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The Magazine Aquarists Believe In

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cover photograph

Goldfish winners in two S.F.A.S. Fish Shows, in 1963
1965. For more about goldfish and the 1965 S.F.A.S. Fish
Show, turn to Pages 328 and 329 of this issue. Both cover
photos by Dick Law.





The big question is: How to survive
fishes, maggots, cockroaches, drag-racers!

“Ucayali Alley”

PART VII

OUR NEXT destination was Pucallpa, the major port upstream on Peru's mightiest river, the Rio Ucayali. A dirt road connected Tournavista with Pucallpa, a distance of some 60 miles. If the weather is good, the average travel time is three hours. Our transportation consisted of a bus-like structure mounted on a Ford truck chassis. The driver's nickname was “Lobo” (i.e., “wolf”) although Barney Oldfield would have been more appropriate! Jon, Felix, Zeke, Jim, Jerry, Win and I hopped aboard along with a small contingent of Campa Indians. Our equipment was stowed on top of the

Albert J. Klee, F.A.K.A.

Westchester, Ohio

truck and considering the cramped quarters within, Jim and I elected to ride on top over the cab. This, as it proved, was a big mistake.

Our driver evidently was devoting his life to rounding off the teeth on the Ford's gears. It was a point of honor with him not to use either first or second gear, or the brakes, if it could possibly be

Photo: Jon Krause and Jim Thomerson fishing along the shoreline of the Ucayali. Cattfishes by the thousands were caught here. All photos by author.

avoided. There was one speed only, and that was "full ahead." The low-hanging branches frequently did not clear the top of the truck, let alone Jim and myself, and every so often a branch would knock me flat. I perfected a ducking procedure but it was not 100 per cent effective. Further, it was cold on top of the truck for as soon as the sun goes down, the jungle becomes quite cool. Fighting both being knocked silly and incipient frost-bite, the perilous journey screeched to a halt in the main street of Pucallpa at 1 a.m. Our next problem was accommodations. Jon, Felix, Zeke and Jim obtained "dormitorios" at a doubtful structure known as the "Hotel Los Angeles," and after pounding on doors for an hour, Jerry, Win and I found sleeping quarters at the Hotel Mercedes, Pucallpa's "best." Later, we really were to appreciate the Hotel Mercedes.

At 2 a.m., we were all tired and thirsty so the Mercedes group found an all-night beanery *poste haste*. Being the only one with a speaking knowledge of Spanish, I

was commissioned to order beers for all. Either it was just too late and I was too tired, or my high-school Spanish teacher had steered me wrong, but in either case what arrived was an evil-looking mixture of coffee and sour milk. I really took a ribbing from the crew that night!

The next morning, the Mercedes group joined the Los Angeles group for breakfast. We discovered a newly-opened restaurant that featured a "complete breakfast." It started off with papaya juice but next on the agenda was something called "Quaker." None of us knew the translation for "Quaker" and when the proprietor was questioned, his answer made no sense at all. When it arrived, it turned out to be a thin gruel of Quaker Oats, served up in a chipped porcelain mug! Three-quarters of the way through the "Quaker," Win discovered his to be full of maggots. Sure enough, all of our cups had this unbargained-for extra addition of protein. Since there was no extra charge and in view of the fact that they appeared well-cooked, we downed the remainder with a stoicism typical of our Peruvian friends. Afterwards, I always ate wearing my sunglasses and with my eyes averted to the ceiling. It was much better for my morale and I didn't want to panic my stomach by sending distress signals in advance.

The business of fishing the Ucayali River and its tributaries now began in earnest. We had a small outboard motor so our next stop was to find a boat. While a portion of the group scouted out a "Peki-peki" (the native name for a canoe plus outboard motor . . . a consequence of the sound of the motor!), the remainder of us strolled down to the river's edge. Here, jungle steamers were being loaded for the long (one month) trip down the Ucayali to Iquitos in northern Peru. Groups of Chapeba Indians were present everywhere. One family rode



Photo: Indian houses on the outskirts of Pucallpa.



into shore right in front of us, started a fire, upended a live turtle over it and commenced breakfast. This may not sound appealing, but at the time it looked considerably better than "Quaker." The women, who were quite colorfully garbed, had with them a baby capybara, the largest rodent in South America (up to 300 pounds!). Zeke wanted it for the zoo in Cincinnati and I acted as interpreter. Remembering the beer-coffee incident the night before, there was some fear that I might inadvertently bargain for one of the women instead, but we did manage to wind up with the capybara for the sum of \$2 without causing any international incidents. Besides, the capybara was not only better-looking, but it smelled better!

Not waiting for the canoe, we started to seine right along the shore next to the river steamers. It was like seining in a mud-hole, pure and simple, yet, our seine

brought up great quantities of catfishes of the *Doras* and *Pimelodus* types. Each one of them would be worth \$5 or more as prime show specimens in any aquarium shop. And new species? Whoever started this nonsense about it being hard to find new fishes? One could accidentally drop his hat into this muddy river and spend the rest of the day picking out new and/or fascinating fishes for the aquarium.

Our canoe finally showed up, along with Jerry sporting a new straw hat. The hat was large, giving Jerry an "Evil-eye Fleagle" look but it effectively warded off the burning rays of the sun. Zeke took off his T-shirt and wore it under his hat, and Win arranged a large kerchief over his head and under his chin to effect a "Mother Hubbard" appearance. In a 100° F. climate (on the shores of the

Photo: The shores of the Ucayali River at Pucallpa.

Ucayali at noon), everyone to their own devices! I used the simple expedient of staying in the water up to my lower lip, emerging only for air and lunch at stated intervals. Lunch, by the way, consisted of hard bread, canned sardines and hot beer. Peristalsis is defined as a natural contraction and expansion of the intestines as a consequence of the eating act. My stomach, however, gave up peristalsis early in the game.

The fish we were catching were simply fabulous both in quantity and in variety. *Brochis coreuleus* were captured literally by the thousands and our bag included needlefish, sundry tetras, loricariids, cichlids . . . you name it, we caught it. Especially prevalent were the parasitic catfishes of the family Pygidiidae, those unpleasant little creatures reputed to enter the genital openings of humans upon occasion. I was especially interested in these creatures as I wanted to collect them for the Smithsonian Institution. Some clown in the crowd had suggested

that I wear a pair of cast-iron jockey shorts while collecting them but his whimsey disappeared as he and a companion brought up a net full of medium-sized piranhas. We concluded that, if we weren't careful, the whole lot of us might wind up singing second soprano at church services if and when we returned home. This brings to the fore the interesting question of the hazards we faced while fishing. Certainly pygidiid catfishes and piranhas are potentially dangerous to man but the dangers are comparable to those we faced in the typical "complete breakfasts" we ate. A greater practical danger was the terrible, swift current of the Ucayali itself, and had we capsized in the middle, we no doubt would have drowned. Whether or not seining the shores of the Ucayali is as dangerous as seining in Central Park after dark, is a moot question indeed. But to return to the fishes and their

Photo: Felix Zeke and Win handling a "Peki-Peki" on the Ucayali. Houses in background are built on stilts.

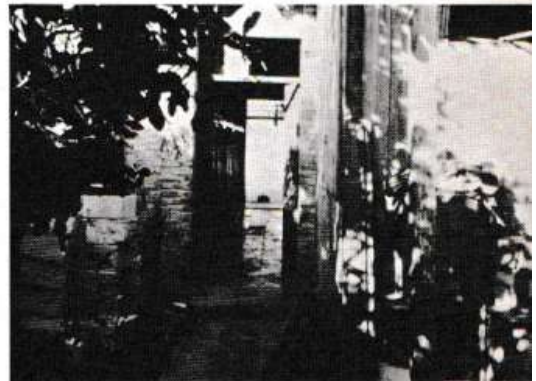


water, complete analyses of these habitats studied will be presented in the last article in this series.

Our bill at the Hotel Mercedes came to \$2.40 for the night and when we found out that the Hotel Los Angeles was only charging 80 cents a day, Jerry, Win and I moved in with the others. This, it turned out, was a grave tactical error. Win and I elected to share a double and our landlady led the way. After unlocking a rusty padlock which secured the door, we viewed a musty, disheveled room which looked as if the last occupant had left minutes before the police arrived looking for him. Our landlady took the sheets off the beds and simply turned them over (they were in such a condition that they could have turned themselves over!) The mattresses were of straw as were the pillows. It became clear that we were sleeping on top of a rather active colony of sundry animals belonging to other than the vertebrates. The cockroaches were four inches long but they did not wake us up unless they stomped their feet. The iron cots upon which we were sleeping moved about innumerable times during the night, but neither Win nor I cared to investigate too closely who or what was providing the motive power.

The following day we explored Pucallpa, a city of some 50,000 inhabitants. It, except for the presence of many trucks and some electric light poles, resembled an American wild-west town of the 1870's. Pigs roamed the dirt streets at will, and the outdoor market was right out of a picture postcard. Win and I sampled the products of a street vendor (a drink made from red corn called "chicha morada" was our favorite) and afterwards, dubbed them "instant dysentery." We had expected to run around a lot in Peru, but not that way! Meals were cheap, however, and 24 cents would buy a steak dinner (Jerry insisted that it should be spelled "stake"). A bottle of Pisco, the national brandy (and spot re-

JULY, 1965



Photos: (Top) A typical "bee-hive" oven in the yard of a Pucallpan. (Middle) A view from the courtyard of the Hotel Los Angeles. (Bottom) Chapcha Indian women with their baby capybara on the shores of the Ucayali.

mover), cost but 48 cents a fifth. The activity, the heat, the color, the dust, the
(Continued on Page 339)

WHAT is "ripe" water? I have yet to find an aquarist who can answer, but I dare say there are few, if any, who fail to recognize it when they see it. Does it have a distinct chemical composition? Can it be scientifically produced? Or is it a myth? There's a crystal quality to "ripe" water that's like nothing

were inhabited by the same number of fishes, fed at the same time and lighted the same number of hours. One stayed clean and fresh while an ugly growth of blue-green algae began to cover the rocks and smother the plants of the other. Algae accumulated on the glass faster than I could scrape it off. Al-

Some of these odd happenings may make
our hobby all the more provocative!

Fish Tank Mysteries

else. There's never an unpleasant odor. Matter never stays suspended, but settles quickly to the bottom where it can be easily siphoned off. I've seen stubborn tanks clear up overnight with the simple addition of a gallon or two of water from a "ripe" tank. What magic ingredient does "ripe" water have that is lacking in cloudy water. Fishes and plants in such a tank are invariably in top condition. But do the healthy fishes and plants create the "ripe" water? Or does the "ripe" water make the fishes and plants healthy? A mystery!

I once set up two identical tanks, side by side, at the same time. Both were given the same amount of aged water and planted with the same plants. They

Dorothy O'Quinn

East Point, Georgia

though the water stayed clear, the overall appearance was bad and it was only after I had completely re-done the tank that it behaved. Why did this nuisance attack one tank and not the other?

Recently a distressed friend called and asked if I would take a look at his tank. It was, indeed, in serious trouble. I'd never seen one just like it. (I've since heard of two others in a similar condition.) The water was chalky white and giving off the most peculiar odor, sweetish and sickening — one I couldn't identify. The glass was covered with a thick slime. It was true that there were too many fishes for the size of the tank, but this wasn't a simple case of over-crowding or over-feeding. It was different.

The fishes could only be seen when they swam near the glass and I had to draw off most of the water before I could get them out. I brought the tank home where I had a more convenient place to work it over. After cleaning the glass and the bottom with plenty of table salt, I rinsed it in very warm water

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THE AQUARIUM JOURNAL
Steinhart Aquarium

San Francisco 18 California

and let it dry. I washed the gravel through several waters and soaked it in a clorox solution for thirty minutes. Then I rinsed it several more times, spread it out in a shallow pan and put it in a hot oven until it was thoroughly dry. When I took the tank back and set it up with water from my own tanks, it looked pretty good. I had corrected a bad situation, but what had caused the trouble in the first place and how could a recurrence be prevented? A mystery! And the biggest mystery of all was how the fishes had survived such a condition.

Why will certain plants do well in certain tanks and not in others? I have long since quit letting this upset me. Each tank seems to have a distinct personality of its own, as do the different fishes. If cryptocoryne thrives in one tank and ambulia comes to pieces, I let that tank have the cryptocoryne and put the ambulia in a tank it likes to grow in. A lush growth of water sprite can make a striking appearance, but nothing is uglier than water sprite that persists in a rusty color and poor growth, so I plant water sprite in tanks where the conditions are to its liking. And so it goes with other plants. It doesn't take long to find out which plants will grow well where, so why fight it? But who can help wondering?

I spawned a pair of bettas. The male was about nine months old and in beau-

tiful condition — perfect fins, good color, slender body, eating and behaving well. He had been spawned several times before. The female I used was about the same age, looked good and was full of eggs. They spawned readily, but the female took an awful beating in the process and was bruised and torn when I took her out. There was a good sized nest of eggs, however, and everything seemed in order.

The next morning every bubble was gone . . . and every egg. I took it for granted the eggs had been infertile for some reason so I waited a week and introduced a younger female. This time the female was hardly hurt at all and although the nest was small, there was a sizable pile of eggs. During the night the male built up his nest and seemed vigilant the next day. The eggs hatched on schedule and the fry looked good as far as I could determine. That night I left a dim light, as I always do, and went to bed thinking all was well. The next morning I found him crouching in a back corner of the tank, looking guilty, and not a single baby could I find. Why had this fish that had previously been a good breeder suddenly turned cannibal? Needless to say he's been exiled from the breeder shelf, for I can no longer trust him, but he's by far the handsomest male betta in the fish room, with all the characteristics (save this one) I like in my breeders. What a pity!

Not long ago I cleaned a ten-gallon tank, moved some young female bettas in and added about a dozen small catfish. (This is routine in our fishroom, for we raise a lot of cats and keep them scattered around among the different tanks to finish their growth.) The next morning three of the little cats were dead. I immediately checked the water pH, as acid water will kill some catfish in a hurry, but there was nothing wrong

(Continued on Page 337)

**AT LAST, A SALT WATER
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The original piece on these pesky devils
caused quite a stir in aquarium circles

The (Red) Devil You Say!

AFTER one sends out the end product of one's thought machinery in the form of the written word over a period of time to lay there inertly . . . little black letter strewn out over a blank piece of magazine paper . . . one starts to wonder whether or not anybody ever takes the time to forge through it, to agree, or to even say, "Boy, what does *she* know about it anyway!"

But every so often, one either throws an egg in the fan or else hits a main artery, and I never got downwind of so much purely blue blood as I did after my article, "The Red Devils" came out in the January, 1965, issue of the *Aquarium Journal*. Oh, I tell you, my mail

Diane Schofield

Burbank, California

had real class and stature from that day forward!

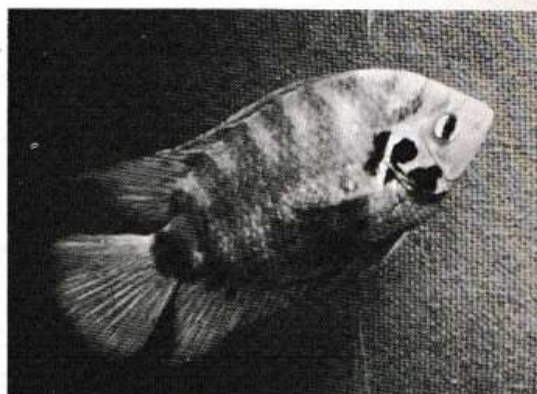
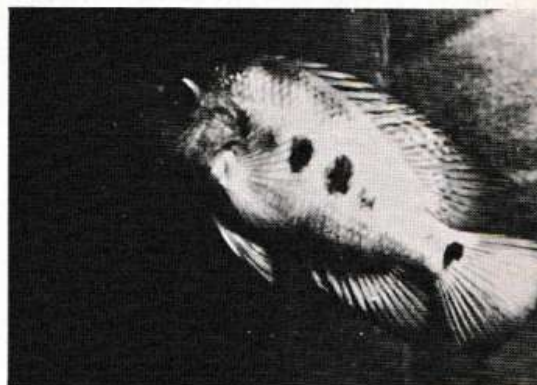
As I admittedly stated in that article, the classification of these fish is much up in the air. I spent some time trying to track down the correct nomenclature which was as easy as trying to find an albino angleworm in a plate of spaghetti. Very, very little has been done in the

Photo: *C. managuense*, very attractive but very belligerent, too. Mr. Landis' aquarium at Columbus has one specimen of 13 inches, and two at 4 to 5 inches that he brought back from Nicaragua. All photos by Eldon R. Reed.

Central America area from which these fish stem, ichthyologically speaking, and this fact, coupled with an additional one, that the people who recently brought them in for aquarists' consumption, didn't want the exact location bandied about, made the job even more tenuous.

If one is going to sleuth, one might as well sleuth in style. Why jump onto a Honda, if a Cadillac is available? So I originally went to two of the top men in the Los Angeles area, insofar as what might be termed Gill Gazers, go. These were William Bussing, who has spent considerable time in Central America working on his master's degree at U.S.C. in Ichthyology by studying the ecology of the fish there and Gene Wolfsheimer, who has frequently been draped with the tag of "Mr. Aquarist."

Mr. Bussing dug up one of the few works that have ever been written on fish of Central America, "Synopsis of the Fishes of the Great Lakes of Nicaragua," which was written by Dr. Seth Meek, who was then Assistant Curator of the Field Museum of Chicago. Using this effort, together with the usual fin, ray and scale count, Mr. Bussing opined that the red cichlids that were coming into the country were, in all probability, *Cichlasoma erythraeum* and *Cichlasoma citrinellum*. Logically, if one is to take into account, the literal meaning of these names, the first should be the red phase of these fish and the second, the yellow phase. However, these fish are subversive, shady and completely uncooperative, because both seemed, on the surface, to have a variety of color phases, assorted black markings and then strangely enough, one kept bumping into those huge protuberant lips which would crop up on one fish and not on another who



Photos: (Top) This *C. erythraeum* spawned by Father Rstorqui. The parents of this fish are said to be red. Within two months of captivity, color change began to take place. Of 16 specimens, 10 are golden yellow, two are in the process of turning and four remain unchanged. (Middle) *C. centrarchus*, one of the handsome fish which Mr. Landis brought back from Nicaragua, found in the same locale as the red devils. (Bottom) *C. citrinellum*.

looks almost enough like it to be his blood brother.

But when the smoke drifted away from the scene, all of these educated guesses were just that, because it often takes a very lengthy space of time to correctly classify a fish, even one who comes right out in plain view without trying to throw a lot of, you should excuse the expression in this case, "red herrings," in the path of those trying to ferret out its true nomenclature.

Very shortly after this initial article had been aired to the gaze of all and sundry, letters started to come in. None of these were ordinary letters. Every one of them were from areas of distinctly rarified air, because the men who wrote them are listed among the top professional aquarists of the world.

First came one from Dr. Earl S. Herald,

★ IDEAS ★

BY HOBBYISTS

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

Nylon Netting and Spawning

Have you tried to spawn non-adhesive egg layers like pearl danios, zebras, etc., without much success? Have you found glass rodding and plastic or metal screening hard to find and expensive? Also, who wants a thousand marbles to look after! Try nylon netting, the type that has holes big enough for eggs to fall through. The netting can be obtained easily and inexpensively from a fabric shop. Shape the netting to fit the inside of the aquarium and use the excess to fold over the outside to hold the net at the desired level. When the spawning is over, the net and the fish can easily be removed. This also facilitates the job of catching the fish. The net can then be washed and reused. — Bruce C. Blackman, Athens, Ohio

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Superintendent - Curator, of Steinhart Aquarium of San Francisco. Now, this is one of the most fabulous and fascinating personalities in the field. When I visited Steinhart before its new unveiling not too long ago, he was kind enough to take time out from his extremely busy schedule on two separate days to show me around. I stood in awe of his vibrant, crackling personality and this is before I ever got around to admiring his steel trap-like mentality. In essence and to quote directly from Dr. Herald's letter to me, "The excellent photographs of your red devils in the January *Aquarium Journal* are undoubtedly all examples of Mojarrá Colorado, i.e., *Cichlasoma labiatum*, adult size. We have youngsters of this species in our tanks but have not as yet spawned them. The authority on the species is Father Ignatius Astorqui, of the Colegio Centro America in Granada, Nicaragua; he sent the fishes to us. He is a student of Professor Luis Rivas, ichthyologist, at the University of Miami."

One of the reasons that Mr. Bussing had discarded the name of *C. labiatum*, although it was listed as the other red cichlids of the three (the other two being, *C. erythraeum* and *C. citrinellum*) found in Nicaragua, was because Dr. Meek described it as having long fleshy appendages on its prominent lips that were beard-like and sometimes were one-third as long as its head.

Then on the stamp-encrusted heels of the letter from Dr. Herald came along one from George E. Landis, who is the Curator of the Arthur C. Johnson Aquarium of the Columbus Municipal Zoo of Columbus, Ohio. "Your article in the

CLUB NEWS

Toledo Amateur Aquarium Club

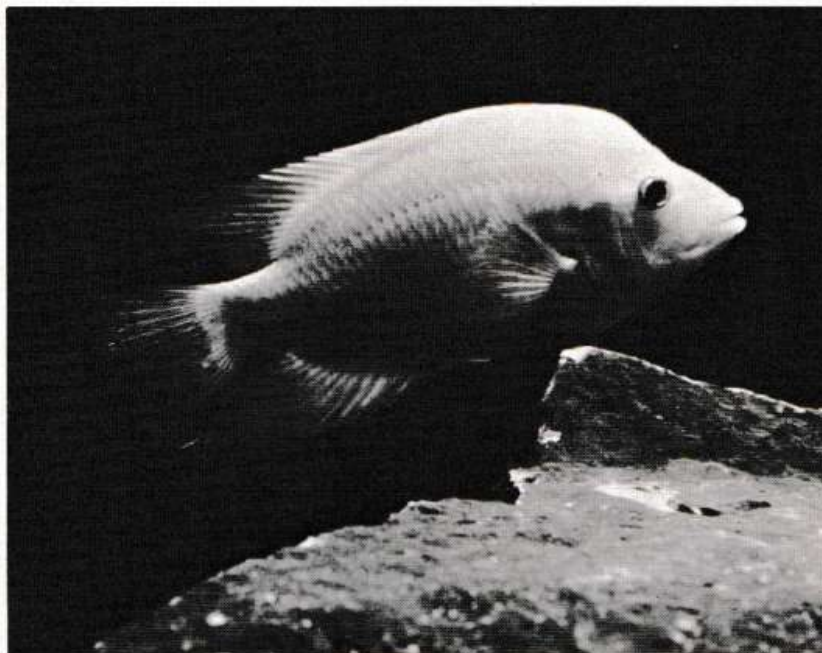
The T.A.A.C. will hold their 32nd Annual Show at the Toledo Zoological Park, Aquarium Building, September 4-6, 1965, according to Mrs. Warren Hartman, Publicity Chairman.

AQUARIUM JOURNAL

January issue of the *Aquarium Journal* was of particular interest to me, as I visited Nicaragua last June and brought back several of the species you describe.

While in Nicaragua I became acquainted with one Father Astorqui, who is a teacher of English at a private Catholic high school called the Colegio de Centro America located in Granada. During recent years he has made an exhaus-

back and identified as *C. labiatum* because of its long lips, has in recent months shown a definite decrease in the size of same and is now practically indistinguishable from other specimens which we call *citrinellum*. 2) At the high school Father Astorqui has a pool, in which he keeps nothing but the red cichlids. He kindly let us have eighteen of the young, which were two and one-half



tive study of the fishes of Lake Nicaragua and has compiled his data into a book, which he is now attempting to get published. All of the fishes mentioned in your article are to be found in Lake Nicaragua.

"Father Astorqui has advanced the opinion that *erythraeum*, *citrinellum*, *labiatum*, and possibly others, may well be only different phases of the same species. As evidence possibly substantiating this theory, let me cite the following: 1) One specimen which we brought

inches in length. At this size they looked exactly like *C. citrinellum*, being olivaceous in color with seven vertical bands on the sides and dark blotches at the center of each band, along the lateral line. At the present time there are a few which still retain this coloration (and they are not the smallest), but the majority have turned, or are in the process of turning, a beautiful lemon yellow. Size now ranges from four to six inches. Re-

Photo: *C. erythraeum*. Color seems unrelated to size. As yet there is no indication that the yellow fish will eventually turn red.

membering that all these specimens are from red adults and from the same spawning, it will be interesting to observe what future transformations take place.

"I'm sure this will do nothing but further confuse the situation, but I thought you might be interested in my experiences. Two other species from this area — *C. magaguense* and *C. centrarchus* — are very lovely fishes, although the former get too large for the home aquarium."

Also in the text of the letter from Mr. Landis, was a mention of an actual spawning of these sometimes red devils by the Fort Worth Zoological Park in Fort Worth, Texas, so I fired off a letter of my own to Lawrence Curtis, the Di-

★ **I D E A S** ★

BY HOBBYISTS

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Filter With Nylon Net

When you siphon the debris from the bottom of your tank attach a piece of coarse nylon netting to the end of the siphon hose you place in the tank. This will prevent gravel and small fish from being sucked into the hose, but other fine waste materials will still pass through the netting holes. — Mrs. Stan Ladwig, Minneapolis, Minnesota

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rector of this establishment. Mr. Curtis said in reply, "So far we have had two spawnings from the same pair and are raising (in isolation) about 200 from each spawn, the first being about six weeks old now. Interestingly enough, these fish spawned in a 2,000 gallon South American 'community' tank in which several other fish are exhibited (*Astronotus*, *Cichlasoma severum*, *Osteoglossum*, *Ctenolucius*, and several large catfish, *Plecostomus*, *Sorubim*—3 species, and *Phractocephalus*). That's what I would call real paternal devotion!"

But the name that kept cropping up more frequently than any other was that of Father Ignatius Astorqui, the Jesuit priest from Spain, who got his B.S. in Biology at Spring Hill College, Mobile, Alabama, and his M.S. in Zoology at Miami University in Florida. Father Astorqui was most generous in sharing his knowledge of the red devils with me, but then who could be better qualified for dealing with "devils" in any form than a priest?

Dr. Herald had sent a copy of the *Aquarium Journal* to Father Astorqui, bearing my previous article, so I didn't spring up as a complete surprise to him. His letter was so well written, that no improvement is possible, so I shall quote (Continued on Page 338)

CLUB NEWS

Tri-State Aquarium Society

This fairly new club was organized in January of this year. The name was selected because the location of the club is Ashland, Kentucky — with members in that state as well as neighboring states of Ohio and West Virginia. Their club publication is "Tropical Topics." Meetings are held the second Thursday of each month in the Biology Room of Ashland Community College, according to Norma Dheel, Secretary.

WITH THE variety of fancy goldfish available at times, novices in the goldfish hobby are often bewildered by the number of features to be examined in a potential purchase before making the final decision as to whether to buy or not. Another difficulty is that most hobbyists have not often seen top quality goldfish to use as ideal standards for their future breeders. Very rarely are top quality fish offered for sale in the average dealer's shop, with most of the fish seen actually consisting of culls from professional breeders or advanced hobbyists. Many of the fancy goldfish offered for sale are imported — the dealer

tion to the following listed fancy fish, a considerable number of additional types are raised in the Far East but are rarely seen in our Country. The common varieties of fancy fish seen can be divided into the following general descriptive groups:

I *Single tailed fish.*

A. *Comet*

B. *Shubunkin (Bristol and London types)*

These fish are not often exhibited here with most hobbyists apparently preferring to show the double tailed fish, but these types are beautiful when well developed. The comet is a long-bodied and



Picking prime goldfish

need not be difficult!

How to Choose Good Goldfish

has often purchased these sight unseen and must dispose of them regardless of the quality. Under these circumstances, it is not too surprising that exporters in the Far East may take advantage of their situation to dispose of poor quality fish while retaining the best fish for themselves and favorite customers.

The hobbyist's problem of choosing his fish is simplified if he will remember that many of the goldfish varieties have features in common, especially regarding body shape, and fin number, size, and shape. No official standards have been formulated for American goldfish similar to the regulation British standards, but long experience and custom have recognized most of the features of the official British standards. In addi-

Sylvan Cohen, M.D.

Los Angeles, California

long-tailed fish with metallic type of scales. The tail often exceeds the length of the body and should be at least as long as the body. The shubunkins have long bodies also but are transparent scaled, usually referred to as calico coloring. The tinting of the fish is very important with preference given to variety of color including scattered dark areas and with splashes of red, blue, brown, and yellow. Many of these fish show scattered metallic scales, but these are considered a defect. The London type has a short tail like a common goldfish,
(Continued on Page 331)



Over 100 tanks displayed, with Best of Show Award to Dutch aquarist

● 1965 SFAS Fish Show

OVER 100 tanks were entered in the 1965 Fish Show sponsored by the San Francisco Aquarium Society, Inc., North American Hall, California Academy of Sciences, Golden Gate Park, May 22 through 24th, according to the Show Chairman, Joe Zins.

The Best of Show Award went to an aquarist formerly of Holland, now residing in San Francisco and a member

of the Society, Jack Lockhoff.

Trophies and ribbons were awarded the following winners at the June meeting of the Society:

1A—GUPPIES—BLACK, GREEN OR BLUE

BROADTAILS

1. John Gabri
2. Golden Gate Guppy Group
3. Louis and Sheila Bellso
4. David Lewis

Photos: (Top) Best of Show winner Jack Lockhoff is shown with Diane Schotfield, a visitor at the show. (Right) A novelty tank winner at show. (Below) Closeup of Jack Lockhoff's winning tank. Photos by Dick Law.



- 1 B—GUPPIES—RED BROADTAILS**
 1. B. and J. Allardyce
 2. John Gabri
 3. Charles Adams
- 2 B—TEMPERATE MARINE**
 1. Student section
 2. Castro-Mills-Garibaldi
 3. Jim Mills
 4. Lou Garibaldi
- 3—COMMUNITY TANKS**
 1. Jack Lockhoff
 2. B. and J. Allardyce
 3. Lawrence Camarena
 4. Tom Reardon
- 4 A—BETTAS—SPAWNED AND RAISED BY EXHIBITOR**
 1. Dennis O'Rourke
 2. Dennis O'Rourke
 3. Dennis O'Rourke
 4. Dennis O'Rourke
- 4 B—BETTAS—NOT SPAWNED AND RAISED**
 1. Dennis O'Rourke
 2. Dennis O'Rourke
 3. Dennis O'Rourke
 4. B. and J. Allardyce
- 5—TERRARIUMS**
 1. George Silva
 2. Student Section
 3. George Silva
 4. Student Section
- 6 B—EGGLAYERS**
 1. Louis Garibaldi
 2. Alfred Castro
 3. Gary Kearns
- 7—LIVEBEARERS**
 1. Dick Nichols
 2. George Wong
 3. Marshall Wong
 4. Lawrence Camarena
- 8 A—KILLIFISHES**
 1. Dick Law
 2. Dick Law
 3. John Romero
 4. John Romero
- 8 B—CICHLIDS**
 1. George Wong
 2. Ice Etzler
 3. John Glennon
 4. Tom Reardon
 5. Frank Glennon
- 8 C—ANGUANTIDS**
 1. Alfred Castro
 2. John Romero
 3. B. and J. Allardyce
 4. Alfred Castro
- 8 D—EGGLAYERS**
 1. B. and J. Allardyce
 2. Lawrence Camarena
 3. John Romero
- 9—JUNIOR COMMUNITY**
 1. John Tait
 2. Gary Kearns
 3. Roger Sitkin
 4. Judy Dan
- 10 A—DEALERS' DISPLAY**
 1. Capitol Aquarium
 2. Aqua-Serv
 3. Capitol Aquarium
 4. Capitol Aquarium
- SPECIAL AWARD**
 Far East Aquarium
- 10 B—DEALERS' DISPLAY SPECIAL AWARD**
 1. Mei-Len
- 11 A—GOLDFISH**
 1. Dennis O'Rourke
 2. Marshall Wong
 3. Marshall Wong
 4. Dennis O'Rourke
- SPECIAL AWARD**
 Susan Carson
- 11 B—CARP—SPECIAL AWARD**
 B. and J. Allardyce
- 12 A—PETS**
 1. Edward Guillory
 2. John Untack
 3. Jim Mills
 4. John Romero
- 12 B—NOVELTY**
 1. Peggy Scott
 2. Gary Kearns
 3. Louis Garibaldi
 4. B. and J. Allardyce
- BEST OF SHOW**
 Jack Lockhoff

Goldfish

(Continued from Page 328)

while the Bristol type has a longer tail which is somewhat broader than that of a comet.

II Double tailed fish.

A. With dorsal fins.

1. Veiltail (*Fringetail, Broad-tail*)
2. Fantail
3. Telescope
4. Oranda
5. Moor
6. Pearl scale

B. Without dorsal fins.

1. Lionhead
2. Celestial
3. Bubble-eye
4. Pom-Pom

All of these fish have double tails which should be completely divided, double anal fins, and of course, double ventrals and pectorals. The above listed group A fish then will have nine fins including the dorsal, while the group B fish have eight. The most common defect in this area of judging is the presence of only a single anal fin. This deficiency sometimes seen on a fish with all other features approaching perfection is still considered a cause for disqualification by British standards.

The main features of the veiltail can be applied to the Telescope, Oranda, and Moor, so only one description is required. The body of the fish is short and heavy, approaching a circle when seen from the side. The length of the dorsal and ventral fins should at least equal the height of the body, while the anal fins should approach the body height. (The hobbyist may find himself on the floor with a flashlight and a kink in his neck trying to examine the anal fins.) The tail should be about one and a half or two times the length of the body. The trailing edge of the tail should ideally be straight, but these fish are so rare that

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they are often referred to specifically as Broadtails, while the looser terms of fringetail or veiltail are frequently used for those fish with some degree of forking in the tail. These terms are often used interchangeably and without specifically differentiating them, but the ideal of a non-forked tail should always be aimed at.

The telescope, oranda, and moor can have long fins like the veiltail, or be shaped like the fantail which generally has an oval body rather than round, and shorter fins than the veiltail. The fantail is recognized by the British as a true variety, but here, most of the fantails seem to be derived from inferior quality veiltails that never developed the body or fins desired.

The eyes of the telescope and moor should protrude prominently and symmetrically. In addition, the moor, by definition, is black — a dark, sooty black, not the bronze so often seen. The oranda is distinguished by the fleshy head growth similar to that of the lionhead, but rarely as pronounced.

The pearl scale has its own body and fin shape, in addition to its distinguishing feature of prominent, bumpy scales which gives to a well developed specimen the texture of a beaded pearl bag. The body is almost spherical, while the fins and tail are broad — somewhat shorter than those of the veiltail. A good

CLUB NEWS

Golden Gate Guppy Group

The July meeting will feature a bowl show, with fish to be auctioned off at the end of the meeting, according to Virginia Masters, Secretary. The meeting will be held July 20 at 8:00 p.m., Visitacion Valley Community Center, 66 Raymond Ave., San Francisco. Meetings are held the third Wednesday of every month, Mrs. Masters said.

pearl scale looks like a golf ball with fins.

The group B fish often show a serious defect consisting of a bump or spike on the back in the place of the dorsal fin. The ideal is a completely uniform smooth curve over the back. The body of these fish should approach a round shape, while the fins are short and symmetrical. The poorer quality examples of these fish have long bodies rather than chunky and round — this is especially common in celestials. The tails of celestials are usually longer than those of the other group B varieties. The celestial's main feature, of course, is the protruding eyes which are prominent, symmetrical, and stare evenly upward. The lionhead has a large, fleshy growth over its head and opercula. When well developed, this may almost hide the eyes. The bubble-eye has large fluid-filled sacs hanging beneath its eyes. (These are susceptible to injury and may rupture on sharp rocks.) The pom-pom has large nasal

appendages waving over the nostrils, but otherwise looks much like a lionhead without its fleshy growth. I am not certain this can be considered a true variety, since similar appendages can be seen in other varieties of fish.

Color and scale variations can be seen in each of the fancy varieties discussed (except the moor). The most common type seen is the orange or orange-red metallic scaled fish, while the calico type scale and coloring is also frequently seen, as described for the shubunkin. Rarer types are the blue scaled and copper scaled fish.

Most hobbyists will find that they cannot find ideal specimens to use as breeders and will be forced to use fish with recognized defects in the hope that their offspring may include a few individuals with features better than those of their parents. As the hobbyist can see, there are still many challenges in goldfish breeding. ◀



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A note of caution when copper
is used with living brine shrimp

Brine Shrimp vs. Copper Solutions

THE STAFF at Steinhart Aquarium wishes to urge a note of caution when copper is used in the presence of living brine shrimp (*Artemia salina*). By way of background, we should point out that every major aquarium in the world has at one time or another been cursed with the insidious gill parasite known as *Oodinium ocellatum*. On the gills of fishes this dinoflagellate appears as a series of small, white pepper-like spots. Unfortunately *Oodinium* can be harbored by tropical marine fishes for an indeterminate period of time without apparently harming the fish. But after the host fish has been collected and introduced into a crowded aquarium tank, *Oodinium* may literally explode. An unwary aquarist may some morning inspect his tanks and find fishes huddled at the surface gasping for air. By that time it is too late, and the aquarist is lucky if he can salvage any fishes from the tank. Although *Oodinium* will not pass through a properly designed and operated sand and gravel filter system, it can be, and often is transferred from one tank to another by contaminated nets.

Steinhart Aquarium has had its share

Photo: A male brine shrimp as photographed by Robert Dempster.

Earl S. Herald, Ph.D.
and
Robert P. Dempster

of the *Oodinium* problem and in 1951 a search was started for compounds that might control this lethal dinoflagellate. The result was the junior author's paper in *Zoologica*^{*}, which described the effects of copper on *Oodinium*. This now historical document set the pattern for control techniques presently used by most large aquaria and oceanaria.

Oodinium and other parasites, as well as some disease conditions in tropical marine fishes can be kept under control by adding to the aquarium sea water a dilute solution of copper sulphate or other copper compound so that the concentration of copper is no higher than 0.2 ppm. The ideal treatment is 0.15 ppm maintained over a 10-day period; however, concentrations as low as 0.1 to 0.18 ppm will discourage the development and spread of *Oodinium*. Because of their

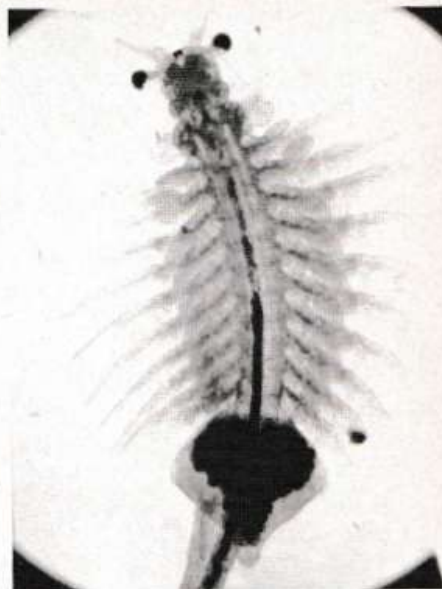
^{*}"The Use of Copper Sulfate as a Cure for Fish Diseases Caused by Parasitic Dinoflagellates of the Genus *Oodinium*," by Robert P. Dempster, *Zoologica*, Vol. 40, pt. 3, pp 133-139; 1955.

toxicity, addition of copper compounds to seawater must be monitored very carefully; even at these lower concentrations, copper can be lethal to many invertebrates, and concentrations of 0.25 ppm will cause death in some fishes.

In spite of the toxic nature of these chemicals, many large aquaria use them routinely. At Steinhart Aquarium, during copper treatment periods, we have noted that small, seemingly healthy tropical marine fishes were sometimes found dead in their tanks. These were often types that had just previously fed on brine shrimp. Invariably their stomachs were found crammed full of shrimp. Having watched these mortalities take place on more than one occasion, we began to wonder whether the brine shrimp might be accumulating more than normal amounts of copper from the salt water, and if so, could these "copperized brine shrimp" be causing the death of the fishes?

To test this idea we placed 100 cc of living brine shrimp in a 100-gallon container of sea water to which a small amount of copper sulphate (0.15 ppm copper) had been added. In a second container this same procedure was repeated, but the copper level was increased to 0.9 ppm. A third container served as a control. The tests were allowed to stand for 24 hours, during which time the copper content in the seawater of the first and second tanks decreased about 40% (from 0.15 to 0.09 ppm, and from 0.9 to 0.52 ppm), whereas the control remained constant. Following this, the brine shrimp were removed, dried, and their compacted bodies analyzed for copper. When Aquarist Richard Robison completed his tests, our suspicions were confirmed. The brine shrimp in the first two tanks had acquired from 150 to 200 times as much copper as those in the control tank.

Photos: (Top) ♀ female brine shrimp with eggs. (Bottom) ♂ nauplius. Both photos by Mr. Dempster.



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The actual figures showed that a normal brine shrimp could be expected to contain 0.01 ppm of copper in its body, whereas the shrimp living in seawater containing an initial dosage of 0.15 ppm of copper acquired a copper level of 0.16 ppm after 24 hours. The shrimp in the tank treated with copper sulphate at a concentration of 0.9 ppm copper initially, showed a 2.0 ppm copper content in their bodies. It is interesting to note that the brine in the copper-contaminated aquaria actually had more copper in their bodies than had been added to the water.

From the practical aquarium standpoint, we have attempted to minimize the copper danger by revising our methods of feeding brine shrimp to the fishes. Whereas previously we usually kept numerous brine shrimp in the tanks with slow-feeding tropical marine species and the brine shrimp were present for most of the day, we now, during times of copper treatment of the water system, limit the brine shrimp to that which can be consumed during a 10-minute period. Multiple small feedings thus take the place of single massive feedings. We believe that this technique has been effective in reducing our previous mortality of small tropical marine fishes during copper treatment. There are still many unanswered questions, and as our studies continue we expect to give a more definitive report at a later date. ◀

CLUB NEWS

Manhattan Aquarium Society

The M.A.S. will hold their Second Annual Tropical Fish Show in the Auditorium, Community Building, 4th and Humboldt Streets, on October 1-3, 1965, according to A. D. Tory, President.

Join the S.F.A.S.

O'Quinn

(Continued from Page 320)

with the pH. That night, when I found another dead catfish in the tank, I removed all the rest and put them in a flavine treated tank, but the next morning everyone was dead. All the bettas looked fine. I watched them closely for several days and then dropped in another catfish. The next day it was dead. Still there was no trouble among the bettas, but I was cautious and moved them to another tank, leaving the "ailing" tank idle for several days. Then I put in one black mollie (surely if the water was bad it would get the mollie!) one guppy, one emperor tetra and three female bettas from a different group. Three or four days later the fishes all looked so good I decided to try another catfish. One day later it was dead!

Why could catfish live in every tank in the fishroom except this one? It didn't

make sense. I began a series of medications and, one by one, sacrificed four more of my little finny guinea pigs before I finally gave up in despair. Perhaps I should have given up sooner, and I would have if all the fishes had showed ill effects, but I wanted desperately to know "why?"

I emptied the tank and cleaned everything as carefully as I knew how with water as hot as the tank could stand. When it was finished and filled almost completely with old water it became, once again, a normal, healthy tank where catfish could live . . . and did!

What mystery was this? What lethal elements had lurked in this tank, singling out catfish only and leaving all the other fishes in good health? Was the trouble in the gravel and not in the water? It's logical. But will I ever really know?

There are many such occasions when we must wonder "why?" Perhaps if we knew all the answers, we'd lose some

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of the challenge. The more experienced of us have learned to work our way around these problems without too much distress, often avoiding disaster more by quick action and logical reasoning than by understanding. But when the novice comes knocking at our door asking "why?" — that's when we really wish we could solve the mysteries in the fish tank. ◀

Red Devils

(Continued from Page 326)

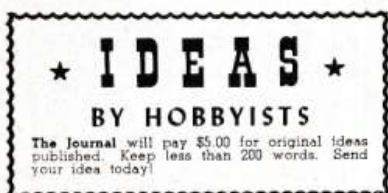
directly from it in order that no morsel of information be lost in the rearrangement of his words:

"With regard to the red cichlids—there are here two big lakes in Nicaragua, Lake Nicaragua which is about 110 miles in length and about 40 miles in width and is generally shallow which its maximal depth being about 70 meters. The other, Lake Managua is smaller, being about 40 miles long and 25 miles wide with a total depth of about 30 meters. Besides these two lakes there are many smaller ones that are called 'lagoons' in this area. The photograph on your work belongs probably to Masaya lagoon. Looking at the

photograph, you probably thought that the habitat of the 'red devils' was some kind of gloomy, terrible, jungle lake where it was necessary to go on safari. As a matter of fact, you can reach the lake shores by a nice paved road.

"Lake Masaya is the crater of an old volcano and it is five and one-half kilometers long but it is not round because a lava current goes down into the water on one side, thus giving the lake a horse-shoe shape. There is also Apoyo Lagoon of about six kilometers in diameter. This is round, also a volcanic crater, and the road goes only to the upper part of the crater. It is necessary to go down to this lagoon on foot. There also are some other much smaller lakes. In all of them there are red cichlids. The fish as pictured in your article are probably from Granada. These cichlids are common here and are used for food. You can buy them for a few cents dead or alive, as you prefer. These fish seem to love the places where the water is clean and there are big rocks and a sandy bottom. I never found them in shallow or muddy places. That is why the natives call them, besides *Mojarra colorado*, *Mojarra morrunda* ('morro' is the mouth of the animals in Spanish) and also *mojarra roquera* ('roca' in Spanish is 'big stone'). *Mojarra* comes from 'mojar,' meaning 'to wet.'

"I keep the red devils in a small pool. The stones around this pool are a nice collection of idols, perhaps the best in Central America. The pool is small, being only about 75 cms. deep. About two years ago, I put into this pool one dozen of the red devils. Most of these were with the big lips and were of a very deep red color. I put in also four big flower pots with dirt, sand and some water lilies. Very soon the plants were uprooted and were dying. I could then realize that there were two big red cichlids in each pot—one of them was inside and the other was keeping the rest of the fish away. I do not know how long it took



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For a long lasting baby fish food hard boil several eggs and then remove the egg yolks, crush the yolks into small bits, mix them with a little water and freeze them. The result is a superb fine fish food which can last for long periods in the freezer. When I want to feed my baby fry I just scrape off a little of the yolk into the aquarium. — *Kent Kurtz, Millbrae, California*

for the fish to hatch. It must have been just a few days because very soon there was a school of babies swimming around one of the parent fish.

"The parents put the babies again into the nest by taking them into their mouths. The care seems to be very effective because after one month I had to clean out the pool as it was by then quite greenish and there were approximately three hundred babies about one inch long, together with the dozen of the big ones. I kept about ninety in my room. Two months later I put all of them again back into the pool because they were growing there much faster. Later I gave some to some friends in Granada, some to the Steinhart Aquarium in San Francisco and some to the Columbus, Ohio, aquarium. Now there are about 40 left, and they have not bred yet. During this time, some got red when they were only approximately three inches long, some others much later and there are still some dark with black stripes. Now they are about eight inches long. I feed them ground meat. I do not think that this is the ideal food because even if they grow

well and are fat and healthy looking, they are yellow instead of red and the same thing happened in some months with this care if I put a tomato red one from the lake. It, too, fades out.

"Originally (Meek 1907) there were considered three species: *C. citrinellum*, *C. labriatum* and *C. erythracum*. I do think that *C. erythracum* is the red variety of *C. citrinellum*. We could not find any difference between red and dark with stripes specimens with regard to the scale and ray counts and the body proportions. The *C. labriatum* seems to be a different species, even if different only by the big lips and a more slender body. Among the big lip fish there are specimens, red, yellow, pink, pink and black and just plain black. Among the babies from red parents there are black ones.

"The water here is usually about 28°C and they did well in my pool when it was left uncleaned for three months and the water turned green. I did keep it green to see if they became a little more accustomed to people. Now they are timid but when I kept some in my room they used to eat oats from my hands. When some of the males age a bit, I think that they develop a big bump over their heads that seems to be of fatty origin."

As a final and recent bit to add to our total jig-saw puzzle of the red devils, Father Astorqui says, "There is now here a man from the U.S.A., I think from Miami, sending animals and especially the red cichlids to the States." So this is where our supply of "red devils" is obviously now hailing from, because this man is undoubtedly from "Animals Unlimited" of Miami, Florida, the only enterprise, as nearly as I can tell, who is bringing these fish in currently. As a matter of fact, one of the nicest letters that I got from this article came from Joe Hanna of this company, which started out, "We are sending you a selection of these red cichlids. . . ." ◀

Ucayali

(Continued from Page 317)

people, the humidity . . . all blended to form a picture of this jungle town that was like a storybook to us. It changed our outlook and our way of thinking, and I hope, made us better men for it. ◀

(To Be Continued)

CLUB NEWS

The Aquarium Society of Wichita

The A.S.W. will hold their 8th Annual Tropical Fish Show on September 16-19, 1965, at the Coca Cola Building, Harry Street and George Washington Blvd., Wichita, Kansas, according to Jimmy Toney, Chairman.



THE WORLD is full of misconceptions. Misconceptions that continue with the tenacity of the grip of firm fixed habits. One of these that threatens to continue to dog us until Hades is filmed over with a thin sheet of ice is that Englishmen are a stuffy lot, looking dourly down at their bobble and squeak while muttering sourly into the froth of their warm beer, "What a ruddy bother!"

Obviously "foreigners" figure that nothing even remotely gay and giddy could ever come out of a spot that seems to continually be shrouded in a shawl of fog. This is where, however, they need it the most and this is one of the spots where, from my own experience, they have it the most. Some of the funniest bits of comedy that I have ever seen have been at the London Palladium: some of my dampest tears from laughter have come from watching British star Peter Sellers continually lose out to the perversity of inanimate objects and some of the funni-

FINNY FOLKS

By Diane Schofield

est letters that I have ever received have had as their origin one James Kelly, editor of the "Monthly Journal of the Modern Guppy Breeder," the bulletin of The Fancy Guppy Ass'n. of Great Britain (mailing address 212 Ashton New Road, Beswick, Manchester II). Now I'll be the first to admit that "Monthly Journal of the Modern Guppy Breeder" as a title is going to wring no guffaws from anybody (or is it), anyway you win some and lose some.

When I wrote to Jim asking him for a bit more background on himself, he wrote back, "I like the title 'Finny Folk' but you lay yourself wide open to it being

Photo: Jim Kelly, Paul Hahnel and Constance Kelly on occasion of Mr. Hahnel's last trip to England. Photo by Jim Kelly.

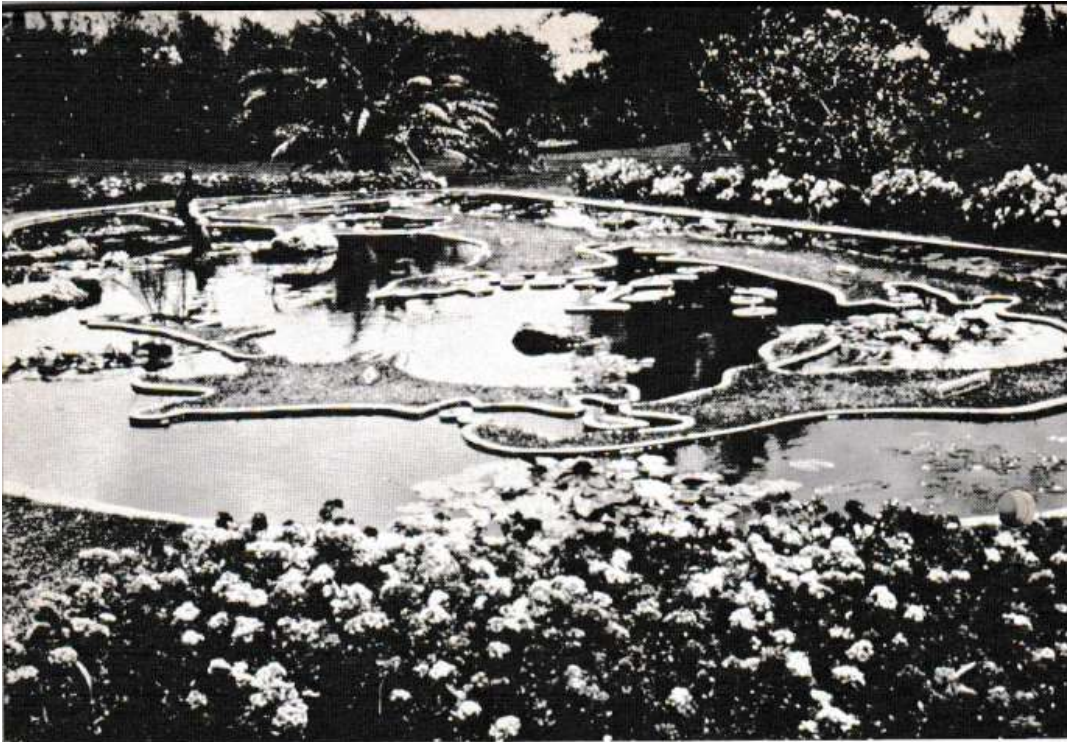
changed to 'FUNNY Folk' if you print anything about me." He didn't mean it in the same way that I do . . . because Jim Kelly is a very, very cleverly funny man. Witness the opening sentence of the resume on himself, "My Father, a bookmaker (the horsey kind) was disappointed. He wanted a girl because the odds were better." Incidentally, a bookmaker in England is very "legit" and holds a high place. As a matter of fact, often above the sometimes posh offices that they rent is the legend, "Turf Accountant," scrolled in lovely golden letters.

Come to think of it, I really can't improve on Jim's own account of himself, so let's just go along with him in his unexpurgated version, "Much to the relief of Scotsmen everywhere I left those 'Bonny Banks' some five years later and accompanied by my parents, headed for Manchester. My Pa had exchanged the Turf for a chain of grocery stores and my silver spoon became a cash register. The next event in my life upset the Headmaster at a private school at Blackpool when he found I would insist on bringing the seashore into my dormitory. I became so good at chalking on the walls that my parents decided I would make a good journalist and I found myself on leaving school, and became a copy boy with a large newspaper. The war didn't allow me to learn too much about newspapers and I found myself with a Fighter Squadron in the R.A.F. It was here, sharing the drome with an American Bomber Squadron that I met my first citizens of the U.S.A. and having mastered the jargon, learned that 'braces' were suspenders, I started friendships that were to continue to the present. For the first few weeks I actually thought that Americans lived on hot dogs and always had ice cream for dessert!" From this moment on, Jim Kelly

Photos: (Top) James McM. Use of the British Ichthyological Society, Glasgow, Scotland. (Middle) Jim Kelly in his laboratory. (Bottom) Mr. Kelly in his aquarium shop. Incidentally, what appears to be rockwork is really linoleum. Two lower photos, credit Jim Kelly.

JULY, 1965





obviously became "contaminated" with Americans, because recently he was accused of being "pro-American" by some members of his club. He would be the last to deny this, I'm sure, because quite a number of Stateside editors of aquarium bulletins, shackled to their typewriters by members of their boards who are fond of utilizing both arm and leg irons, have been beside themselves with delight over receiving articles contributed by Jim.

Not only does Jim Kelly toil at the keyboard of his own typewriter grinding out the "Monthly Journal of the Modern Guppy Breeder" but Jim and Constance Kelly arrived one day at that point where the road branches out and they decided that their hobby had grown to such an extent that they would turn professional and open their own aquarium store in Manchester. Jim relates, "Working *thirty* hours a day we had everything ready for the opening. We opened the shop door but instead of customers coming in,

I was carried out seriously ill, with the prospect of a long hospitalization in front of me."

The ensuing twelve months weren't wasted. Jim made use of his enforced rest to contact fishkeepers all over the world and guppy breeders in particular. Constance and Jim were members of The Federation of Guppy Breeders' Societies but there were no Sections in the North of Great Britain so plans were made for two more . . . one based in Manchester and the other at Bradford, Yorkshire. Jim continues, "My mail grew to thirty, forty letters per week, and it was my proud boast that I answered every one personally. I found that despite colour, creed or politics, we all were facing the same problems, contrary to popular belief. We had a lot in common."

Once back in a vertical position, Jim reopened his shop and the Manchester

Photo: Bermuda "fishpond" showing map of Bermuda in the middle. Photo by Diane Schofield.

Section of the Federation of Guppy Breeders' Societies flourished. The first all-guppy stand was held at the British Aquarist Festival. But then came a breakaway. Jim relates, "More and more fishkeepers were changing to the larger, more colourful guppies emanating mainly from the States. Paul Hahnel was becoming a household word. The F.G.B.S. had standards in plenty but none for the broadtails and despite requests we couldn't get outlines drawn up. This, plus minor financial reasons, forced a decision. We broke away and reformed as The Fancy Guppy Association. Our aims were not to rival the other guppy society but to get together and sort out our problems." Jim was summarily elected the Founder Chairman of this organization, a position which he fills to this day, with Constance holding the purse strings as treasurer. In their local aquarium group, The Belle Vue Manchester Aquarium Society, Jim and Constance switch around a bit . . . he is the treasurer and she, the secretary.

A character indication of Jim Kelly as



Photos: Ventral view of Christfish skull, showing "crucifix." Photo by Diane Schofield.
 (Bottom) Jim Kelly in the corner of his aquarium shop showing a few of the awards he and Mrs. Kelly have won for their guppies.
 Photo credit: Jim Kelly.



shown in his pet dislikes and favorite likes: Likes — all guppy breeders, visiting fish shows and talking aquatics. Pet dislikes: Humbug, the phrase "can't be done," and trophies that want polishing. Jim should know — Jim and Constance Kelly have won over 400 show awards, which add up to a heck of a lot of trophies that must "want polishing" with monotonous frequency.

• • • •

Still clinging tenaciously to the Land of Yorkshire pudding, we find a very individualistic society. As a matter of fact, one might even say that the British Ichthyological Society is completely unique.

Of course, as its name implies, it does have to do with fish, but this does not mean just fish in a tank. It also means fish on a line and fish seen through a diving mask. You see, one of the excerpts (under the heading "Aims") from their

constitution reads, "To provide for Ichthyologists, Aquarists and Anglers, a means of communication with other persons interested in the same subject and to interest Anglers, Aquarists and Fishermen in the study of Ichthyology."

The British Ichthyological Society was founded in 1961 and started out with its

Editor's Note: Clayton B. Howk is still Secretary-Treasurer of TIFAS, according to Glenn Tomlin, Vice President. All photos of the Milwaukee Aquarium Society in Finny Folks were taken by the M.A.S.

main concern, the angler and the scientist. However, in October of that year, they broadened their scope to include aquarists. And in 1964, they widened it still further to include anyone who is at all interested in fishes, in particular skin-divers. This seems like a regular shotgun blast to scatter information to everybody who even so much as has sat down to a fish dinner.

.....

☆ **PROGRAMS** ☆

.....

Readers and societies are invited to submit ideas to The Journal for Aquarium Society meeting programs, includ-

ing lectures, slides, films, demonstrations, etc. There is no charge for these listings.

For information regarding the following TIFAS society programs, write to Mrs. Carol Schultz, R. R. 2, West Montrose, Ontario, Canada.

DEVELOPMENT OF THE ZEBRA EGG Time lapse photography of the development of the Zebra Egg, 16 mm black and white film and recording (25 minutes).

BREEDING OF THE ANGEL FISH Shows the methods of raising Angels, both natural and artificial. 8 mm color film and recording (20 minutes).

THE AQUARIUMS Showing the birth of livebearers and egglayers, breeding habits of Cichlids and bubble-nest builders, betta fighting, etc. 16 mm color film (25 minutes).

THE SUNFISH The spawning of the Sunfish whose habits and methods are much the same as those of the Cichlids. 16 mm black and white sound film (11 minutes).

SALT WATER FISH SETS No. 1, No. 2 and No. 3 These discussions on salt water fish are the best yet provided to those interested in this stage of the hobby. The photography is outstandingly good and certainly the brilliantly colored fish will take your breath away. 35 mm color slides and recording (36 slides in each set).

SHOW AQUARIUMS. The show slides of the Southern Tier Aquarium Society of Binghamton, New York. The lecture material accompanying this

set demonstrates the proper method to use in photographing aquarium and fish. 35 mm color slides and lecture material (35 slides).

LIFE IN A POND The slides provide an excellent program and are very instructive. 35 mm black and white slides and lecture material (40 slides).

WATER PLANTS The narration is done to provide maximum information. Shows many of the plant life growing along and in streams and ponds. Delves into the stem and root structure and describes types of reproduction. 35 mm black and white slides and lecture material (51 slides).

HYDRA AND OBLIA Describes all structures and methods of reproduction. A most excellent study. 35 mm black and white slides and lecture material (38 slides).

GREAT BARRIER REEF The accompanying narration and the slides provide a very complete discussion of the Great Barrier Reef which abound in marine life. 35 mm color slides and lecture material (27 slides).

SEASHORE PLANTS AND ANIMALS The slides and the printed narration provide a very complete story of the plant and animal life found on the seashore. 35 mm color slides and lecture material (25 slides).

LIFE IN PONDS Showing the different forms of life found in the different areas of a pond. 35 mm color slides and lecture material (33 slides).

Besides publishing books and articles, certain members of the British Ichthyological Society are working on a project which will have as its end result a correspondence course. This course will be of very high standards and will be designed to give a course of study in Ichthyology to British University First Degree level. This should be ready for distribution in June, providing, of course, that subscriptions come in as planned and there are funds available.

In July and August, this organization is planning still another first. This will be in the form of a scientific expedition to Lough Rae in Eire. And yet a third undertaking is in the offing . . . a book on scale reading, aimed at the serious amateur, which is being written by one of their own members.

The British Ichthyological Society puts out a Journal, edited by James McM. Ure and David Park. Subscription rates are one dollar per year for subscribers from the United States. This can be sent to Mr. Ure, who is also, incidentally, the Secretary-General - 10, Whittliemuir Avenue, Muirend, Glasgow, Scotland 4. Where else can you get a bulletin that has articles that run the gamut, as a recent one did, from "Trout Season Opens in America" to "Mercurachrome—a Dangerous Remedy"?

• • • •

Leaping from John Bull's domain, and wading a circuitous course across the Atlantic, we come to one of his little colonies, Bermuda. In Bermuda there is one man who, if other people could be termed interior decorators, he could well be termed an "exterior" decorator. This man is one of the prominent merchants in this fish-hook shaped island and through the profits accrued through his owning of several of the leading department stores there, he has been able to build a very large home. Surrounding this mansion are magnificently landscaped
(Continued on Page 352)



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The crossbanded dwarf cichlid —
a pretty new specie for hobbyists

Apistogramma kleei

*(Translated from the German by
Albert J. Klee)*

ROUGHLY 30 years ago, about 1932, Arthur Rachow (Hamburg) and Frederick H. Stoye (La Jolla, California), in accordance with what was known of the fishes of that time, reported in their works that the genus *Apistogramma* contained some dozen species. Frequent new importations of this justifiably highly regarded South American dwarf cichlid genus, however, has made this estimate obsolete. Although it might have been true enough at that time, recently things have altered basically and the number of known species has more than doubled. Further, the possibility must not be excluded that

Herman Meinken

Bremen, Germany

in coming years, additional attractive new importations of this genus from the middle and upper Amazon, and its tributaries, will be made. Additional beautiful new species may be expected from Peru especially. Surely Harold Schultz, in his travels to the affluent streams of the upper Rio Madeira, may be expected to bring back this or that new dwarf cichlid. Those who relish dwarf cichlids can, in the ensuing years, count on many pleasant surprises!

One such pretty new importation, un-
(Continued on Page 353)

OTHER THAN the handful of us aquarists who are privileged to live either near or directly by the sea, only comparatively few among all the aquarists in the continental United States are afford-

Eric Friese

Seattle, Washington

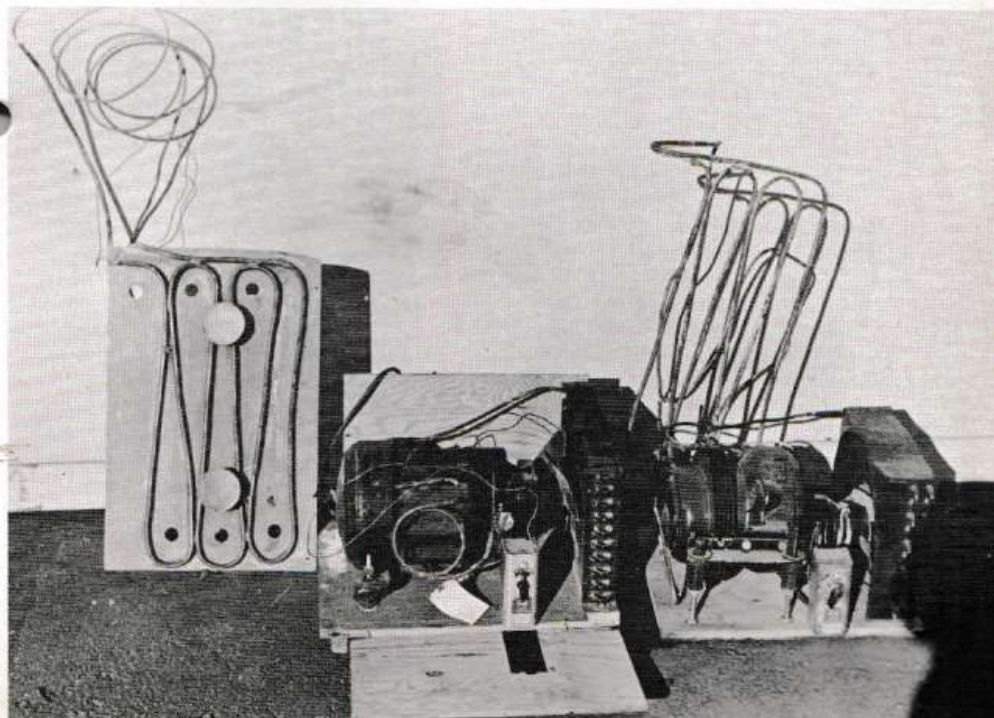
A vitally important factor in keeping coldwater marine specimens healthy

Refrigerate Your Tank

ed the unique opportunity of an occasional visit to the fascinating sea shore. On those rare visits to the tide flats, rocky shores or ocean beaches, many an aquarist has wondered if he should take home some of those interesting starfish, crabs, mussels, clams, ghostshrimp, attractive little sculpins, blennies, young sea perch, pipefish or stickleback. Supposing one managed to get most of these creatures home without too many losses, how can they be kept alive for any length of time? Of course, water is available any place, and the local pet shop is

likely to have some marine salts for sale, but one of the vitally important factors for keeping coldwater marine specimens alive is temperature. Most of us on the west coast have to deal with specimens from a marine environment with a more or less constant temperature of 10 to 15 degrees centigrade, and this means that during most of the year the tank with our precious marine animals must be kept cold. A direct pipe line system for constant water circulation, as utilized by

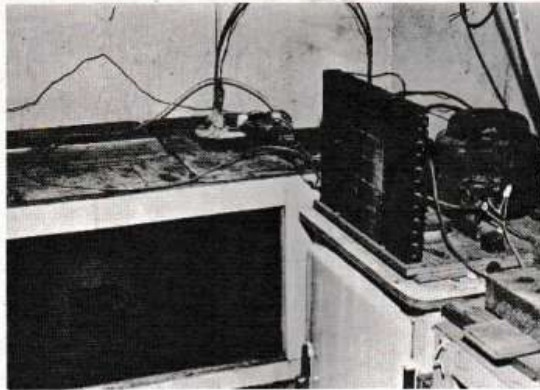
Figure 1: Two refrigeration units with separate cooling coils. Notice the unit on the left has the coils mounted on a plastic board for easier installation. All photos by author.



many public aquariums along the coast, is of course out of the question; consequently some other means must be used. The following description of a small refrigerated aquarium system does not give any consideration to the scientific principles of water management for marine aquaria. It is intended to point out how to refrigerate the small aquarium and still be within the financial means of the average aquarist.

Refrigerated aquariums featuring native marine life for educational purposes

devices such as water fountains, water coolers, soda pop dispenser or refrigerated display cases can be used. Some of these devices — household refrigerators and certain types of water coolers—can be used as they are, others may have to be dismantled and the cooling units (motor, compressor, etc.) taken out for separate use. Since most aquarists are experienced do-it-yourself men, this should not pose a problem; however, if difficulties should arise the nearest refrigeration repair shop will most likely



are in use by many local schools here in the Puget Sound area. A number of restaurants use similar systems for very attractive and unusual displays. In addition, small refrigerated aquarium systems are utilized by many aquarists in this area with good success. The highly sensitive octopus, for instance, has been kept in systems for periods up to one year, during which time it grew considerably. Several species of tide pool fishes have been kept for years, only to succumb finally due to a technical failure of the refrigeration unit. The cheapest way to obtain one of these refrigeration units is from your local junk yard. These places have normally a stockpile of old, used refrigerators for sale in the price range from 15 to 25 dollars, sometimes even cheaper. Other mechanical cooling

furnish expert advise at a nominal charge. All of the above mentioned cooling units have built in thermostats. One must make sure that these are also in good working condition. These thermostats are just as important as the ones used in our tropical fish tanks.

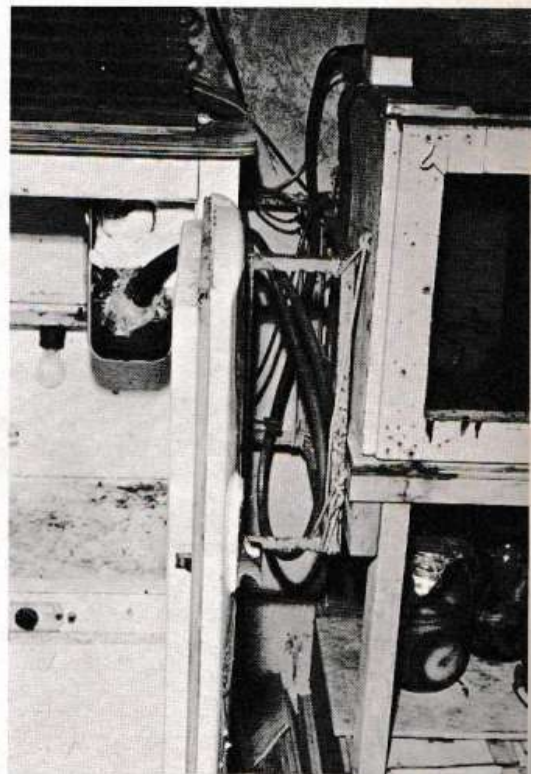
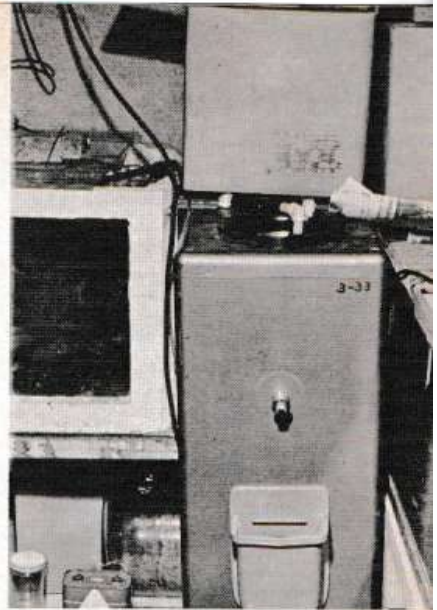
There are two basic methods to refrigerate an aquarium. If a separate, independent cooling unit with copper cooling coils is used (Figure 1) the water may be cooled directly. The coils can be carefully bent into almost any shape to fit individual needs, or they can be mounted on a plastic board. In any event, these cooling coils have to be protected against the saltwater by being enclosed in a watertight container, preferably

Figure 4: A dismantled Coca-Cola machine cooling unit serves a 70-gallon aquarium.

made of some kind of plastic material. If the coils are mounted on a board, this whole board can be fitted with large suction cups and then be placed inside a large, sturdy plastic bag. Plastic bags of this size are normally obtainable from Tropical fish stores. The discarded plastic bags used for tropical fish shipments are usually of the right size. After the coils have been adequately covered the entire board can be submerged in the tank, and with the suction cups pressed against either the back or the sides. During this procedure utmost care must be taken not to damage the main connection to the cooling unit. Normally the connecting coil is long enough, thus it can be carefully bent so that the entire unit can be hidden underneath the aquarium stand, or disguised in some other manner. This is definitely the easiest and the neatest looking way to maintain a cold saltwater aquarium.

If such a handy separate cooling unit is not available a household refrigerator, water cooler or similar apparatus can be used without modification. In this case the water to be refrigerated has to be transported to the cooling device, preferably through plastic tubing as used in our large power filters. This tubing can be purchased in most pet shops. The water level of the aquarium should be higher than the cooling unit, so that gravity flow can be employed to get the water from the tank to the cooler. A collecting container, again made out of plastic or a similar material, is mounted inside the freezing compartment of a household refrigerator (Figure 2) or inside a water cooler (Figure 3). Here the water is cooled to the appropriate temperature, and through another plastic hose with air pressure from a standard aquarium pump the water is returned to the tank. Many technical modifications can be

Figure 3: (Top) A water cooler is used for refrigeration. It employs the same principles as illustrated in Figure 2. **Figure 2:** (Bottom) A household refrigerator is used for cooling the water. A plastic bag inside the freezing compartment collects the water for refrigeration. An air pump returns the cooled water to the tank.



made on this particular system, depending upon the individual ingenuity, the material available and the needs to be served. This second method is admittedly somewhat awkward, and there is not too much that can be done to make it more presentable for an aquarium in a living room. It also has the disadvantage of rather inaccurate temperature control. Only the water coming directly into the cooling area is thermostatically controlled. It might be advisable to purchase a separate, industrial type thermostat, which can be directly connected to the tank for better temperature control.

After the two methods have been considered, and a decision made, the next important step is to choose the right size tank to match the cooling unit employed.

This depends to some extent on the local climatic conditions, but the following very basic rules can be applied in selecting the tank. The average household refrigerator cooling unit has a 1/8 or 1/6 horsepower motor. This can handle normally an aquarium up to 40 gallons. Some units have motors as small as 1/12 horsepower and a refrigeration capacity accordingly smaller. Some water coolers with 1/6 horsepower motors operate with a relatively small fan inside the unit, thus restricting the airflow and permitting only a 30 gallon refrigeration capacity for our purposes. A large 1/4 horsepower motor from an outdated Coca-Cola machine, for instance, can refrigerate tanks up to about 70 gallons (Figure 4).

The above mentioned data and the

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WANTED

Elassoma evergladei—Please send information to: Alfred J. Stanco, #3 Brookside Road, South Orange, New Jersey.

general rules implied are of course far from inflexible. Also they are somewhat inconsistent with modern refrigeration methods. As I said earlier, the equipment suggested here is aged and outdated. Due to its "old age" and determination, it has become useless for the original purpose. Quite frequently two refrigerators must be dismantled to obtain one usable unit, or spare parts must be taken out of entirely different machines.

After the technical problems have been solved the tank can be set up. Water should preferably be obtained directly from the sea; however, where this is impossible artificial seawater can be made with commercially available sea salts. In my opinion, the outstanding product in this field appears to be "Instant Ocean," distributed by Aquarium Systems, Inc. in Wickliffe, Ohio. This is a synthetic sea salt, which has been used with great success at the Cleveland Aquarium. To sustain marine life at its highest level a complete or at least partial water change should be made frequently.

Since very few people deal commercially in cold water marine specimens most aquarists are their own collectors. Here is the excuse for an annual trip to the coast. Once at the sea the planned collecting activities should be coordinated with the tide table. The most profitable collecting is at low tide, with most efforts concentrated in tidepools. Everything that lives in these small puddles left behind by the receding tide waters is constantly exposed to climatic extremes. From cold ocean waters, the exposed pools warm up by the sun during the day. Also the salt water is often diluted to an extreme degree by run off fresh water from shore or by simple addition of rain, only to be suddenly restored to its original condition with the next incoming tide. These changes are day after day, and year after year. Species that can endure such drastic environmental changes will understandably make the best inhabitants for the aquarium.

JULY, 1965

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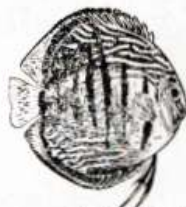


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In conclusion I would like to express my gratitude to Mr. Wesley Spore, Edmonds, Wash., for his experienced advice on the subject matter, and his willingness to furnish a considerable amount of data obtained during his years of work with small refrigerated aquarium systems. Photographs No. 2 through 4 are taken in his most fascinating fish-room. ◀

Schofield

(Continued from Page 345)

grounds. On a part of these grounds, he has placed a large outdoor pool. The most prominent feature of this pool is a complete map of the Bermuda islands in the center of it! Each island is outlined with concrete and grass has been planted within this outline. A thing like this is too spectacular to be kept all to one's self, so he invites tourists to enjoy his little goldfish pond with him. They can even step onto the map to have their pictures taken . . . with their right foot planted firmly in the town of Hamilton and their left one smack on the city of St. George.

.

Still keeping to British, to the extent that Trinidad is in the British West Indies, we next move down to Trinidad. Here in the waters of this green velvet island swims a strange and wondrous fish. There is nothing too special from the exterior view of this fish that would set it aside from many others. It is not until it is dead and one examines the interior of its skull that the "wondrous" portion becomes clearly evident.

What one sees here has given this fish its name — the Christfish. If one looks just a short distance from the place where the last vertebra ends in this fish, one can see a separate and distinct crucifix! There is the head of Christ, here the outstretched arms. The native Trinidadians catch these fish, add only a touch of paint here and there to further point up the

similarity . . . the brown of the hair and beard, the red of the nail wounds and the letters at the bottom, "INRI". The result is a fish-made crucifix that looks as if it had been carved out of the finest ivory.

[Editor's note: The fish described here is a catfish belonging to the common marine catfish family Ariidae. The ventral or bottom side of the skull of members of this family does resemble a crucifix, a fact long recognized by Christians in many areas where these fishes occur. These skulls, plus part of the Weberian apparatus or first few modified vertebrae are sold as curios in many countries. ◀

Meinken

(Continued from Page 346)

fortunately sans exact locality data, appeared on the American scene in the spring of the previous year. There were not many of them but they did come into the hands of well-known breeders. My old friend, Albert J. Klee, sent me a few imported specimens for identification and they proved to be new to science. It was natural that I should name this engaging newcomer in honor of him.

On the basis of pure external considerations, members of the genus *Apistogramma* without exception are attractively marked. However, they are in no way uniform in structure. We have in the genus both giants and dwarfs (relatively speaking), species with rounded tail fins and shortened fins in general, to those with well-developed ventral, dorsal and anal fins and tail fins drawn out at their tips. This last-named group, in general known as the "trifasciatus-group," is the one to which *Apistogramma kleei* belongs. It is, therefore, one of the "giants" of the genus and with its 2½ inch total length, is next to *Apistogramma wickleri* (Meinken 1960) and the second largest known species. How-

ever, it is well to note that the female is rather small, not quite reaching 2 inches in total length. Next to this size difference, males and females of *Apistogramma kleei* differ considerably in coloration. This is, with regard to related South American cichlids, by no means the rule. There is a whole series of fishes scientifically close to *Apistogramma* (e.g., *Geophagus*, *Cichlasoma*, *Aequidens*, etc.) in which males and females are difficult to distinguish on the basis of coloration (as also with *Pterophyllum* and *Symphysodon*). As is likewise the experience with African killifishes (*Aphyosemion*, *Nothobranchius*, etc.), at least out of breeding season the female of *A. kleei* differs considerably in overall appearance from that of the male. This tends to make the male all the more attractive by comparison.

The basic coloration of the body of the male is a pleasing grayish-olive, the sides a brassy color or with a greenish glaze, and each scale displays a black-

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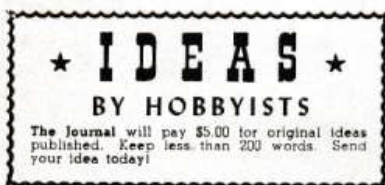
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ish border. Towards the belly, these colors become only a little lighter. Two strong, according to the condition and deportment of the fish, more or less conspicuous black longitudinal stripes run from the eye, over the gill cover and the side, down to the end of the tail root or the base of the tail fin. The upper band is somewhat broader, and also stronger in color than the lower band, and ends shortly before the beginning of the tail fin in a small, deep-black, erect, brightly bordered spot. The lower band may disappear completely along the side or else be noted only as a row of black spots. Should the male feel like "Cock o' the Rock," he carries on his upper band in the middle of the body at about the 8th to 11th scale, a deep-black, almost four-cornered spot. This, it appears to me,



Thermostat Cleaner

After a few seasons of use the contacts on the thermostat of aquarium heaters often become slightly corroded and do not operate properly. Since this can result in either cooked fish or chilled fish, a simple solution is in order. Stores which sell products for use in the repair of radio and TV have available an item known as tuner cleaner which comes in aerosol cans and is used by television repairmen to spray contact points which are inaccessible. If the thermostat is removed from its tube, two or three blasts from this tuner spray will clean the most stubborn contacts and will often result in rejuvenating a unit thought to be useless. After cleaning, the thermostat should be reset and tested before using with fishes. — *Braz Walter, Waco, Texas*

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is typical of members of the "*trifasciatus*-group." A narrow, black, slightly bowed to the rear and very striking band, typical of all *Apistogramma* species known, runs through the eye to the lower border of the gill cover. There is a less showy band from the forward border of the eye to the mouth. The thick lips are bluish-black; the iris of the eye, apart from a gold ring around the pupil, is bluish-black to black. A band of two or three purple-red rows of spots leads from the eye up to the ridge of the back, along the base of the dorsal fin and terminates in the upper portion of the tail fin. These rows of spots stand out strikingly from the shining, olive-green scales of the back.

The most magnificent ornament of the male is, however, his finnage. In the large dorsal fin, the first 4 to 8 spines are quite prolonged and stick out far from the skin of the fin. The soft portion of the dorsal is, towards the rear, drawn out into a point. In adult specimens, this tip extends out over the middle portion of the tail fin. The base of the dorsal, and its first two spines, is deep-black. Thereafter follows a beautiful, strong yellow-gold sheen or an ochre-yellow zone. Above this, the skin between the spines and the rays, in gorgeous contrast to the gold-yellow described, is a beautiful wine-red. The spines sticking up from this wine-red border are ochre-yellow, and the long, extended tip of the soft portion is a strong wine-red to dark-red. The middle portion of the anal fin is also gold-yellow. Wine-red lines in the direction

CLUB NEWS

Aquarium Hobby Club of Indianapolis

The A.H.C.I. will hold their Annual Tropical Fish Show for 1965 at St. Lawrence Church, Road 100 and 46th Street, Indianapolis on Sept. 11 and 12, according to R. H. Echolds, Chairman.

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of the rays of the anal, and a wine-red border, contrast nicely with the gold-yellow coloration. The large, extended lyretail of the caudal is ochre-yellow at the base and greenish-yellow to greenish above. Wine-red lines in the direction of the finrays are additional attractions. However, over the greenish portion of this fin we find three or four short, conspicuous wine-red crossbands. They are typical for this species and distinguish *Apistogramma kleei* from all other *Apistogramma* species. The long, pointed ventrals are a pretty gold-yellow; the first two rays are wine-red. The only colorless fins, in fact, are the pectorals.

The female is much darker than her colorful mate. Her base color is a gloomy or blackish gray-olive. The belly is somewhat lighter and under the pectorals we find a sulfur-yellow area. As in the male, two black, longitudinal bands run from the border of the eye to either the end of the tail root or to

the tail fin itself. The female also displays the four-cornered, deep black spot on the 8th to 11th scale on the upper band. However, below these longitudinal bands, on the belly, appears 2 or 3 deep-black rows of spots, as in *Apistogramma borelli*. On the sides and the tail root are 5 or 6 more or less notably black crossbands that reach roughly from back to ventrum. The last
(Continued on Page 357)

PRODUCT NEWS

New Danner Filter-Pump

EUGENE DANNER of Brooklyn, New York, well-known manufacturer of quality aquarium products, has just added a unique new product to their line. The product, Supreme Poolmaster, is the only combination filter and pump on the mar-



ket. It both filters and circulates water in garden pools.

Poolmaster is a pump and filter combined that is designed for use in all kinds of outdoor and indoor pools, including ponds, goldfish pools, and fresh water minnow tanks.

Poolmaster operates completely submerged at the bottom of the pool. It is compact and can easily be moved anywhere in the pool. It can also be used to create a waterfall or fountain.

Eugene Danner Manufacturing also produces a complete line of piston pumps, aquarium filters, aquarium heaters, air valves and aquarium accessories under the name Supreme. ◀

CLUB NEWS

San Francisco Aquarium Society, Inc.

"The Grunion Story," a color film depicting the amazing habits of the grunion — the only fish in the world that spawns on land — will be shown at the July 1st meeting of the S.F.A.S., according to Frank Tufo, President.

Jack Lockhoff, Best of Show winner at the recent S.F.A.S. Fish Show, will give a demonstration on how to make backgrounds similar to the one used in his winning tank.

Fish of the Month for July: (1) Male Betta Splendens, (2) Corydoras, and (3) Livebearers—Junior Members only (under 18), according to Charles Bange, Chairman.

Slides of the highly successful Picnic Outing at Bolinas will also be shown, Fred Jenne, Picnic Chairman, announced. ◀

**From: Jerry Currier & Marty Smith
San Francisco, California**

We would be interested in any information you or your readers may have on the spawning habits and water conditions required for the spawning of the "redtailed shark," *Labeo bicolor*. We have read many accounts of successful breeding of this fish, but all of these accounts state that they have heard of someone breeding *Labeo bicolor* and give no details. In "Exotic Tropical Fishes" there is an illustration of an apparent cousin to *bicolor*, that is *Labeo ery-*

requirements may be quite different and tolerances to aquarium conditions narrow.

**From: Chris Kirwan
Springfield, Virginia**

First of all I would like to comment upon "Brine Shrimp Hatcher" by Jerry Currier. It was a good article and very interesting. I read it with great interest. One thing I would like to mention, however, is that a well-washed clorox jug would work as well, and you would not need to "burn" it, rather you could just

Letters to the Journal

thrusus. The text under the illustration mentions "spawning accounts" for *L. erythrurus* but gives no details. Perhaps a description of the spawning habits of *L. erythrurus* would give a clue to *L. bicolor*. Another discrepancy is noted in comparing accounts of the water conditions given in Sterba's "Fresh Water Fishes of the World" which states, soft, slightly peaty water and "Exotic Tropical Fishes" which gives a recommendation of slightly alkaline, 10 DH. Interesting but hardly conclusive. We have found that *L. bicolor* seems to do well in either type of water. Not that this situation is unusual. Every author/authority arrives at his interpretation of the optimum water conditions by his experience. Unfortunately, these are quite often contrary to the experiences of another person.

REPLY: *As recently noted in this column, we are as ignorant as you concerning the spawning of this fish and we still have not seen any first hand account of spawning a labeo. However, aquarium literature is becoming quite "vast" these days and we could easily have missed something. Our experience is as yours, the species of Labeo that we have kept are quite adaptable. However, breeding*

cut it. I have a question. It seems as if every fish article has the same pictures. If one writes an article for publication, may he use someone else's photographs without permission?

REPLY: *Probably about 80 to 90 percent of the pictures we publish of fishes and other subjects are new. We occasionally republish an old photograph that we have used before, especially if it is better than those submitted (if any) with the article. You should not use another's photo for publication without permission of the owner of the photo or the copyright owner. Photos used by the "Journal" are ordinarily reusable by us because we have purchased them along with the copyright, unless there is a "one time use only" agreement.*

**From: Thomas Bensko
Santa Rosa, California**

I recently read in a fish manual that a solution of one-quarter teaspoon potassium permanganate per 200 gallons of water would rid an outdoor pool of algae. The article also stated this was not harmful to the fish so therefore it was not necessary to remove them. The pool I have is made of concrete, holds 500 gallons and is 18 inches deep. Would

I increase the proportions to three-quarters teaspoon for a pond the size that I have and how often would the treatment be necessary? I am planning to enlarge the pond and add a waterfall and lily pool.

REPLY: Potassium permanganate at the correct concentration will kill algae and not fishes. It will also kill some aquatic plants so you must be careful in its use. I would try one-half teaspoon first. How often you must use this treatment depends on many factors. The amount of sunlight the pool receives, the kind and numbers of fish present, the kind of algae that are present and the kind and number of aquatic plants present. Lilies for example are great because they shade a good portion of the pool and help prevent a growth of algae. Waterfalls are a lot of fun and can be very beautiful and interesting but remember that moving water tends to retard the growth of waterlilies. ◀

Meinken

(Continued from Page 355)

such band is actually on the tail root, the fourth below the end of the dorsal, and the first under the beginning of the dorsal fin. The development of her fins is far inferior to that of the male. The forward dorsal spines protrude slightly or not at all above the skin of the fin. The soft part of the fin is, like that of the anal, only slightly pointed and without elongation. Characteristic for the female of *Apistogramma kleei* is the slanting and irregular shape of the tail fin. The dorsal fin is, as in the male, deep black at its base, followed by a brighter, light-yellow zone. The upper border is light, blackish-red. However, the first 3 spines are black as in the male. The soft part of the fin is smoke-gray. The tail fin is grayish-olive. Another characteristic in addition to the shape of the tail is the slight hint of wine-red lines in the direction of the fin

rays (as found in the male also), a modest adornment of the female. However, the female completely lacks the prominent, four crossbands. In the but slightly elongated ventral fins, the first few rays are jet-black. The remaining portion of this fin is yellowish. On the head we find the typical slanted band that runs from the lower border of the eye to the lower corner of the gill cover. On the basis of these characteristics . . . the wine-red lines running in the direction of the rays in the tail, and the irregular shape of the tail fin and the 5 to 6 crossbands on the sides and tail root . . . we can easily differentiate the females of *Apistogramma kleei* from other *Apistogramma* females.

I have not observed the rearing of the young in this beautiful species. I am convinced, however, that the female is much more colorful during spawning time. From others in the genus it is known that at the time of spawning, most female apistogrammas display a

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sulphur-yellow to gold-yellow coloration on sides and belly, along with an intensification of the black longitudinal bands and the black of the ventral fins. But in any event, when this newly imported species has been bred in sufficient commercial quantities, there will be no shortage of buyers!

(The systematic description of this species and a detailed examination appeared in *DATZ*, October 1965, pgs. 293-297.)

TRANSLATOR'S NOTE: Fortunately for aquarists, additional importations of *A. kleei* have been made and the fish is now being bred in reasonable quantities. I have had no difficulty in breeding this fish (nor have noted aquarists such as John Gonzales of Philadelphia, James Thomerson of New Orleans and Richard Stratton of San Diego). My last spawning was accomplished using a 5-gallon tank, bare bottom. The eggs were laid in a clutch the size of a quarter, about 1 inch from the bottom of the tank on a piece of slate leaned against one end of the tank. The eggs were actually laid on the underside of the slate. They hatched in four days at 74° F and were free-swimming two days later. Mr. Meinken is correct in his surmise as the female definitely intensifies in both yellow and black coloration during spawning. Incidentally, for some time now, aquarists have been referring to *A. kleei* (for want of the scientific name), as a "yellow, lyretail version of *Apistogramma agassizi*." Superficially, this is good description but scientifically, these two species are quite distinct. ◀

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Fish Dates

Even the new hobbyist soon finds the need for keeping records such as the date water was changed in a tank, the birth dates of fry, and the dates for adding or subtracting certain fish, plants, etc. from a tank. What is the easiest way of doing this? Probably the easiest way, but not the most permanent is the use of a grease pencil on the tank itself. A black grease pencil, costing about 20c seems best. And it will not smear. To erase it, simply apply lighter fluid or other solvent to a rag, and wipe the grease marking from the tank. Using a grease pencil, one corner of a tank will always contain at a glance the information you need to know about the fish contained in the tank. — *Fred Howard, Ortonville, Michigan*

★ IDEAS ★

BY HOBBYISTS

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Styrofoam Covers

I have spent many years and many dollars in search of aquarium tops that would fit my irregularly shaped aquaria. Not being a good metal worker and needing cut out for lights, filter and heater, etc., I wanted an easily shaped, light material. I find that the styrofoam material used as insulation in shipping wholesale fish to my dealer fits the bill. It can easily be shaped with a razor or penknife and is light, durable and extremely inexpensive. My tanks covered with this material also seem to hold the water temperature more evenly.—*Thomas G. Basler, Atlanta, Georgia*

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