore down the Wishing Well framework and removed the pond.

I gathered some cement block to build a new pond with(only \$15 worth!). Then i bought sand and cement for only \$7 and began the fishpond with the first row of block. Meanwhile, the front of the house looked a mess with all the broken rock around, so I built a rock retaining wall about 8 inches high around the front section. Impressed with the Palos Verdes

stone , I had to have it on the front of the house 4 feet high...this would make the rest of the house look odd, so I had it replastered... for only \$650, including the extra rock!

Back to the pond...I then put in the second row of block, and...decided the patio must be enclosed with three rows of block with screen above it...the third row of block is not completed yet on my fish pond...I ran out of money.

However, my fish pond will be done sometime this summer ...at a nominal cost of an additional \$200 or so. If you are planning a fish pond of your own, do ask for the expert advice of those who know...or...have it done by a professional.

After all, it only costs a couple of dollars to build a fish pond!

DID YOU KNOW ?

This information is reprinted from GUPPY ROUNDTABLE, Sept 69 The following statistics are the results of an extensive series of tests run by Drs. Larr, Robins, and Johns to determine which kind of foods would cause the largest number of fry.

Each test group consisted of three pairs of adult guppies which were fed only one kind of food...and no others..... during the 120-day test period. Each tank of test fish was fed three times a day:morning, noon and afternoon(4:00 p.m.) The dry foods tests consisted of alternate feedings of regular and flake food...the regular food being a 50/50 mix of two leading flake foods. (Since these tests were conducted , another brand of dry food has been tested which fits between #5 and #6 for production of young.

In the testing of beef heart it was found that feeding this material, even every other day, prolonged the guppy's from 25% to50%.

Bruce and Jeanie Larson confirm the findings of this study. They report that beef heart also appears to give excellent growth and amazing conditioning and color results if fed properly. They also report increased vigor. All of the preceding was observed in guppies.

FOOD TEST NUMBER 6642 (LARR- JOHNS-ROBINS)

Food	Total young	Males	Femeals
1. Earthworms(chopped)	178	87	91
2. Earthworms(chopped frozen)	164	81	83
3. Beef Heart	143	64	79
4. Tubifex	143	61	80
5. Brine Shrimp(hatched)	101	48	53
6. Gordon's Formula(liver)	79	39	40
7. Brine Shrimp(adult frozen)	76	37	39
8. Dry Food(flake & regular)	52	24	28
9. Freeze-dry(brine shrimp & tubifex)	40	23	17
10. Leaf lettuce	37	21	17
11. Peas	28	19	9
12. Farina	18	9	9
13. White Worms	16	7	9
14. Oatmeal	12	5	7
15. Bran	9	5	4
16. Bread	6	5	1

All low producing pairs were given earthworms at the end of the above test and all quickly gave results as in #1

17. Earthworms and dry food	194	93	101
18. Earthworms, beef heart and lettuce	221	107	113

Thier swordtails were also dying of an undiagnosed malady, but after beef heart they began swimming normally and have stoped dying. In a tank containing red minors, bleeding hearts, serpae, ect. thier colors came out as they would at spawning time and they have retained thier color.

The Larsons buy beef heart already cut and trimmed from the market and put it in the freezer. When frozen , they remove one portion and, using a vegetable shredder , shred only the amount to be used at one feeding. They recommend using only the smallest holes. Of course, do not overfed or the uneaten food will cloud the water. This reappears in the TROPICAL AQUARIST.

1. I have found that beef heart can be blended and then frozen. The blended meat is placed in "baggies" which are promptly put in the freezer. If your freezer is functioning properly, the temperature should be 0° Farrnhiet. If it is warmer than this the meat will take on an unpleasent odor the fish will still eat it, but it may not be as nourishing.

2. I would also suggest that you try to get Kosher beef heart. The Jewish dietary laws require that the meat be fresh , and naturally, the fresher it is, the more nourishing.

WHY SPAWN ?

by Dick Burdick

reprinted from Colorado Aquarist
publication of the Colorado Aquarium Society

A few nights ago some of the Society members were having a meeting; and as often happens, during a lull a discussion started on spawning fish. We got to speculating on what percentage of our members were or had spawned thier fish. I guess we finally figured about 75% had.

Driving home I got to wondering about the other 25%. Did they realize the fun they were missing? Did they think it was too difficult or complicated?

This got me to thinking about the reasons I spawn fish. I guess the main reason is just for the sheer pleasure of "fooling nature" and then raising the brood of fish to maturity. (Heaven knows it's not for the profit the way I go about it!)

Next, I got to thinking of the other members I know and their reasons. At first glance there seem to be almost as many reasons as there are persons. But then it finally boils down to the same reasons as mine. No matter whether they are our more advanced "scientists" who develop new strains (yes, we do have two or three members in this class;) or one or two members who delight in breeding "impossible" fish; or those of us who merely putter around and spawn the more common fish; we all have the same common motives--to get pleasure out of a relaxing hobby.

Some of you are probably now thinking "I get pleasure out of just watching my fish without the bother of the spawning. This nut dosen't know what he's talking about." Ah! Ha! But as the saying goes, "Don't knock it until you've tried it!"

Unless you're very lucky, you'll probably find that the first time you try, the cookbook recipes for spawning egg-layers don't always work. The fish havn't read the same book, nor do they consider themselves as rugged individualists who require thier own set of conditions.

Next, either accidentally or on purpose, you'll get just the right set of conditions for your set up, and away they go spawning like crazy. Or with livebearers, the females will manage to bear thier young two months running, while you're away for the day visiting your

Aunt Harriet, and the young are all eaten. And the next month will have the entire brood alone in an unplanted tank with no place for the babies to hide. But in either case, a few weeks later when they really look like fish, you can't help but feel pride in owning them. They really do appear to be much better fish than those you've seen in the shops or in friends' homes.

The next thing that invariably happens is that just a very few weeks later you come to the conclusion that it's not practical to keep 500 zebras in a 10-gallon tank, or the three broods of black mollies in your 7-gallon show tank. At this point, it would be no more possible to flush the excess down the drain, than to flush one of your children. Your next thought is "Well, maybe I can find them a good home"...with five puppies, yes! With 500 zebras, no!

Now before you go completely into hysterics, you remember the shop where you purchased the parents. In all likelihood if they're not already swamped with your particular fish, they will purchase your pride-and-joys at wholesale prices, or maybe swap you for something in their shop that you've had an eye on, but insufficient funds to purchase. Or, failing this, you can almost always sell to the local wholesaler at a slightly lower rate, but in larger volumes.

At any rate, you leave the store with your cash or merchandise feeling quite elated and thinking "found-money." (Don't figure the cost of the food to raise those tiny fry into these gorgeous fish, or even the many hours during the day that your wife poured food down their gullets, or the many evening hours you spent in their care.) If you're like the rest of us, as soon as you get home you start planning on spawning these fish again or maybe planning to spawn something a little bit more difficult next time.

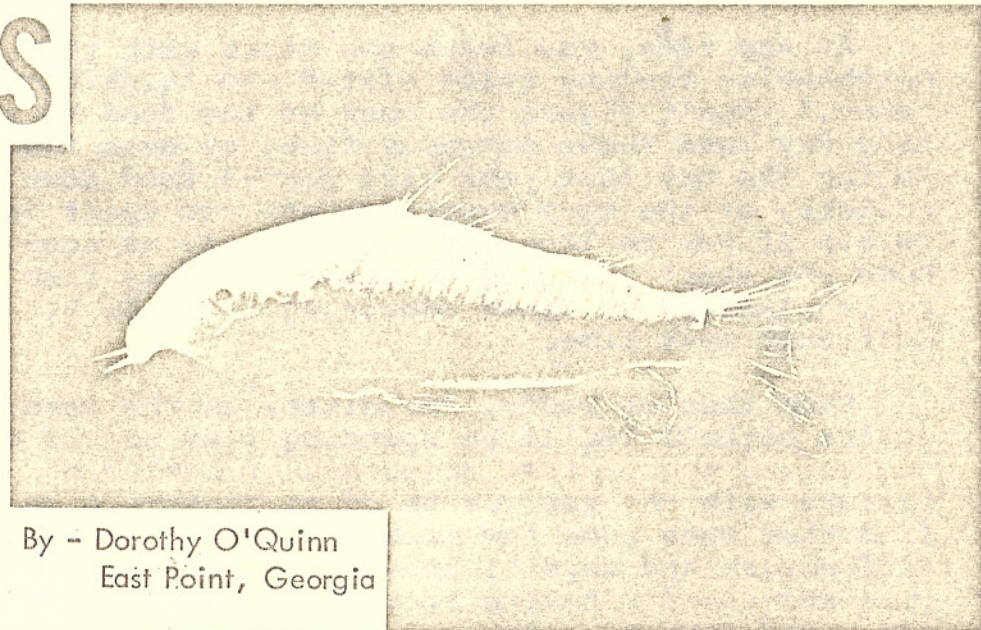
From then on buddy, (or sister as the case may be.) you're hooked! You'll be spending time at the meetings discussing your latest triumphs, or bemoaning your latest failure with the rest of us 75 percenters. Also, you'll find that when some new member comes up to you at the coffeebreak and says "I understand that you've spawned thus-and-so--I'm having trouble doing it, and wonder if you could give me a few pointers," you'll gush forth like the expert you've become, and feel ten feet tall. (Who knows, by golly, you may even give him the information he wanted.)

But in all seriousness, I heartily recommend that each of us take a try at spawning something during this winter season. For the ones that have never tried before, how about white clouds or garnets, zebras, some of the smaller barbs or the livebearers. For those of us who are "old hands" at it, how about either something new, or something more difficult such as the gouramis, bettas, angels, some of the less common cichlids, or maybe some of the easier tetras. And for our few experts, how about neons or cardinals, glass fish, clown loaches, red-tailed sharks, or some of the hard tetras. (A couple of these would be firsts, incidentally, and would be a real break-through in the aquarium world.)

It's impossible to explain to someone else the self-gratification that's connected with your first few tries at spawning. But it seems to me as if most of us eventually go on to more and more advanced spawning after we've mastered the essentials, and in this way become experts-of-sorts in many diverse fields of fish culture. This is one of the main reasons that our Society has maintained its stature over its twenty or so years of existence. Our "homegrown" experts help the novices, who in turn become the next experts (a very healthy-situation!)

**PINK
KITTENS
TITENS
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By - Dorothy O'Quinn
East Point, Georgia

Only in humans is albinism undesirable. Among plants, animals, birds and fishes it is a much sought after trait. White mice, white parakeets, white rabbits with pink eyes and ears--all are best sellers in pet shops. The hunter who comes upon an albino deer will never forget the experience. An albino dolphin adds a bit of prestige to any oceanarium. And so it is with our aquarium fishes.

Many aquarists are partial to albino fishes. They seem to have a certain delicate beauty and charm unlike that of their dark-eyed counterparts. Some of the most appealing of these fishes are the albino Corydoras aeneus, especially when they are small. A delicate pink in color, they may be thought of as little pink kittens. Nothing could keep you better entertained than these tiny catfish scrambling around the bottom of the tank head down, tail up, searching for the last scrap of food.

But what makes an albino? Without getting too technical, let's take a quick look at genetics and mutations. Every living thing, plant or animal, is made up of cells. Located in the innermost part of each cell are thousands of genes, each occupying its regular place on a certain chromosome.

Genes are responsible for all inherited traits. There are two genes for every trait, one inherited from the mother and one from the father. In each case, one will dominate the other, thereby determining which will be inherited from which parent.

The basic chemical of a gene is called DNA,.....deoxyribonucleic acid. It's like a thin thread on which there are four bases. The bases maybe thought of as a set of "instructions" passed on from parent to child. As long as the set of "instructions" arrange themselves in their regular order along the DNA thread, that specific inherited trait will be carried on through future generations without change.

But sometimes, through some mysterious prank of nature, the set of "instructions" in a gene becomes disarranged, changing the order of that gene in such a way that a new trait is formed. This is a mutation. It may be so minor it will go unnoticed. Or it may cause a dramatic change such as (thinking in terms of fishes) a color variation, a longer fin, a forked tail (lyretail) or albinism. Once the new order has been set up in that particular gene, it doesn't change back, but can be passed on, thereby creating a new and often very desirable strain of fish.

It isn't always as simple as it may sound. The new trait may be dominant in only a few of the offspring--maybe only one. It can be strengthened by breeding a son or a daughter back to the original parent fish with the new trait but it may take several generations to really establish the new strain.

In some cases the strange new order of a changed gene will cause either the males or the females with the new trait to become sterile.

When this happens it is necessary to use a male or a female without the new trait...but from the same cross if possible. You may still get only a few fish with the new trait, but the effort will be worthwhile.

The mutation we are here concerned with is one which changes the genes in such a way that pigment or dark color cannot form. If both parents have this mutation in their genes, and both mutated genes are dominant, the offspring will be albino. It takes two albino genes to make an albino.

Going back to the albino aeneus, suppose the mother is an albino. She would have inherited two genes. But suppose the father is a regular aeneus with no albino genes. None of the young from this pair would be albino, as each would carry only one albino gene and there must be two. The next move would be to breed a son back to the albino mother and then the probability would be half albino and half regular aeneus young, the albinos inheriting the two necessary albino genes and the regular aeneus inheriting only one.

The aeneus is said to be one of the easiest of all the Corydoras to breed in the home aquarium. Breeding the albino of the species is no different. It's all a matter of healthy fish and good conditions.

First, of course, you must have a mature pair of fish. Since albino aeneus are a little scarce on the market, they are usually sold before they become mature, so you might have to buy several small ones and let them grow up before you can be sure you have a pair.

The sexes may be distinguished in one of two ways: size and shape of the body or shape of the ventral fins. To determine body shape, look straight down on the dorsal surface of the fish. The female will be broad across the head and "neck" and the body will be quite full, while the male, head and body, will be slender. To examine the ventral fins, (the pair of fins near the center of the body on the underside) place one fish at a time in a glass jar. As you look down, you can easily see the ventral fins spread out from each side of the body. The fins of the female will be rounded while the male fins will be slightly pointed. But only if the fish are not fully developed is it necessary to look at the fins, for the well developed, well fed fish is easy enough to distinguish by body shape alone.

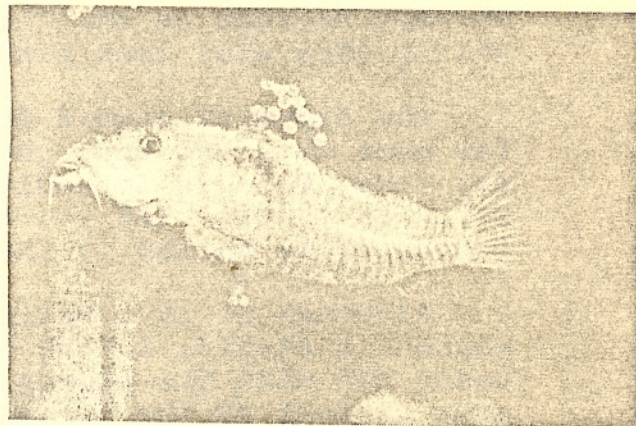
Corydoras may be spawned in single pairs or groups, single pairs being preferable. The tank need not be large. A five or an eight gallon size is fine. The gravel should not be coarse. Clean the tank and gravel thoroughly and set it up with an undergravel filter and a few plants. Fill with part tap water and part water from another clear, healthy tank and let the filter operate for at least one day, or until the tank is perfectly clear.

Add the perscribed amount of methylene blue or one of the acriflavina remedies. The temperature should be 75 to 80 degrees and the PH neutral. (Catfish cannot tolerate acid water. It is one of the chief causes of death.)

Water in the breeding tank must be kept clear. When the eggs have hatched, frequent feedings are necessary, and it's almost impossible to keep from over-feeding--especially for the inexperienced. Once the water has clouded or fouled up, there's not much you can do. A charcoal filter of any kind is out of the question as it will suck up the babies. It's also impossible to syphon off the bottom of a tank that is full of active baby catfish. For this reason gravel with an undergravel filter is preferable over the bare bottom tank most often recommended.

As a rule, catfish do just as well if both breeders are put in the same tank at the same time. They should have daily feedings of live food such as white worms, or frozen brine-shrimp. If they do not spawn within a reasonable length of time, you might try separating them for a few days.

When they are ready to spawn they become very active, the female searching out spots on the glass with the male hovering over her. After much chasing back and forth, up and down, the fish will suddenly settle together on the bottom, the male rolling over on his side and the female, in a right angel position, placing her mouth and barbules in the area of his ventral fins. At the same time four to six eggs will drop into a littl pouch she makes by holding her ventral fins together. After a few seconds, the female swims off independantly, selecting a spot on the glass or plants where she carefully presses the eggs and the chase begins again.



THREE VIEWS OF CORYDORAS
SPECIES SPAWNING

About two or three hours later the breeders, thier task finished, will rest quietly on the bottom of the tank. They should be removed.

The eggs are large and adhesive. There will be several "patches" on the glass or plants. If the eggs are fertile, they will be clear, turning to amber by the second day. (Albino eggs are a lighter color than ordinary aeneus eggs.) If, however, the eggs are milky or white by the second day, they are not fertile and will fungus. In this case, you know you have a good female, but the male is questionable. You might have two females, as a loaded female will sometimes deposit her eggs without a male being present.

The eggs hatch in about 3 to 4 days. Albino fry are like tiny crystal clear beads and harder to see than those regular aeneus. Feed a few drops of one of the liquid fry foods (can be found at your pet shop, already prepared in a tube) two or three times a day for the first three days and then start newly hatched brine shrimp. As soon as the "kittens" begin to eat the brine shrimp they will look pink.

The drops of liquid food should be continued for a few more days and then you can switch to a very fine dry food. This is in addition to the daily brine shrimp which is a must. (If you can't hatch it yourself, frozen brine shrimp is the next best thing.)

Although it is sometimes thought that albinism weakens a strain, I have not found this to be so. At least not with the aeneus. They are just as hardy and grow as fast as the ordinary aeneus. In fact their groeth is spectacular from the the very begining.

Raising albino catfish can be a delightful experience Give it a try and perhaps you will soon be enjoying your own pink kittens.

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