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SPRING 1964 FISH SHOW



Volume XXXV
Number 5
May 1964

aquarium journal

The Magazine Aquarists Believe In

Published by the
San Francisco Aquarium
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Published monthly by San Francisco
Aquarium Society, Inc., Steinhart Aquar-
ium, Golden Gate Park, San Francisco
18, California. Telephone BAyview
1-0054. **Subscription rates:** \$5.00 yearly
in U.S., Canada, and Latin America,
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tents of the Aquarium Journal may not
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Entered as second-class matter February
11, 1948, at the post office at San
Francisco, California, under the Act of
March 3, 1879.

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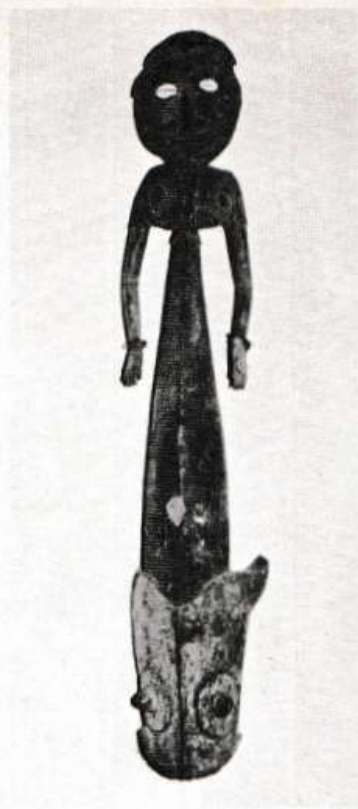
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cover photograph

Lyretail molly was developed by Mabel Ervin of Studio City, California. Read how this talented aquarist learned cross-breeding of tropical fishes in Miss Ervin's article beginning on Page 224.



Li
Pierogi d...



Story behind the scenes of the famed
motion picture starring Don Knotts

How "Mr. Limpet" Created

IN THE SPRING of 1962 a rather unique exhibit was shown by the Otis Art Galleries of Los Angeles. Not only was this exhibit different, but it was to furnish an inspiration. An inspiration that was to ultimately grow into a motion picture that had a fish as the "hero."

This showing by the art gallery was unusual because it featured only art objects that had fishes somewhere in their motifs. Two large rooms were com-

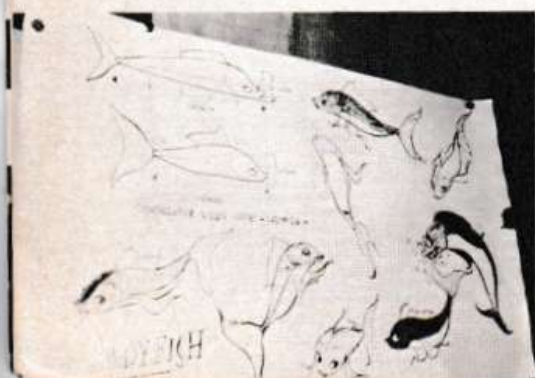
Diane Schofield
Burbank, California

pletely filled with wooden carvings from the South Pacific; bronze fish from Japan; ceramic fish from Mexico; eucalyptus bark paintings of fish from Australia;

Photo: A household hook from New Guinea illustrating the combination of man and fish. All photos in article by the author.

carved ivory fish done by Eskimos – and then there were modern paintings and sculptures of fishes. One of the most interesting exhibits was the Mr. and Mrs. Robert L. Lynch fish fossil collection.

Into this exhibit one day walked a



man, John Rose, by name, who had once been story-board editor for Walt Disney Productions, but who now was associated with Warner Brothers. He was a man with a problem and this problem was that he had to give personalities to fishes. Now, admittedly most fishes do have their own "personalities," but they are that of a fish. Mr. Rose had to give human attributes to some particular fish "personalities" for he was making a movie of a humorous novel by Theodore Pratt, "The Incredible Mr. Limpet."

Thinking that what better place to get inspiration for fish that had "appeal" than an exhibit that featured only fish motifs, he strolled through the Otis Art Gallery exhibit. Before he had gone very far, he immediately leaped to phone all of his artists to join him there. For two days they sketched and sketched, taking their inspiration from first one exhibit and then another.

Through trial and error, much as a sculpture finally appears out of a piece of crude stone, the finished characters appeared from rough sketches and discarded ideas. These were the three main characters that were to be the stars – Mr. Limpet, the hero; Ladyfish, his girl friend; and Crusty, the hermit crab comedian.

"The Incredible Mr. Limpet" is the first feature-length production in motion picture history to attempt a blending of live-action and animated cartoon techniques as a total unity. This was tricky because two worlds had to be portrayed. The world of above-sea life, which had to be the normal world of human beings, and the undersea which had to be cartoon in character. The trick was to make the audience see no abrupt division between the two and to accept it as completely normal that an aquarist should

Photos: Original sketches made for the cartoons in "The Incredible Mr. Limpet," showing the forms and positions as taken by the three leading characters.

C. A. S. M.
5/11

A.S.'s
of p.m.

wish to become a fish and to have that wish come true.

Mr. Limpet, as portrayed by Don Knotts, is a standard characterization of a henpecked little bookkeeper. His one

is just one of my nightmares!" as he spied his new tail and lamented, "Is this me?" Then, as he tried out some of his newly acquired "talents" he discovered that perhaps being a fish might not be



Photo: John Rose, producer of "The Incredible Mr. Limpet," shown visiting the exhibit where he culled many of the characterizations for the film.

escape in life is to the world that all aquarists know - that of clucking over his small aquarium. Bessie, his wife, as played by Carol Cook, takes a very dim view of this sort of thing, together with his absorption in lofty books on "Reverse Evolution." If this were not bad enough, it is wartime and he has been classified 4F, due to poor eyesight.

One hot autumn day in 1941 at Coney Island, Mr. Limpet, to watch a school of fish below, leans just a bit too far over the railing of a little pier and tumbles in the water. There is some speculation whether he really did fall or whether it was a subconscious wish to become a fish. In any event, a rather startling metamorphosis takes place. At first Mr. Limpet thought, "Oh no, this

such a bad idea at that. The one tie that he kept with his terrestrial life was a pair of *pince nez* glasses.

Mr. Limpet watches George, his machinist mate friend, dive in to look for his "body" and then take his weeping "widow" home. Although he is delighted to escape from a world of frustrations, he now starts to become lonely in this new medium, so he tries to make friends with a school of parrotfish, who snub him painfully.

Finally he does acquire a girl-friend, "Ladyfish" a rather shapely lass for a fish. He also discovers a brand new talent, a distinctive "thrum" sound which becomes his protective signal of undersea power.

Another friend that comes his way is

a rowdy little hermit crab, Crusty, who is the voice of actor Paul Frees. Crusty listens with a great deal of skepticism about his tales of once having been a human being, but accepts him anyhow as sort of a kook who needs help.

Although Henry Limpet couldn't serve his country as a man, he learns that he can serve it as a fish. This all comes about when he surfaces beside a warship and announces he's Henry Limpet and offers to lead it through the sub-infested waters. For a long time he was one of the heretofore carefully guarded "Top Secrets" of the Navy during World War II — an unimpressive Brooklyn book-keeper turned fish, who unexpectedly was able to delve into the mysteries of the deep and acquire the power to stop the Nazi U-Boat menace in the Atlantic Ocean.

After returning a hero Henry Limpet decides that he doesn't ever wish to return to human form again — his happiness lies beneath the surface of the

water, so together with Ladyfish, Henry swims back to Coney Island to say good-bye to Bessie, his air-breathing wife. Bessie places a new pince nez where Henry's nose should have been and moans, "Am I the widow of a man or the wife of a fish?" Henry answers reasonably enough, "Well, you couldn't very well keep me in the bathtub, could you?"

And as Henry and Ladyfish swim away, fin in fin into the sunset, Bessie calls tearfully after him, "Take care of yourself. You know how you always catch cold when you get your feet wet . . ."

To show the tie-up of the film and the original exhibit, the Otis Art Gallery recently put on another exhibition. This one was to show how the cartooning developed from the original piscatorial creations. To publicize both the picture and the art exhibition, the galleries

Photo: A temporary fish pond was set up in the galleries for the exhibition. It is made of plastic spread over bricks.



Handwritten text in the bottom left corner of the page, possibly a signature or note, including the name "Dana King" and some illegible scribbles.

A-S: SINX Broom
of Ph. L. K.

had a reception. It was at this reception that I was fortunate enough to meet and to chat for a while with Mr. John Rose, the producer of this picture and one of the men to adapt the original book to the screen version. After talking to Mr. Rose for a short while, it was evident that here certainly was the man for such a venture for his proximity to fish dates back to the time when he was coming out from New York to California on the train with his family as a lad. His father was the aquarist and no such trip was going to deprive him of his goldfish, so the goldfish rode in a pail beside them in the chair car all the way to Denver, where Mr. Rose's mother, by a slick ruse, managed to see that the fish got off while the family continued on to California. Once in California, however, his father acquired more fishes.

Another interesting sideline is that Mr. Rose went to Dartmouth with the creator of the Dr. Seuss books for children, Theodore Seuss Geisel. As a matter of fact, it was through the inspiration of one of Mr. Rose's pets, a gin drunken turtle, that the first Dr. Seuss book was written!

As a true aquarist, Mr. Rose was appalled at what he called, "at least fifty mistakes" that the production crew made insofar as Mr. Limpet's aquarium and the care of his fish were concerned. He said that he was tempted to have a contest, "much like those that often run in magazines with the caption, "See how many mistakes you can find in this picture!"

But mistakes or no, "The Incredible Mr. Limpet" is a pure delight of fantasy, but then, come to think of it, who hasn't at one time or another felt the urge to dive right in and become one of "Them"?

See "The Incredible Mr. Limpet"

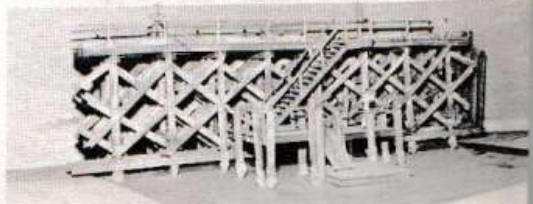
MAY, 1964



Photo: (Above) some of the various fish models used by cartoonists to get the idea of motion for the film.



Photos: (Above) Original newspaper article about the first exhibition which brought Mr. Rose and his team of artists. (Below) Model of the pier from which Mr. Limpet falls to become a fish.



PART II

FROM TIME TO TIME I scavenged the fish stores for culls or other deformed, injured, or diseased fish (a risky procedure, but this fish seems almost disease free). He disposed of them with the usual implosive suction. Some few were too agile for him by day. These he caught, taking advantage of superior eyesight, at night, "ghosting" after them

a territory, etc., but the artificial environment will lack (*leer* = empty) a potential mate, or nesting materials, or the right kind of territory. A minimal external stimulus (or none at all) will often serve to set off the behavior, which then looks bizarre and purposeless.

So it was that Gort puzzled me one evening by cruising back and forth in front of the glass, peculiar rapid tremors

Before moving up to the "big fish class"

read this biography of an "Oscar" named:

"Gort" the Monster

by what was available from streetlamp or moon. Under the circumstances, I expected him to appreciate the same frozen fish which the danios and neons and gouramies went for so avidly. Instead, he would spit it out as if it were putrid, and soon learned to avoid it altogether. There is no accounting for tastes, even among fish.

Leeraufreaktion

This is a term coined by the German zoologist Konrad Lorenz, and refers to certain kinds of behavior of animals taken from their natural habitat. Often the animal will be driven, usually by hormone changes, to carry out such activities as mating, nesting, establishing

William S. Service, Jr.

Durham, North Carolina

going along his body. (The mirror-clear reflection of the fish one sees in the side-glass of an aquarium is not seen by the fish; but when the tank is illuminated and the surrounding room is darker, undoubtedly they do get a fair reflection.) At the same time the pinkish bands on the fish grew lighter, more vivid, while the orange of the somber "eclipse" mark on the caudal peduncle became fiery. As the days went by he became wilder, and put on, in disorderly sequence, the whole fighting-defending-mating display. He would excavate great pits all over the bottom, scooping up and spewing out mouthfuls of gravel until thwarted by the surface of the plexiglass bottom-filter. He would roll, and lash, and flare his gill covers at anything or nothing. A large rock lay on edge at one end of the tank: opening his mouth he would charge it, make hard contact, give a second or third push: over it would go. The few smaller stones he

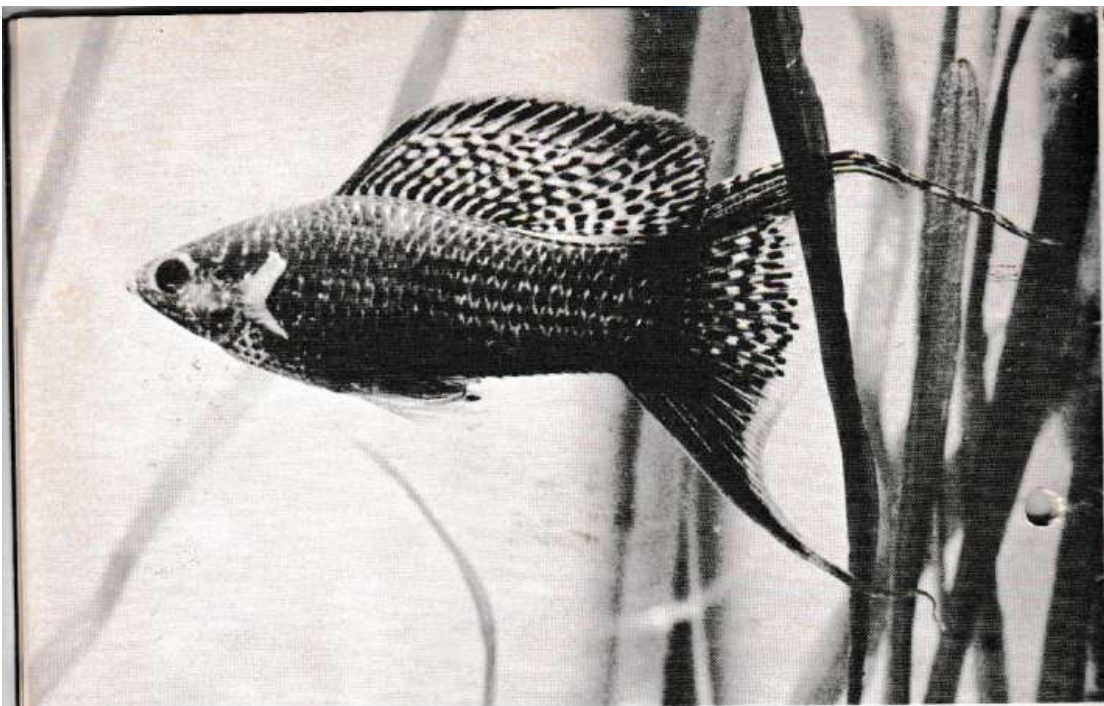
(Continued on Page 232)

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Dreams Come True!

(See Cover Photo)

THE AVID hobbyist dreams of having a fish unlike anything in other hobbyists' aquariums. How can this be possible? Astronomical funds have been expended to bring rare and unusual fishes to public attention. Great difficulties have been encountered in exploring hitherto unseined ponds and streams in out of the way places. There are comparatively few aquarists able to try their luck on such a journey, and fewer who are even remotely successful.

To recognize a potential aquarium fish is not necessarily easy. Some fishes have little color in their natural state and only develop interest to us after they have had selective breeding in home aquariums. Others lose their beauty and

Mabel Ervin

Studio City, California

robust good health by inbreeding, confinement, or the lack of their natural foods.

When new and interesting fishes are found there is no guarantee that they will arrive safely in the aquarists tanks. Changes in water temperature or lack of oxygen can be disastrous. Some fishes are simply delicate and do not survive transit or aquarium life. Shipping by air has enabled many to arrive in fair

Photo: A magnificent male "smoke" lyretail molly. This large-bodied fish shows a perfect pattern. The large dorsal is edged with orange as is the caudal. Main body color of all "smokes" is a svelte dark gray. Photo by McGill.

McGill
2 Dec 1951

condition, but red tape and delays on arrival dooms far too many before they can be brought to the peace and comfort of an aquarium. The few fishes that survive the long journey are in a weakened condition, prone to disease and maladies of all kinds. To be able to collect, transport, then to keep and breed these newcomers is a tough accomplishment.

When some of these rare fishes or their progeny finally complete their devious journey to a dealer's tank few of us can afford them. The price drops as the supply equals the demand. By the time the market is glutted they are no longer considered a rare treasure but just another fish selling for pennies. Hard to breed fishes hold their value longer for obvious reasons. As a rule the easiest fishes to breed are the various livebearers. Here we have the answer to the aquarist demand for experimental material.

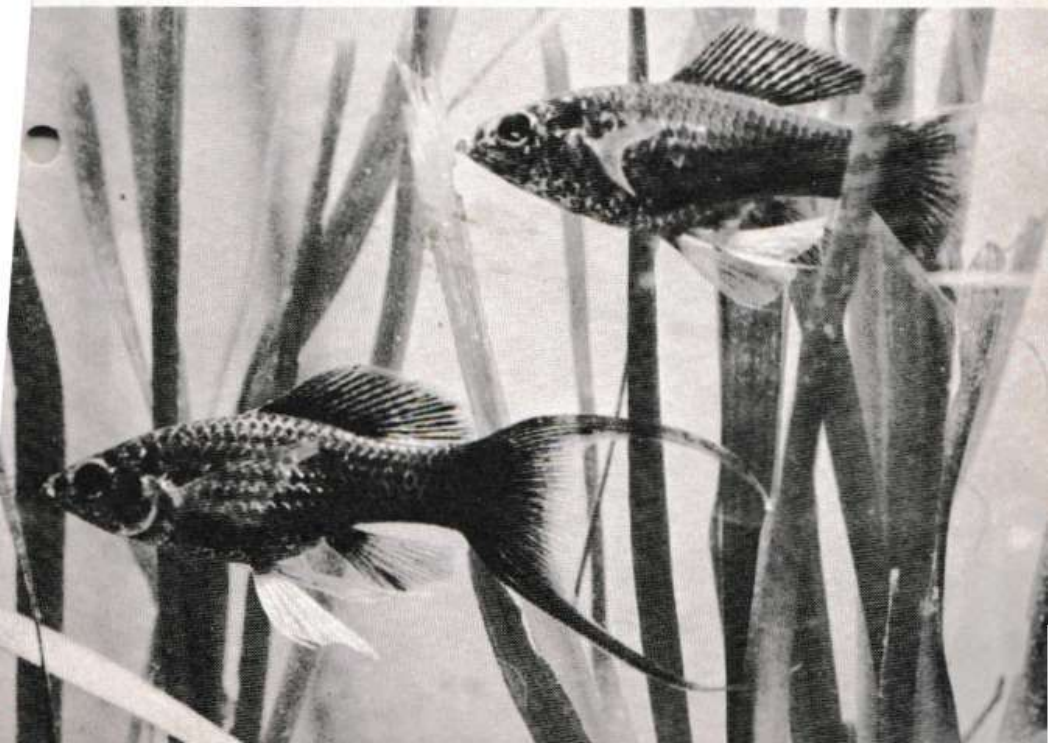
Lebistes reticulatus, the lowly guppy, is a fantastically durable little creature. It is a mildly attractive little fish in its

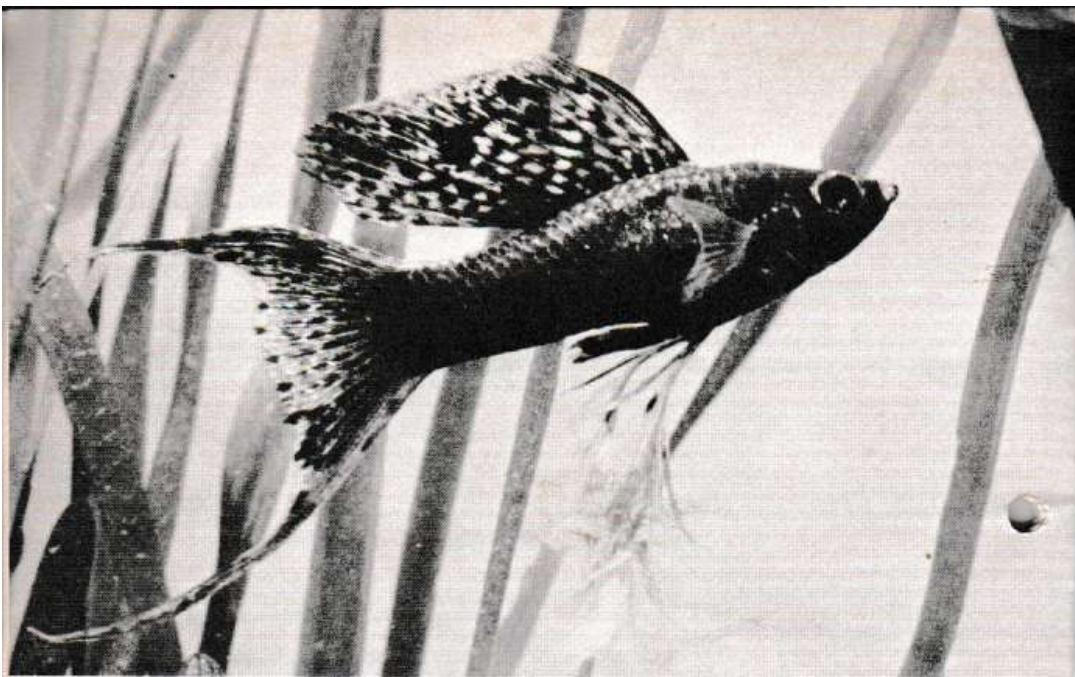
natural state. At first guppies were expensive because they bore living young. The novelty wore off but hobbyists realized the potential of this little creature. By careful attention to breeding, the males are now a far cry from their forefathers. Astoundingly beautiful colors and combinations of colors have been developed, as well as tails of all sizes and shapes. More recently color has been bred into the females also.

Each individual guppy is an entity in itself as no two are exactly alike. Guppies were an expensive and rare fish when they were first introduced to aquarists. Being a prolific breeder the price dropped to an extreme low. Now the carefully developed choice guppies sell for as high a price as about any fish on the market. The interest in these astoundingly beautiful little creations continues to grow and guppy associations are springing up everywhere.

The swordtail, *Xiphophorus helleri*, is

Photo: Two females of the "smoke" lyretail molly. Bodies are well-proportioned and the orange color of the throats is attractive. Note the well-developed ventral fins with extended rays. Photo by McGill.





one of the most popular aquarium fishes. These easy to breed fish have been crossed with the varicolored platy, *Xiphophorus maculatus*, to produce many color varieties.

Thelma Simpson, a hobbyist of Gardena, California, found a different appearing baby swordtail in with its tiny brothers and sisters. It was given special attention and developed into a male red swordtail with an unusually high dorsal. This was bred to some of its sisters to establish the Simpson hi-fin swords. They are easily recognized by a scarf-like delicately beautiful dorsal fin. One of the most delightful points of this new fish is that the females are every bit as spectacular as the males. Unlike the guppies that took years of development by hundreds of enthusiastic aquarists, the

Simpson hi-fins are the achievement of one person.

The original hi-fin reds having been crossed with a variety of other colored swordtails, produced many colors and combinations that are now available to grace our tanks. These beautiful fish are not always available at the dealers but are well worth searching or waiting for.

Another old standby and favorite is the molly. These are prevalent in the southern part of the United States and Mexican waters. You can find no more a prolific livebearer anywhere and consequently they are in good supply and inexpensive.

The finest mollies have large dorsals, sometimes almost as "large" as the fish itself. By years of special breeding a gorgeous velvety black fish has emerged, the black sailfin, as we know it. There are a number of marbled mollies with varied amounts of black and white. A few with a bit of orange in the caudal

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Photo: This male "smoke" lyretail molly is slender in body. The brilliant orange color in the dorsal and caudal fins contrasts beautifully with the dark gray body. At maturity these males have developed extraordinary white tassels on the elongated ventral fins. Photo by McGill.

and dorsal fins are also on the market. One of the most elegant of mollies is *Molliensia velifera*, a light blue fish with considerable orange on it. The large dorsal fin, when spread, is a sight to behold.

The "friendly" molly seemed doomed to mediocrity until a breeder in Singapore, Mr. Cheah Yang Meng, found a female with a different tail. The offspring were carefully bred and screened and the exotic new lyretail black mollie came into existence. Many of us immediately jumped on the bandwagon and started breeding the imported lyretails to some of our old favorites. A reawakened interest in mollies was born.

If given reasonable attention to their needs these livebearers will prosper in any aquarists tanks. They are not vicious so can be kept in community aquariums. Feeding is not a problem as both babies and adults thrive on dry foods although any live food that is available will be of benefit. What more experimental material could we ask for.

Aquarium societies and exhibits have encouraged the aquarists to raise better and unusual fishes of all kinds. We need not spend thousands of dollars to explore the unknown in our attempt to have a "different" fish. Exorbitant prices do not have to be paid to have a "first." The potential is right in our own aquariums.

Cross breeding to establish color or form is as exciting as any hobbyist could desire. By selective breeding in my own tanks the red Simpson hi-fins have finally produced progeny that are blue, with and without a bleeding heart, comet tail, plain and wagtail. The imported lyretail mollies are the forefathers of regular and sailfin lyretails in both black and grey. The greys are lightly tinted with blue and yellow which gives them an iridescent and more delicate appearance. I have developed a superb scarf-like dorsal with extremely long points on the lyretails. Every possibility is being ex-

plored in my own tanks, and, I am sure, in many others.

Do not waste time dreaming of a searching trip to far away places. Take a good long look into your own and your dealers tanks. Decide what you would like to experiment with—roll up your sleeves and start doing instead of dreaming. There are so many thrilling developments just waiting for us all. If you want something "different" why not develop it? ◀

CLUB NEWS

South Hills Aquarium Society
(Pittsburgh, Pennsylvania)

At the March meeting of the S.H.A.S. the game of "What's My Fish" was played, at the Dormont Recreation Center, Dormont Swimming Pool, Banksville, Road, Pittsburgh. Meetings are held at 8:00 p.m., according to Lou Bott, 125 Revere Drive, Pittsburgh.

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ANOTHER chapter in the aquarium spawning of piranhas has been written, this time by Mr. Emanuel Ledecy-Janecek, curator of fishes at the Lilly Ackerland Fleischmann Memorial Aquarium (Cincinnati Zoo). The piranhas in question are *Serrasalmus spilopleura* (Note: "*spilopleurus*" is incorrect) and interestingly enough, these fishes were originally obtained by the Fleischmann Aquarium from the Shedd Aquarium in Chicago, the latter having the honor of being the very first in the world to spawn any piranha in the aquarium.

Recently one evening at approximately 6 p.m., Mr. Ledecy noticed some unusual activity on the part of a pair of *spilopleura* which were housed in a 300-

gallon aquarium containing many other fishes (e.g., *Exodon*, peacock dorsal cichlids, guppies, etc.). The fish, which normally are a light, silvery-gray covered with small but bright spangles with an orange throat and forward ventral area, were much darker in coloration. They retained a close proximity to each other (perhaps 3 to 4 inches) which also was unusual. Occasionally, the smaller fish of the pair nudged the side of its partner with its snout. During this prenuptial play, the pair were about 18 to 24 inches from the surface of the tank (this was a very deep tank.)

Then, both fish rose slowly through the water and parallel to each other, their heads slightly above the horizontal axis. The aquarium at this point was provided to a depth of about six inches with floating plants, i.e., *Hygrophila* and water sprite. When six inches from the surface, the fish tilted up rather sharply, came even more closely together and with a trembling motion, expelled several hundred eggs. Some of the eggs immediately adhered to the plants (mostly on their fine rootlets) by means of a long, sticky thread, while others floated to the bottom. The latter were eaten in a leisurely manner by both the parents and the other tank inhabitants.

To say that Curator Ledecy was excited is an understatement and when he had sufficiently recovered, he dashed backscene and dipped eggs, plants and all, into a plastic tray. He diluted this water by half with filtered snow water, added some methylene blue and set everything to one side at a temperature of about 76-78° F. (perhaps a bit higher

Albert J. Klee

looks

• Under the Cover Glass

than the water in the breeding tank.) At the end of 43 to 48 hours, the tails were out from every egg, however, each fry remained suspended upsidedown by its thread (the thread was about 3/64 of an inch long, and still attached to a plant) for another 6 to 8 days. The eggs were quite whitish, similar to some *Corydoras* eggs. I measured a few eggs under the microscope and found them to average 1.8 mm in diameter. The still not free-swimming fry were also measured (all of these measurements to within plus or minus 0.1 mm), averaging about 6.0 mm. The yolk sac of the fry was very large and it also was colored a chalk white. At the end of a period 8 to 10 days from the time of spawning, all fry were free-swimming. They readily took brine shrimp nauplii from the start but were switched to microworms two weeks later. The Fleischmann Aquarium now has many baby piranhas swimming

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about, and Curator Ledecy is a proud "poppa" indeed!

One of the finest booklets on the betta (i.e., *Betta splendens*) that I have ever seen is the recent Buckley Press publication (Buckley Press, Ltd., The Butts, Half Acre, Brentford, Middlesex, Great Britain; price postpaid \$0.60) authored by Dr. F. N. Ghadially and titled, "The Fighting Fish of Siam." This is a book-

The booklet is divided into four parts, viz., the betta as an aquarium fish, breeding of the betta, diseases of the betta and finally, colors and color inheritance. If I were to point out a weak spot in the book, it would be in the last named chapter. Here Dr. Ghadially teases us but then fails to satisfy the appetites for additional information that he has created. But in spite of this, the information



"Well, maybe you better put your hands down ...!"

let with honest-to-goodness "meat" to it, virtually nothing in the booklet being superfluous. Furthermore, it is written in a down-to-earth manner and those looking for the "how to" will find it here. Dr. Ghadially is Senior Lecturer in Experimental Pathology at The University, Sheffield, and one of Britain's outstanding aquarists. He is well qualified to write about bettas (and many other aquarium topics as well.)

that he presents remains fascinating. For example, Dr. Ghadially shows that it is theoretically impossible for a truly pure strain of blue bettas to be established. I strongly suggest that if an aquarist really wants a booklet on bettas which definitely has something to say and says it well, that he purchase "The Fighting Fish of Siam."

An interesting account of the spawning of snakeheads (i.e., *Ophicephalus*

striatus) is given by Jose Yapchiongco of the Department of Zoology of the University of the Philippines, in a recent issue of *Copeia* (the publication of the American Society of Ichthyologists and Herpetologists). A pair was placed in an aquarium, 20 x 24 x 36 inches, and subsequently spawned. The nuptial play consisted of various movements (e.g., "enfolding," as with *Badis badis*.) *Ophicephalus* is a nest builder, both sexes taking part in its construction. At one point in the spawning, male and female were seen coming from opposite directions, then swim towards the nest at the surface and level off an inch or so below it. The male takes on a position with his tail end at the head end of the female, the fish all the while keeping abreast and parallel to one another. As contact between the fish is made, both bend upon each other, belly to belly, with both vents opposite each other. Quivering and in a U-shaped position, the pair drifts to the bottom, thereupon eggs and milt

are released. The eggs then rise to the surface, directly into the nest. All of this is repeated until the entire batch of eggs for the period is laid. The situation is contrasted with some humor, with that of the betta whose eggs fall to the bottom and are carried back up to the nest by the fish; in the case of the snakehead, the eggs fall up! ◀

Service

(Continued from Page 222)

seemed to enjoy driving randomly from one end of the tank to the other, probably for the interesting trenches they left behind them. In such activities he might be challenged by that vague "other fish" which appeared evenings. Gort, having failed to overawe his own reflection, would go at it head-on, mouth a-gape, in a prodigious power contest predestined to an eternal draw. The effect was very like putting an outboard motor in a barrel of water for a test run.

To know him was to love him

Gort was not always an interesting fish. Sometimes he would go into periods of "hyper-scariness" and panic at the least vibration or movement. After most of these seizures our brawler would sink to the bottom and lie there in a lump, pale and gulping, like a fat lady after a faint. To do him justice, most movements and footsteps brought him churning to the front of the tank. Occasionally, and for no obvious reason, he would put on a mud-colored sulk and oar lethargically

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BELDT'S AQUARIUM, Inc.
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CLUB NEWS

T. I. F. A. S.

The 1964 convention will be held in Chicago in conjunction with the International Guppy Show and Convention of Guppy Associates International. The conclave will be held at the Chicago Midway House Motel, 5400 South Cicero Avenue, Chicago 38, on July 10, 11, 12.

P. 104

about with head near the surface, eating little or nothing for two or three days. I was never able to relate these moods to season, water conditions, or food. Nevertheless, Gort eventually came to hold that social position in the household somewhere between, say, a favored scalare and a dog or cat. He became, where other fishes are merely acclimated, a tamed animal.

An *Astronotus* is a willing jumper and will soon learn to jump for tidbits. One starts at water level and day by day the hand is held higher. I soon had Gort geysering up until over half his nine inches were clear of the water (liver bits the preferred bait), at which point I carelessly left one of the coverglasses partly over the tank while feeding him. He made a record training jump and landed on the glass where he flopped about in a frenzy until I pushed him back in. The mishap so shook him that he never tried again for anything more than a few inches above the water—excessive timidity for a fish who already had leaped from tank to floor many a time, and whose coverglasses had to be weighted down.

Since Gort had learned to associate my hand with food, he soon came to tolerate that strange pentapod in the tank with him as it went about its chores. By gradual stages, I discovered, he would put up with being gently touched,

then with being pushed firmly on the nose. Before long he entered into half-hearted little shoving or water churning contests (not too different from the head-to-tail disputes cichlids and many other fishes engage in), though these were brief and not very enthusiastic. Next, and I believe this much confidence to be rare, he would allow himself to be lightly grasped for a few moments just so long as real pressure was not applied. And finally, if not rushed, he could be lifted toward the surface until some part of him was clear of the water, at which he would burst free. Undoubtedly he put up with, in fact tagged along after my hand because it meant food, and tolerated all that other nonsense in hopes it had something to do with his next meal.

To his credit, while he realized my hand *meant* food, he never decided it *was* food, or only twice. One time, half a day hungry, he kept eyeing my hand as I worked on a buried filter tube, sud-

CLUB NEWS

Greater Pittsburgh Aquarium Society

"How to Get Maximum Efficiency for Your Fish Set-Up" was the topic discussed at the March meeting of the G.P.A.S., by John Studeny, John Rowland and Henry Marzina. Fish of the month: cherry barbs. Meetings are held at the Buhl Planetarium, Federal and West Ohio Streets, North Side, Pittsburgh, Pennsylvania.

MAY, 1964



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Invaluable! Tones up fish, destroys Hydra; fights fungus and fin congestion. Easy-to-identify blue crystals will not discolor water.

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denly gave an extended finger a nip. I was reminded of explorers' woeful reports that the stump left by the piranha hardly hurts at all. Actually, all he did was draw a faint film of blood from pin-pricks behind the fingernail, where the skin is thin. When teaching him to jump, I made a point of holding thumb and forefinger at such angles to each other and to his mouth that he couldn't grab them. The one time I was careless about this he jumped carelessly and left light gouge marks on both fingernails. These wounds were not much, but they distinguished me from the discus fanciers.

Demise and eulogy

Before Cort could be raised to full maturity (I had him just under two years) the draft finally opted me, and soon after my departure he died: not from mismanagement, I like to believe, but from persistent fears lest local or global war erupt and my duty change from peacetime to combat.

From time to time these days I see bouncy *Astronotus* fingerlings in the shops, and once again I am tempted. These youngsters usually swarm toward any passerby, who is impressed by their verve and may decide audibly that the cute things are just what she needs for her community tank. "Listen, lady," I begin patiently, "some fish are trouble to raise . . . these fish manufacture trouble." ◀

AQUARAMA

By James A. Mason

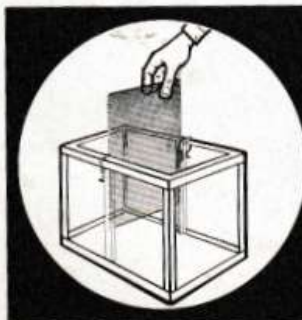
PLANNING OUTDOOR GARDEN PONDS

A GREAT MANY garden pools have met with an early end at the hands of their very much disgusted builder. The pond usually is filled in for a variety of reasons such as: too much effort to keep clean, or it too quickly becomes overgrown with algae.

A garden pond can be a very beautiful addition to your landscaping. Nothing else can provide the kind of beauty that a pond will give your garden. To avoid or minimize the usual problems encountered with garden ponds it is wise to plan very carefully before you pick up the shovel.

First select a location for your pond which is shaded as much as possible from direct sunlight. A shaded area will greatly reduce the growth of algae. To completely outsmart this monster known as green algae you may consider building a filtering pool next to your garden pond. The idea of building a smaller pool for the purpose of filtration may not be a new concept but new or old it really works miracles. Actually you're just putting a bottom filter in a different location.

(Continued on Page 237)



Tank-Divider

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Provides a separate area for baby fish.
Allows for unrestricted filtration.
Separates "rough" fish from peaceful community fish.
Practically invisible—doesn't clutter aquarium.
Guaranteed non-toxic plastic.
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AVAILABLE AT QUALITY PET OUTLETS EVERYWHERE.



11/1/74
P. 236

(Four-page Removable Insert)

All Fish Hobbyists, Dealers and Breeders Are Invited to Enter the
Spring 1964 Fish Show

Sponsored by the
SAN FRANCISCO AQUARIUM SOCIETY, INC.

Saturday, May 23 thru Monday, May 25

10:00 A.M. to 5:00 P.M. Daily

at

NORTH AMERICAN HALL

California Academy of Sciences

Golden Gate Park

San Francisco

* * * * *

ENTRY FEE

- (a) *NO ENTRY FEE* for members of the Society, or for dealers who enter only in Class 10.
- (b) 50c entry fee for **NON-MEMBERS** in Classes 1, 2, 3, 4, 5, 6, 7, 8, 11 and 12.
- (c) 25c entry fee for Juniors under 18 years in Class 9.

The entry fee allows the exhibitor to display as many tanks in as many classes as desired. Juniors may compete in any other class but must then abide by the rules given for such class.

GENERAL RULES

Entrants will provide information about their exhibit at time of entry.

Set up and removal dates: Exhibits must be set up on Thursday, May 21, between 10:00 a.m. and 9:00 p.m. or Friday, May 22, between 10:00 a.m. and 9:00 p.m. Definitely no entries accepted after this time. No exhibit shall be removed before 5:00 p.m. May 25, under any conditions. After set up time, fish or plants cannot be removed or exchanged, except sick or dead fish may be removed at the option of Show Chairman. All exhibits to be removed on Tuesday, May 26, before 9:00 p.m. or on Monday, May 25, from 5:00 to 9:00 p.m.

(Four-page Removable Insert)

S.F.A.S. FISH SHOW

Equipment and food: The exhibitor must provide his own tank or tanks complete with fishes, plants, sand or gravel, tank-top and lights, as well as such thermostats, heaters, filters, air-releases and connections as he may desire. Stands for the tanks, aged water (hot or cold), compressed air, electrical outlets and current, and daily feedings of live adult brine shrimp will be furnished free by the Aquarium, unless the exhibitor expressly states on his Entry Blank that he does not wish one or more of these services. Any electrical device used with any display must be of approved kind and free of defects. Entries or displays are the exhibitor's responsibility. No responsibility for losses or breakage is or will be assumed by the Society or the Aquarium. If entries are mailed from more than 200 miles, show committee will provide tank and set up exhibit.

Judging and Prizes: The judging will be conducted by acknowledged authorities before North American Hall opens on Sunday morning, May 24. All fluorescent lights will be turned off during judging. The judges will use the points standard as described below in determining the awards and their decision is final. First, Second and Third Place will be awarded in all classes in which 3 or more entries are made. All First Prizes will be trophies and all other will be ribbons.

All exhibits shall be entered in one class only.

CLASS 1. Guppies. The guppy division will be divided into four classes, depending on the number and type of exhibits. Most likely these classes will be a) black, green or blue broad-tails, b) red broadtail males, c) other males, d) females.

At least two males or females, constitute an entry. Guppies must be spawned and raised by exhibitor.

Points for judging as follows: Body 20, Caudal fin 20, Dorsal fin 15, condition and deportment 20 and color 25.

CLASS 2. Marine Tanks. (2a) Tropical marine and (2b) tidepool fish are the two classes. Points for judging as follows: General arrangement 20, color and quality 40, condition 40.

CLASS 3. Community Tanks. Fish in these tanks must have some measure of permanence and compatibility. Colored gravel, ceramics, plastic plants, etc., are permissible. Fish in community tanks need not be spawned and raised by exhibitor.

Points for judging as follows: fish 40, natural plants 30, and general arrangement 30.

CLASS 4. Bettas. Tanks shall not contain plants, but natural sand or gravel is optional, artificially colored sand or gravel will not be permitted. a) Bettas spawned and raised by exhibitor, b) Bettas not spawned and raised by exhibitor. Each betta will be judged separately as follows: Color (clarity of color) 40, fin and body 40, and condition and deportment 20.

CLASS 5. Terrariums. Animal health 40, quality and color 40, deportment 20.

(Four-page Removable Insert)

S.F.A.S. FISH SHOW

CLASS 6. *Not Spawned and Raised by Exhibitor.* No less than 2 fish nor more than 6 fish per entry. a) Livebearers, b) egglayers. Points for judging as follows:

Size for age.....	20
Color and quality.....	30
Matching of fish.....	25
Condition and deportment.....	25

CLASS 7. *Livebearers*, other than guppies spawned and raised by exhibitor.

CLASS 8. *Egglayers*, spawned and raised by exhibitor. (8a) killifishes (top minnows), (8b), cichlids, (8c) anabantids, (8d) other egglayers.

Rules for classes 7 and 8 are as follows: Date of spawning must be listed by breeder. A minimum of three fish to be exhibited, excluding the parents. The parents may be exhibited at the option of the breeder. Points for judging as follows:

	<i>Egglayers</i>	<i>Livebearers</i>
Difficulty of breeding	30	20
Size for age	15	20
Color and quality	20	20
Matching of fish	15	20
Condition and deportment	20	20

CLASS 9. *Junior community tanks.* Exhibitor must not be helped by any adult, and he must be under 18 years of age. Points will be awarded on the same basis as Class 3.

CLASS 10. *Dealers' display.* This class will be subdivided into a) fresh water and b) salt water.

CLASS 11. a) *Goldfish*, b) *Carp*. Points to be given as follows: Body 30, fins 30, condition 20, and deportment 20. One fish will constitute an entry.

CLASS 12. a) *Pet.* Entry in this class will be limited to one specimen which is the exhibitor's favorite pet. It may be fresh water, salt water or reptile. Points for judging as follows:

Relative size.....	30
Condition.....	30
Deportment.....	30
Decoration.....	10

b) *The Most Decorative Tank.* Open to the aquarist's most artistic ability.

c) *Novelty.*

A trophy will be awarded to the Tropical Freshwater Exhibit that in the opinion of the judges most nearly exemplifies perfection in home aquariums.

The San Francisco Aquarium Society or the Show Committee cannot accept responsibility for damage to any of the exhibits, and the Show Committee reserves the right to refuse entry of any exhibit.

For additional information contact the SHOW COMMITTEE, Ray Cabrera, Chairman; or Ted Steinhauer, LO 4-2320.

(Continued from Page 236)

This filtering system has some good advantages over the usual bottom filter.

The filtering pool should be approximately one-fourth the size of your garden pond. You should design it so that it will contain at least 12 inches of sand and the water level should be two inches above the sand.

The extra effort required to build this filtering pool will have its reward many times over. You will have not only a beautifully clear and clean garden pond but your filtering pool can become a bog garden. As an extra bonus you will have created a perfect area for growing small fish. The normal sequence of water flow in a system as just described is as follows:

From the main pond water overflows through a pipe or crevice built into the wall. The overflowing water carries with it materials that are in suspension and it most effectively takes with it any dust or foreign matter which is floating on top of the water.

The overflowing water goes directly into the filtering pond. Once inside the boundaries of the filtering pond the water can only filter down through the sand and become clean. It then accumulates in a perforated drainage line underneath the sand and flows to an electric water pump which returns the water to the main pond via a waterfall.

I know of several garden ponds which have a filtering pool adjacent to the main pond. They are all very successful. It is wise to make your garden pond as large as is practical. Large ponds are easier to maintain and provide a much better environment for plants and fish.

While on the subject of ponds, there are other fishes than the goldfish to consider. Among the most attractive fish for outdoor ponds are the new varieties of Koi, very colorful carp which are now being imported from the Orient. These carp are very satisfactory but it should

be considered in the design of your pond that they are jumpers. Therefore it would be advisable to have 6 to 12 inches from the water level to the top edge of the pond. ◀

★ IDEAS ★ BY HOBBYISTS

The Journal will pay \$5.00 for original ideas published. Keep less than 200 words. Send your idea today!

Tank Filter

Many hobbyists who breed livebearers may often be confronted with the problem of filtering a tank containing fry. The problem may be solved by cutting a piece of fine nylon mesh slightly bigger than the opening of a syphon. A regular outside filter should be used. Attach the mesh to the opening of the syphon with aquarium cement and allow 48 hours for drying before use. —
Andrew Beck, Tenafly, New Jersey

ATTENTION — BREEDERS NOTICE — AQUARISTS

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RAY'S WORMS

7279 Floral Garden City, Michigan

FINNY FOLKS

By Diane Schofield

EVERY SPRING is fish "show time." This is the season when aquarists bring out their fishes for inspection. If the wind is in the right direction and the sun up in the sky, perhaps this inspection might also ring up a trophy, or a small, shiny ribbon.

There aren't too many ways that a fish show can be varied. There are just so many things that you can do with a collection of tanks. It's a surprise to find a really new gimmick in a show and the aquarium display of the National Orange Show in San Bernardino, California, held on March 12 through 22 of this year, provided several original ideas. Each show is the end result of literally weeks or even months of planning, and much depends on the resourcefulness of the people in charge.

Technically the aquarium display at the National Orange Show was not spon-

sored by Tri-County Aquarium Society of San Bernardino, but both the Show Chairman, Robert Sazevich, as well as his committee do belong to it. The committee responsible for such a magnificent job were Adin Alexander, Robert McCrory, Fern Bohlman, Chick Patterson, Russ Fletcher and Paul Hansen. Thelma Sazevich did a dual job as secretary and hostess.

Of this group, Adin Alexander is a real "gem." His knowledge of plastics, gained from his business, "House of Plastics," furnished the show with many of its unusual facets. For example, he created a large plastic "diving bell" aquarium. I doubt if there were any lines jamming up space in front of the booth to buy it though. It cost them over \$200 to make and was made only for display purposes.

After the tanks were in place, black corrugated cardboard was cut out and placed on sand in each tank to show it as a separate little jewel. Then to accent the front of the display, Mr. Alexander

Photo: John DuBois of the "Sea Chest" in Laguna Beach painting a black-and-white photo of a fish. Read more about this on Page 256.



had cut out many styrofoam guppies for decoration.

The information booth was the really unusual point of interest. In this recessed spot had been placed realistically colored cut-outs of a number of brightly colored tropicals. The entire booth was then illuminated only with "black light." As a result, it gave the distinct appearance that all of these fishes were eerily swimming in space.

Another attraction was the excellent uniformity and simplicity of their large guppy display. Each small tank had the same black corrugated background and one identical plastic plant in the same corner, thus giving each entry the same conditions under which to be judged but doing it with beauty and taste.

This was a show that I truly enjoyed judging.

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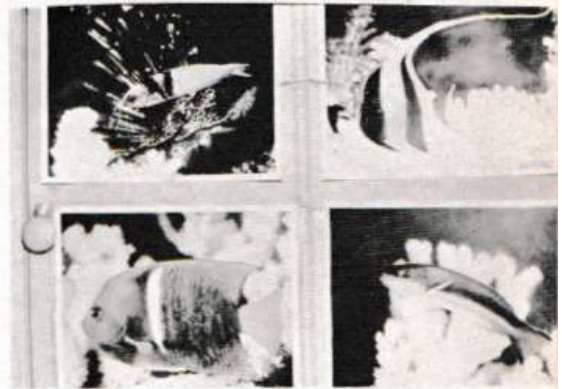
I find that I am a "pre-lamenter." In last month's column I noted that the Meserves would be a very "hard act to follow" when they stepped down from the "Boston Aquarium News," the bulletin of the Boston Aquarium Society. But right into their places stepped Joan and Russell Gallini who have kept the extremely high standards of the Meserves. It's true, "The Boston Aquarium News" looks out at you with a different face for the printing process is a new one, but the content is of the same excellent quality.

• • •

I'll have to admit that I had this same depressed feeling when Tomi Beynon stopped the excellent editing of "The Plecostomus," the publication of the Blackhawk Aquarium Society of Moline, Illinois. The magazine did have consid-

Photos: (Top) You're liable to find almost anything in the United States — including combination plumbing and merchandise displays in a Coon Rapids, Minnesota shop. **(2nd)** An example of four-color paintings done from black-and-white photos by John DuBois. **(3rd)** Aquarium exhibit at National Orange Show was this black-lighted booth. **(Bottom)** An overall view of the National Orange Show. All photos by the author.

MAY, 1964



erable trouble carrying only one or two pages for a while and went under the pseudonym of "Aquariogram." It really picked up enough "speed" and once again is known by its proper name. For some time now it's been in top form and again carries the regular feature by Marian Dickinson "From the Library," the column that sifts out the nuggets from the other bulletins for the benefit of their members.

• • •

This should shame some members of various societies that won't venture from their doorstep more than a mile or so to attend a meeting. The Haverlandts of Red Wing, Minnesota, travel a distance of 65 miles each way to regularly attend the meetings of the Minnesota Aquarium Society, thus making a total of over 1,000 miles a year!

• • •

Not only is it fascinating and fun to find tricks and gimmicks in shows, it's

equally enthralling to find such things in shops. Probably the most "unusual" combination of items sold in tropical fish shops could well be found in Coon Rapids, Minnesota. Here in the Hayford Plumbing and Heating Company nestled between plumbing items, valves and pipes were tanks of tropical fish! I do think that Mr. Robert Hayford could have utilized some of those gleaming white containers to sort of, shall we say, "combine" his two businesses — think how much attention could be commanded by having a betta rising majestically to peer at customers from one of the toilet bowls!

• • •

A bulletin that is pudgy and fat with, not only excellent information, but information that is dispensed with fun and entertainment is "The Sun-Parlour Aquarist," the bulletin of The Sun-Parlour Aquaria Society, Ontario, Canada. The editor is Bev Griffith. Bev is the wife of a dentist. "The Sun-Parlour Aquarist" is one of the thicker, meatier bulletins. Often there are 40 pages — a number that will make most editors turn pale with fright and shake with palsy at the very thought of filling them. But Bev makes it seem easy — this is, of course, a delusion and a snare. Recently in the last March issue she inveigled a quaint old character known as "Granny" (but whose first name, I suspect may well start with a "B") to

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CLUB NEWS

Northern Virginia Junior Aquarium Society (Springfield, Virginia)

This newly formed group is looking for new members between the ages of 10 and 16, according to Chris Kirwan, 5605 Catlett St., Springfield, Virginia. For information, write to Mr. Kirwan at that address, or telephone CL 6-7260.



Photo: A rare photograph of Andrew Bell, the canny Scotsman who lives in Fife, Scotland. He is an ardent booster of the hobby in that bonnie land.

spew out home-spun philosophy in "Granny's Nook." This is no "folks hereabouts have been a askin' me for my recipe for gooseberry butter" type of thing. Good old Granny does things like keeping her earthworm collection in her old square wash tub (that she used before her son bought her one of those new-fangled washing machines) and she has to jump quick like a spry old bunny to keep her daughter-in-law from frying up her frozen tubifex for hamburger! In future months, I'll wager that "Granny" is going to dole out a lot of good fishy information — even if she does admit freely to taking a snort of blackberry brandy now and again.

Andy Bell, a Scotsman, writes that his club is in a better position than any club here in the United States, at least to my knowledge. They have their own clubrooms and can come and go when they wish. To more fully utilize these rooms, two tanks were set up and on Saturdays, members bring in their unwanted surplus fish to swap and barter with other hobbyists. This started to "snowball" when non-members came in and wanted to buy some of these fish.

Photo: \$200 plastic "diving bell tank" displayed at the National Orange Show. On left is Robert Szevich, chairman of the aquarium exhibit. To the right is Adin Alexander, creator of the tank.

Thus more tanks were added. Andy is now in charge of "selling and telling," as he calls it — selling fish and telling how to take care of them. The club makes a small profit, but the main object is to further the hobby. Incidentally, Andy's club belongs to the Federation of Scottish Aquarist Societies, an organization which puts out a rather delightfully British little bulletin called the "Newsletter." Clubs interested in exchanging might contact Mr. Bell, at 3 Viewforth, Buckhaven, Fife, Scotland.

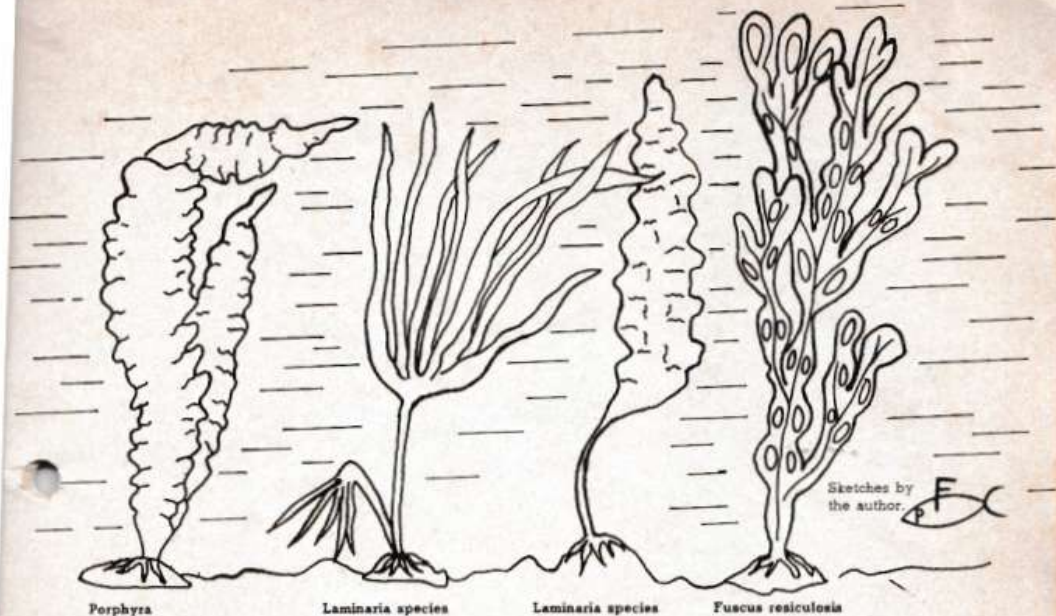
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Another shop that combines a new trick, mainly because of the type of town in which it is located, is "The Sea Chest" of Laguna Beach, California. Laguna Beach is mainly an artist colony, but Kirby Wolfe, the owner, only "paints" his pictures with his camera and the pictures are naturally those of fishes.

(Continued on Page 256)



hau



Used to make foods, drinks — even medicines;
cultivated in Japan, Scotland and Ireland

Seaweed Means Business!

PART I

MOST OF US are familiar with the piles of rotten sea-weed on the sea shore and their live examples in the rock pools around our coasts. Very few of us realize that these plants are important articles of commerce throughout the world, although many of us must have thought of using them as decoration in marine aquaria; if only they would grow. However they do form an important part of many of our foods and drinks and even our medicines and ointments.

Strange as it may seem sea-weeds are cultivated in many parts of the world. Cultivation implies at first sight the sowing of seeds, but with sea-weeds it simply means supplying suitable places for the minute water borne spores to settle and grow. Sea-weeds have been

P. F. Capon

Essex, England

cultivated for a long time in many parts of the world, particularly in Japan where *Porphyra* species have been grown in Tokyo Bay for over two hundred years. Occasionally *Fucus vesiculosus* is cultivated in Eire and Scotland when the demand exceeds the natural supply.

The normal method of cultivation is to place twigs or rocks on the sea floor so as to form an anchorage for the weeds. The roots of the weeds are usually only a means of anchorage, and unlike land plants not a means of obtaining nutrients. The chemical composition of the rocks does however determine the

type of weed and to a degree how luxuriant or otherwise is its growth, but the size and species is also dependent on the depth of water, the salinity, light, movement of the water, and the physical nature of the substratum. Very few weeds in muddy waters as these occur where fresh water enters the sea, and also very little light is able to penetrate deep enough in this muddy water. One species that does grow in this type of habitat is *Porphyra*, this is often cultivated on twigs; stones and rocks are of little use as they simply sink into the mud.

Sandy areas are not of much use for growing sea-weeds as the sand moves about with the action of the waves and the weeds are easily dislodged. Water over six fathoms is ideal as at this depth the action of the waves is not usually very great; in Japan *Laminaria* is cultivated in such areas. The best and richest growing areas are more or less flat reefs.

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The growth of the weeds varies with the latitude, for in the lower latitudes the light penetrates far deeper than in the higher cooler latitudes. In the temperate zones the best growing areas are between the high tide mark and about ten fathoms; between the marks are zones suited to particular species. Those growing between the tide marks must be able to withstand partial dessication. In the tropics the intense heat of the sun will kill spore and plants alike and the intertidal zones are usually devoid of vegetation. Calcareous algae are however one type that can withstand the terrific heat of the sun and often are to be found on the otherwise barren beaches.

An influx of fresh water can destroy weeds over a large area and this often occurs after heavy flooding when the rivers discharge more than their normal amount of water into the sea. Light acts on sea-weeds in roughly the same manner as on our more normal aquarium plants, in heavily shaded areas the weeds become pale and drawn. But on the other hand very strong light tends to halt the growth of the weeds. This might have a bearing on the fact that we have so far been unable to grow the weeds in marine aquaria; perhaps we have been giving them too much light. In any case experimentation with various types and strengths of light might pay handsome dividends.

Uses of Sea-weeds — Fertilizers

In most countries where collection is easy sea-weeds have been used as a fertilizer for many centuries; in the British Isles they have been used on potatoes, broccoli, and other green crops.

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The Journal

The method of application varies according to local custom but usually they are just dumped on the land as they are collected from the beaches after storms have torn them from the sea bed. Alternatively they are dried prior to application by laying them out on a piece of waste ground. The weeds are also burnt and the ash used as a fertilizer; this ash contains quite a high proportion of potassium but the burning destroys their nitrogen content. In addition the ash and weeds contain traces of many other elements many of which are important in plant nutrition. Dried sea-weed can also be used as stable litter and after use be turned into the ground along with the collected manure in the same manner as straw litter.

For use as a fertilizer sea-weed is often dried and ground to a fine powder. The wet weed contains as much as 80% of water and this drying saves on transportation costs to users inland. Sea-weed contains the basic plant foods of potassium, nitrogen, and phosphorus as well as various trace elements; the proportions of potassium and nitrogen are the

★ IDEAS ★
BY HOBBYISTS

The Journal will pay \$5.00 for original ideas published. Keep less than 200 words. Send your idea today!

Extra Tanks

Do you need extra tanks for breeding or emergencies? I think I've found a very good solution. At most hardware stores or supermarkets, you will find plastic trash pails in both ten and twenty gallon sizes at a fraction of the cost of glass tanks. Gravel, rocks, plants and a filter will provide your young fish with an excellent temporary home. Privacy, too. — *Craig Montgomery, Ormond Beach, Florida*

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same as those in farmyard manure. Sea-weed has a beneficial effect on the crumb structure of the soil and a product derived from sea-weed has been put on the market recently that relies on this effect to break down clay soils. The weeds can also be applied to soils that are deficient in iodine as the plants are valuable sources of this element; iodine deficiency is a cause of goiter.

Sea-weed as a Food

Sea-weed is also harvested in various parts of the world for use as a food-stuff. In the Western world sea-weed is usually only used in the form of various extracts which are used as thickening agents, but in the East the weeds are eaten as such in large quantities. Kombu is a form of dried weed popular in Japan; it is eaten as a vegetable, and in soups and broths, and even sometimes used as a kind of tea. Another type of sea-weed food is Amanori which is prepared from a cultivated weed; it is eaten mainly dried but also as a vegetable. Amanori looks rather like a glossy sheet of black cardboard in its dried form; it is toasted before being used as a flavoring in soups and sauces. Another common use of Amanori is in the preparation of Sushi; here the sheet of dried weed is spread with boiled rice and strips of fish.

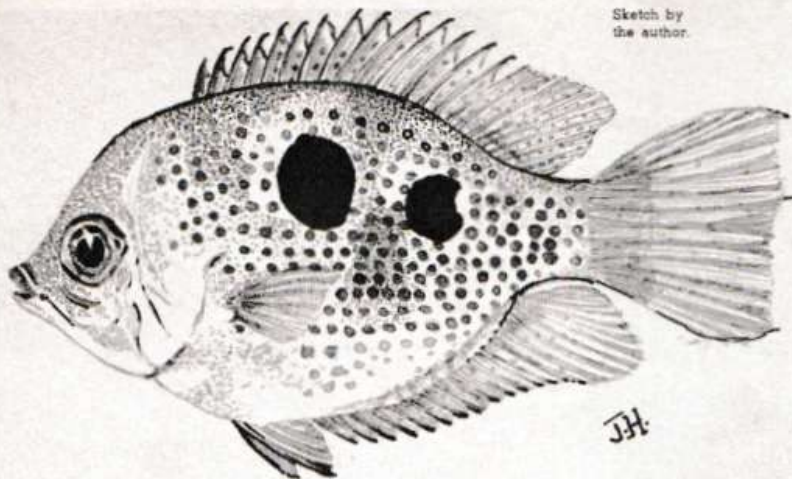
(To Be Continued)

CLUB NEWS

Elm City Aquarium Society (New Haven, Connecticut)

The E.C.A.S. will host the Eighth Annual Meeting and Show of the Northeast Council of Aquarium Societies on Sunday, May 3, 1964, at Frankie's Villa Pompeii, 551 Boston Post Road, Orange, Connecticut, according to Marilyn A. Goralski, Corresponding Secretary. The Northeast Council consists of 11 societies located in Connecticut, New Jersey, Massachusetts, and New Hampshire.

AQUARIUM JOURNAL



Famed British aquarist-writer tells how to spawn this docile jewel of the aquarium

The Orange Chromide

WHAT A CHARMING FISH this three-inch cichlid is. Formally known as *Etroplus maculatus*, it has all the virtues which a really tankworthy species can possess: attractive colors, a pleasing, flattened ovalish shape, a disinclination to interfere with the plant life, a docile nature, and a willingness to accept almost any type of live or dried food.

It is native to southern India and Ceylon and thrives best under domestication in neutral inclining to acid water made slightly saline by the addition of roughly one teaspoonful of sea salt to every gallon. For normal maintenance a temperature of 72 to 75° F. is as good as any, with a rise to 78 to 82° F. for breeding. For those who like to know such things, it was first introduced to tropical aquarium keepers as long ago as 1905.

The basic color is gold or orange-yellow, shading to whitish overlaid with

Jack Hems

Leicester, England

a golden to silvery sheen on the belly. There is a blue-black patch margined with yellow in the middle of the sides, which are further adorned with several rows of red dots. Occasionally the fish shows additional, though smaller, blue to blue-black markings and an irregular pattern of shadowy bars; indeed, it is not uncommon for young fish and, on occasions, adult fish, to wear an almost uniform dusky garb. The dorsal fin is orange embroidered with brown to red specklings. To add to its attractiveness, it has a pinkish to red border. The red edged caudal fin, and the black edged anal fin, are faintly brown to yellow. The front rays of the gray to black ven-

tral fins are blue; the pectoral fins are clear. Cardinal red rims encircle the large black eyes.

Telling the sexes apart is not always easy. But when adult fish are in high spirits or in spawning condition (which, come to think of it, is about the same thing), the male can usually be distinguished from the female by his more assertive demeanor, his overall brightness and, in many cases, his larger size.

By nature the orange chromide is rather shrinking and does not take kindly to change. Therefore until it gets used to its owner's movements, and the shadows and sounds concomitant with its surroundings, it will lurk in the background, flit mysteriously from rock to rock — that is, if rock work is included in the tank's set up — or play a timorous game of peek-a-boo through the green drapes of vegetation.

The orange chromide often fans depressions in the sand. These shallow, or maybe deep, craters are used for lolling (sleeping) in, for the reception of eggs deposited on the exposed floor, or even as a nursery for newly hatched fry incubated elsewhere; for *E. maculatus*, like so many of the Cichlidae, is quite unpredictable in its choice of a spawning site.

The orange chromide does not breed freely in captivity but if, and when, it does decide to raise a family, the male's fins display richer tints, and not infrequently the greater part of his body darkens to an inky blue. Not unnaturally, the less splendidly appalled female assumes a marked fullness of form.

To help promote the reproductive instinct at least two things are desirable: a temperature in the high seventies or low eighties (as mentioned above), and an abundance of a much relished live food, such as fat daphnia or bloodworms. As to the dimensions of a breeding tank, one holding above 15 gallons of water is recommended. Remembering, too, the

species' erratic whims and fancies in regard to a spawning site, it is as well to place in the sandy-bottomed tank a smooth stone or two, an overturned flower pot with its large opening turned into the shade, and some weighed-down, broad-leaved plants. A scattering of duckweed, say, or floating fern, will provide added seclusion and roughly the right degree of filtered toplight which the fish like best.

Preparatory for spawning, the couple give themselves up to an interesting and lively courtship. To capture the usually less enthusiastic female's attention (or admiration), the male spreads his fins and rocks his body with a side-to-side motion. Sometimes the urgency of his love is so great that he dispenses with such dalliance, and just charges at her with jaws agape. If, as so often happens, she turns tail and flees, there follows a spirited chase.

In between these vigorous activities, that is to say, while the female is getting

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her breath, so to speak, in the plants, or in some shadowy corner, the male goes looking for a suitable spot for the reception of the eggs. He examines vegetation, stones and so on with painstaking care. If he happens to be in a magnanimous mood, he will permit the female to join him in the routine inspection and help prepare a site. In all probability they will decide on a quick-fanned pit.

Soon enough the female, closely attended by the male, will lay her few score of eggs. The eggs (and newly emerged fry) are anchored to the spawning ground by a sticky filament or thread. The couple take their time over spawning, and several hours may elapse before it comes to an end. Then comes the dirt-dispelling and aerating fanning. In this, both sexes play their part, singly or together.

As a rule, the eggs hatch out within the length of five days and, between times, the male makes fresh depressions

in the sand. Or usually does. Thereafter it is by no means uncommon for him (sometimes assisted by his spouse) to shift the eggs or wriggling fry to a new nursery every few hours. Yet this happy state of affairs does not always last for long. For the male, frequently made irritable by strain, or perhaps prompted by instinctive suspicion or distrust, often makes repeated attacks on his mate. If he becomes dangerously violent it is advisable to transfer her to another aquarium without delay. (It appears that insufficient privacy in restricted quarters is more likely to cause a rift between a pair than anything else.)

Reverting to the fry, for the first week or so of their free-swimming lives, they need nourishment in the form of large *Infusoria* or micro-worms, after which brine shrimps, screened daphnia, tiny worms and so on must be given as often, within reason, as possible. About this time, too, the male will work hard



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herding the fry into a school and leading them around the aquarium. This brings us to the important question of when to remove the father fish from his offspring. In my own experience, after a month has passed no further benefit, aesthetic or practical, is derived from his presence. In point of fact, the chances are that the fast-growing fry are safer, and no doubt feel safer, without him.

For those who prefer not to gamble, there is a method of incubating the eggs without assistance of the parents. This entails the provision of an air-stone to circulate the water around the eggs and thus keep them dirt-free and well aerated. Once the hatched-out fry have absorbed the yolk-sac, and all else being well, it is possible to grow them to roughly half full size in under five months.

Ideally, the orange chromide should be given a tank to itself, but there is no question that it makes a worthy addition to the community aquarium, provided no very small or very large and boisterous fishes are kept there. ◀

★ **I D E A S** ★

BY HOBBYISTS

The Journal will pay \$5.00 for original ideas published. Keep less than 200 words. Send your idea today!

Tight Tank Partitions

When we have to partition a tank to house betta males or to separate fry of varying sizes, it is often a problem to keep the glass partitions firmly in place without forming cracks. The solution is to use cork strips about one inch wide and about one-fourth inch thick. Using a razor blade to cut grooves in the cork, the thickness of the glass partitions, it is easy to make the partitions fit tightly. — Robert J. Wyndham, *Upland, California*

MAY, 1984


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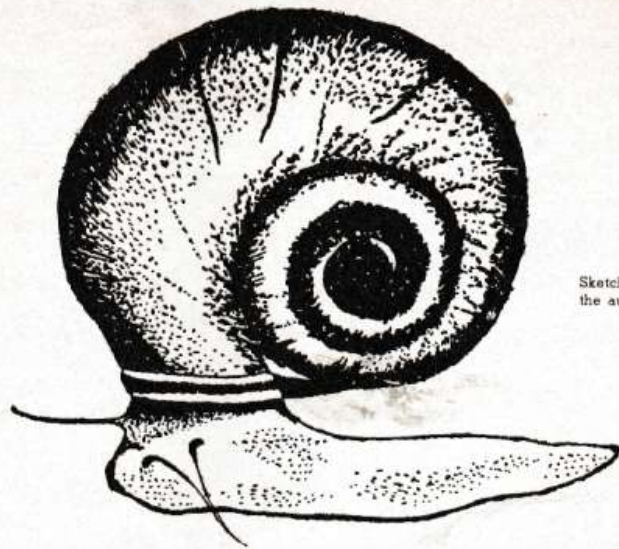
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Sketch by
the author.

A good aquarium scavenger that eats animal
and vegetable foods; also uneaten fishfoods

Red Ramshorn Snail

IN 1949, Andre Pacaud, a French biologist, determined that the European red ramshorn snail was omnivorous (eating both animal and vegetable food) in its feeding habits, preferably saprophagous (eating dead or decaying organic matter) rather than vegetarian as was generally believed. This should have been of special interest to aquarists who have for many years tried to maintain the snails strictly on a diet of head lettuce and aquarium scraps but it apparently was not. A few writers, over the years following, have suggested that, unless such carnivorous foods such as dead earthworms are added to their diet, the snails become yellowish in color.

Pacaud had also noted that those snails fed on lettuce would eagerly accept fragments of dead tadpoles or fish

Charles O. Masters

Walhonding, Ohio

fry. Bits of liver, spleen, or red blood, either liquid or coagulated, were eaten with particular activity. He also had noted that, in nature, the snail was the scavenger feeding on a variety of substances. It has been demonstrated too that even bacteria alone serve as food for the red ramshorn snails allowing proper growth and an increase in weight.

However it is generally agreed that the bright red attractive snail is a good aquarium scavenger consuming small dead fish and unwanted algae from

Sketch: *Pianorbis (Helisoma) cornueus* L. The European red ramshorn snail, a red variety of the common European ramshorn snail. Sketch by author.

plants and the glass. They also convert uneaten fish food into comparatively innocuous organic substances. Normally they are harmless to the common desirable aquarium plants. Some aquarists place them in their tanks because the young snails are valuable as a source of live food for the larger fishes which even feed upon the clear mass of snail spawn. Many of the cichlids have jaws which are strong enough to allow them to feed on snails which are a quarter grown. It must be remembered though that snails alone cannot recondition a poorly-managed tank.

They should be removed from fish breeding containers because they do devour newly fertilized or developing fish eggs, and too, it is possible that they may eat some fish food which would normally go to the very young fish.

(Continued on Page 254)

★ IDEAS ★
BY HOBBYISTS

The Journal will pay \$5.00 for original ideas published. Keep less than 200 words. Send your idea today!

Use of Snow

When soft water is desired, some recommend melted snow water. The easiest way to melt snow as well as the quickest method is to obtain a large plastic bag from a fish dealer, the kind he gets fish shipped in, and fill it to the top with snow. Then get a large laundry tub and fill it to about one-third with hot water. Float the bag of snow and in 10 minutes you will have about five gallons of melted snow water. Be sure to only take clean snow. New snow is best and aerate the snowwater well before use. — Fred Gross, Omaha, Nebraska

Join the S.F.A.S.

MAY, 1964

CLUB NEWS

San Francisco Aquarium Society, Inc.

The next regular meeting of the S.F.A.S. will be Thursday, May 7, 1964, at Steinhart Aquarium, California Academy of Sciences, Golden Gate Park, according to Robert P. Dempster, President.

Program for the May meeting will be a talk on aquarium filters by Ron Hofling, who will discuss all types including under gravel filters, outside filters, etc., and will use the blackboard to illustrate his points, according to Frank Tufo, Program Chairman.

A second "Swap Night" will be held at the May meeting! Those members who forgot about the first such night at the April meeting, can "make the scene" at the May meeting, Tufo said.

Fish of the Month competition for the May meeting: (1) mollies, (2) danios, rasboras, white clouds, silversides, and (3) angels, according to Charles P. Bange, Chairman.

Details about the 1964 Spring Fish Show sponsored by the S.F.A.S. will be discussed at the meeting, Ray Cabrera, Chairman, announced.

PRODUCT NEWS

There is a line of fish foods which have long been a favorite throughout Europe. These foods are manufactured by TetraKraftWerke in Germany. They are now being distributed in the United States by Kordon Corporation. Many of the foods are rapidly becoming the most popular dry flake food available. The food is TETRAMIN, a flake food which is formulated especially for tropical fish. They really go for it!

The TetraMin Staple Food is designed to be the basic diet for most all varieties of fishes. It is available in several sizes, 7/16 oz., 7/8 oz., 2 oz., 8 oz., and

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a 32 oz. container. There is also a large flake preparation of the Staple Food, big flakes for big fish, which is packaged in a 2 oz. plastic container. For bottom feeders the Staple Food also comes in a tablet form. Try the tablets on catfish and blind cave tetras. You will be amazed!

There are several special foods included in this line. Growth Food, which is now packaged in a 1 oz. plastic container. It speedily puts size on growing fish. At present this special Growth Food is not available in a larger size but it is hoped in the near future that it will be offered in a large economy pack for hatchery use.

There is a Conditioning Food which is considered among the best for conditioning breeders prior to spawning. Another that really works is Color Pride. It has no bad side effects. For Guppies there is the famous Hahnel Guppy Food which is highly recommended.

For salt water fishes, they make a flake food called TetraMarine and a tube food. The newest addition to the line is *Goldfish Food* which will come packaged in a 7/8 oz. and 2 oz. size. The manufacturers of TetraMin Foods also put out a complete line of Tetra-Care remedies. The Contra Ick and the Fungi Stop are two which are very effective. ◀

CLUB NEWS

Midwestern Aquarist Club (Omaha, Nebraska)

The M.A.C. will hold their Sixth Annual Tropical Fish Show June 4 through 10 in the community room of the Commercial Savings & Loan Association, 30th and Ames Streets, Omaha, according to Miss Leola Petersen, Chairman. Over 72 tanks were entered for competition last year.

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Masters

(Continued from Page 253)

Some of the other names of the European red ramshorn snail is the Copenhagen snail, saucer snail, coral snail, ord snail, and trumpet snail. The scientific name is *Planorbis corneus*.

The literature contains many references to collections of the snail having been made in Germany, France, and Denmark with a suggestion that the species is part of our North American fauna but this, as yet, has not been verified. As far as the author knows this species is confined entirely to North American aquaria and to the waters of England, France, and other areas within northern Europe.

The snail has been studied extensively in order to determine if it is a vector of the cercaria of *Schistosoma* which causes a dermatitis in humans but all checks have been negative. In fact, repeated attempts to infect the snail with the Puerto Rican strain of *S. mansoni* have all failed.

An annelid, *Chaetogaster*, visible to naked eye, occasionally lives in the mantel cavity of the snail extending out into the water in order to secure, as food, large quantities of infusoria, small rotifers, and young water fleas. The quantities of these worms may be as great as 900 per snail but usually average about 70. They do no harm to the snails and of course to humans.

The snail has a color ranging from reddish-brown, yellow, pink, to blood-red. Among individuals the color of the snail proper is often entirely different from that of the shell. The red is due to hemoglobin or more properly erythrocuorin. This respiratory pigment acts about the same way as hemoglobin in our blood. Snails do have a circulatory system with a heart and blood vessels. It has been determined that for the snail to pick up oxygen from the water con-

AQUARIUM JOURNAL

taining relatively little quantities of the gas, erythrocorin of high oxygen affinity is essential. Albinistic forms are red or reddish, non albinos brown. In 1927 biologists concluded that the albinism of the snail was an inherited mutation. The red ramshorn snail with its blood rich in erythrocorin is well adapted for survival in a habitat which at times may be deficient in oxygen. Incidentally the fact that the snail has such bright red blood makes it a favorite for use by biologists in their study of the biochemistry of respiration.

Flowing rivers, permanent ponds, and stagnant ditches are places where the snails have been collected throughout much of northern Europe. In 1927 research workers in Germany, in an attempt to make the snail more readily available, introduced it into several ponds from streams where it was found and were happy to announce that they had become established.

If the water in an aquarium is even just slightly acid, the shells become pitted and unattractive leading eventually to the death of the snail. This sensitivity to chemical makeup of the water is rather unfortunate but it can be treated by the addition of small amounts of alkaline materials such as calcium carbonate to the water. Some aquarists actually rec-

ommend the use of *Chara* or *Nitella* with their rich lime coating, in snail breeding-tanks. Regardless of how it is accomplished, it becomes necessary to watch the pH of the water and control it so that it is always greater than 7.00. The ideal situation, therefore, is one hard to create and maintain. It should be one in which the oxygen content is low but the acidity low.

The snail is not as prolific as some of the others such as *Physa*, the common pond snail, laying from eight to thirty eggs within a gelatinous mass below the water's surface. These hatch in about three weeks depending upon temperature, and the young look like miniature snails. The snails are hermaphroditic, having both ovaries and testis present in the same individual. Reproduction however, is sexual. Any two snails make a pair for breeding purposes.

Although the red ramshorn snail was discovered near Berlin, Germany over a hundred years ago, and has been bred in tanks since that time, it still requires considerable attention in order to successfully breed it in large numbers and maintain heavy, bright-red snails. The red variety, it has been determined, requires a high temperature (75-80° F.) in order to reproduce rapidly. The high temperature also affects the formation

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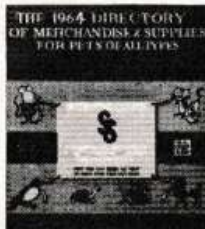
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and distribution of pigment.

In once sentence then, the aquarist, in order to successfully breed the red ramshorn snail, should try to keep the temperature and alkalinity high, the free oxygen low, feed the snails animal as well as vegetable food and keep some of the shell-producing elements available in the water. These are all things which an aquarist can accomplish. ◀

Schofield

(Continued from Page 242)

To stimulate interest in both fish and art, he has enlisted the aid of two teenagers, Jim Bray and John DuBois who also double in his shop selling fishes to paint in oils some of the black and white pictures that he has taken. Instead of brushes, the boys utilize Q-tips dipped in regular artists' oil paints. They insist that any amateur can come up with an excellent oil painting of a fish even with no previous experience. By watching the boys work in their display at the shop, I believe it too! ◀

I D E A S

Freezing Dry Fish Foods

Many hobbyists do not take advantage of the large savings which are possible by buying their favorite dry fish food in bulk, because they do not have a large enough number of fishes to use up a half pound or a pound of fish food before it begins to lose its freshness and nutritive value. An easy way to preserve dry food is to freeze it. If a small shaker is used to dispense the fish food it can be refilled each time it is necessary. The larger container with fish food can be sealed in a plastic bag to help retain its moisture and placed in the freezing compartment of your refrigerator. Here it will keep its freshness almost indefinitely.—Braz Walker, Waco, Texas

April 1977
P. 257

Letters to The Journal

From: Michael Geltz
Niagara Falls, New York

In the December 1959 issue of the *Aquarium Journal* you had a story on "Skipping Goby" by Joseph L. Tupper Jr. I like this fish very much and would like to get some of them. I have been looking but so far I have found nothing more about where to get them. Could you please send me any information on them as to where to get some.

REPLY: Mud skippers are occasionally imported from the Philippines or other areas in the tropical Pacific Ocean by wholesale dealers of marine fishes. Most of the fishes are sold to tropical fish stores in large metropolitan areas such as New York or Los Angeles. Import cities such as San Francisco, some areas of Florida and larger Eastern cities will have them occasionally too. We are not familiar with the tropical fish market in the Niagara Falls-Buffalo area, but fish such as these seldom find their way to areas even of this size. Your best bet is to look in the current aquarium magazines for advertisements by mail order dealers of marine fishes. Write to them telling them what you want. Arrangements may then be made to ship to you these fishes the next time the dealer gets some in stock.

From: Norman O. Bascom
Mount Vernon, New York

I have been handling a fish in my store which I have known as *Barbus schwanenfeldi*. I have not been able to get any information on this fish as to breeding, etc. This week, I came across the *Aquarium Journal* of August 1959, Volume XXX, No. 8 and on the cover was the above fish on which I have been trying to get information. I am writing to ask you if any of your magazines has

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Hobbyists, breeders, and dealers (only) may now place Want Ads in *The Journal*. \$2.00 for 20 words, plus 10 cents each additional word.

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For East Tropical Fish—Write for price list today for the high quality fish with the most reasonable price: Larsens Aquarium, Prakanong P.O., Box 125, Bangkok, Thailand.

Live cultures—Dwarf white worms, \$1.50. Microworms, \$1.25, including instructions. Airmail 50c additional. Add sales tax where applicable. Blue Lagoon Aquarium, 1644 Irving St., San Francisco 22.

Salt Water Fish—coral, sea horses; not cheap, but fish are all healthy and disease free! Coral Reef Exhibits, P.O. Box 59-2214, Miami (AMF BR.), Florida.

Live Cultures—Tropical red worms, \$1.25; white worms, \$1.25; micro-worms, \$1.25. Any two for \$2.25. All three for \$3.00. Generous cultures. Shipped postage prepaid. Instructions included. Air mail 50c additional. Culture Gardens, 454 Leonard, N.E., Grand Rapids 5, Michigan.

Marine Fishes from Philippines—Exporters, Conditioned, various colorful species. Inquire direct: Tropical Pet Shop, 1008 Ongpin Street, Manila, Philippines.

Live Cultures—(with instructions) USA only. Drosophila (wingless) \$1.75. White Worms \$1.50. Tropi-White Worms \$1.50. Dwarf White Worms \$1.50. Micro Worms \$1.00. Daphnia (pulex) \$2.00. (Food different for each culture \$1.00 per box.) Live delivery guaranteed. Postage prepaid. George Hansen, Box 414J, St. James, N.Y.

Moving—Must sell assorted swordtails, mollies, marigolds and tanks. Phone 5K 2-3436 after 6:00 p.m.

Albino veiltail guppies—cream bodies, red fins with aqua highlights. Young breeders. C. Basil Jordan, Moore, Texas 78057.

Geophagus jurupari ("demon fish")—cichlid mouthbreeder; young; 50¢ each for orders of 10 or more. **DISCUS**, 3" to 4", each \$10.00. Contact Weyrauch, 2300 California St., S.F., FL 6-8045.

had an article on the fish you had on the cover. If so, how can I get that issue? If no issue is available, I wonder if it would be possible for you to send me some information you might have on this fish.

REPLY: Yes, as you probably noted we mislabeled that cover photo. A correction of this appeared in the September 1959 issue and an article on the fish appeared in the February 1961 issue. These issues are available at 40 cents per issue from the Aquarium Journal, California Academy of Sciences, San Francisco 18, California.

From: Carlos F. Reichard
Aguadilla, Puerto Rico

I am 24 years old, a hobbyist for over 10 years, a student, and now keeping 3 (1, 2, 10 G) aquariums with mollies, swordtails, barbs, tetras, gouramis, catfish, Australian rainbows. I have both native and exotic plants, such as *Cabomba*, *Anacharis*, foxtail, *Salvinia*, *Pistia*, *Eichornia*, *Aponogeton ulvaceus* and *undulatum*, *Cryptocoryne*, *Nuphar*, *Mibrosorium pteroptus*. I soon plan to have two more aquariums—now under repairs—added to my set up, buy more fish and plants. I would welcome letters from male or female hobbyists both older than or younger than myself.

From: James Delaney
Erie, Pennsylvania

I am interested in breeding *Corydoras* and I would like to know something

about them. If you have any free information about them please send it to me.

REPLY: We do not have any free information we can send to you, but an article on breeding *Corydoras cochui* appeared in the June 1961 issue, on Albino *Corydoras aeneus* in the November 1962 issue, a note on identification of *Corydoras* in the July 1959 issue, a long letter on breeding *Corydoras* in the March 1957 issue and a general article in the November 1956 issue of the *Aquarium Journal*. These are available from us for 40 cents each.

From: Harold G. Prenter
South Burnaby, B.C., Canada

I regret to inform you that Dr. Wistreich is sadly misinformed as to fish and stamps. The first stamp issued by Newfoundland showing a codfish was in 1866 and reissued in 1876 and 1879. I have not checked any further, there may be an earlier issue by some other country, one of your other readers may have an earlier date.

★ IDEAS ★
BY HOBBYISTS

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