August, 1968

tropical fish hobbyist

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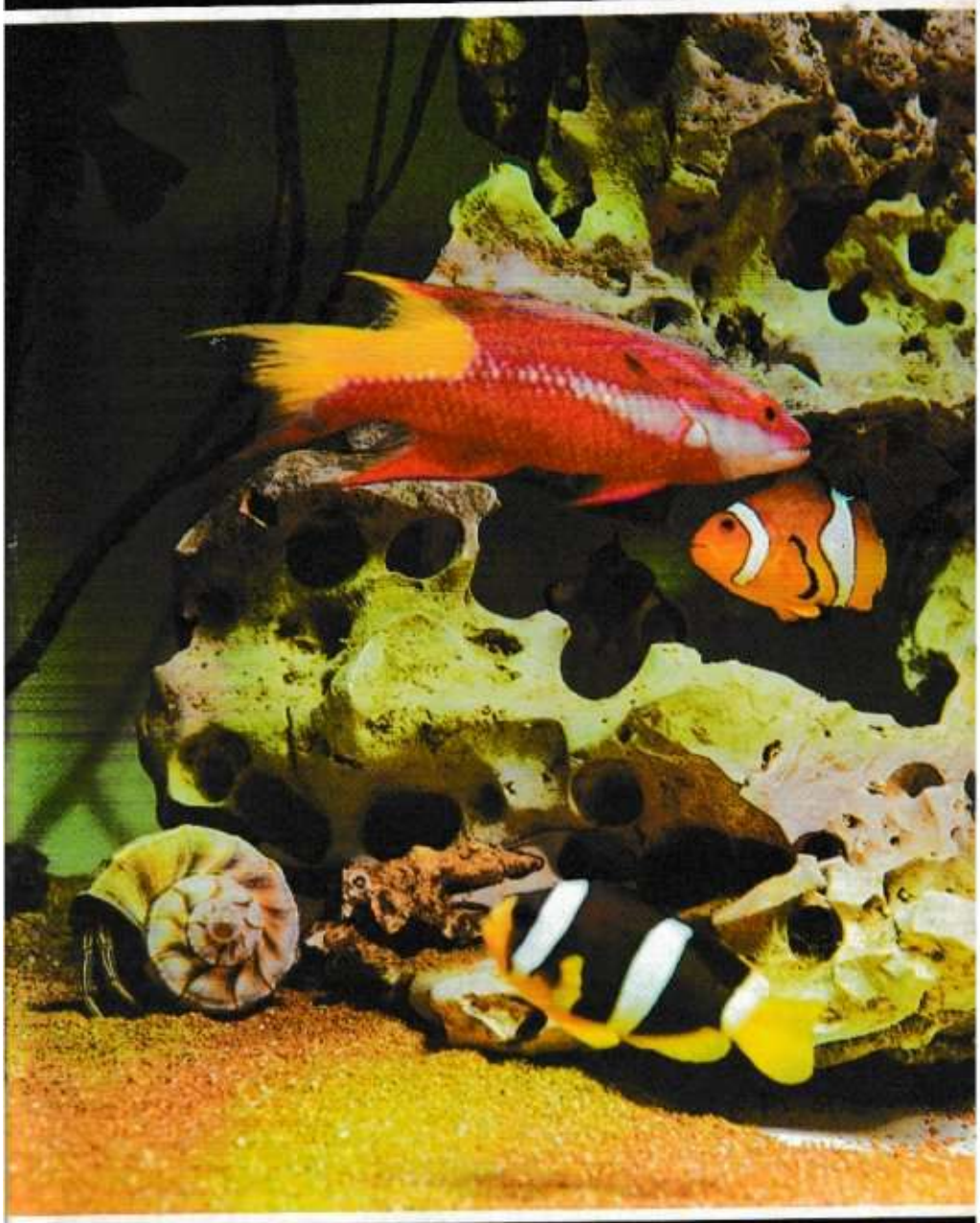

tropical fish hobbyist

Vol. XVI, August, 1968 (#150) No. 12

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cover

It's that time of the year again when bermuda shorts, sunglasses and sunburn replace the "business as usual" look, and everybody heads for the ocean surf to relax in the therapeutic rays of the sun. Bumper to bumper after a day on the highway, you finally arrive for what's left of your 2 day weekend. Ah . . . at last, you've found **paradise**; now you'll be able to sit and listen to the sounds of summer, and catch a few glorious summer sights. But first, a quick snooze on the glistening beach sands, so that you'll be refreshed for further activity, and in this way, you'll also get your first ten minute dose of the sun. Your sunburned friends warned you, "Remember, Jack, only ten minutes at a time. You fall quickly to sleep, the summer skies, balmy ocean breezes, and the hypnotic rhythm of the surf have woven their spell . . . you're out like a light. When you finally awaken and attempt to open your "burned to a bacon crisp eyelids", you begin to see the glimmer of smiling faces and what looks like a giant sandcastle. You're right . . . it is a **sandcastle**, and as you attempt to get up, you realize that you've been buried in sand by the same young smartee architects who have built this huge sandcastle right on your belly!

Well, maybe the above summer experience is exaggerated, but not that much really, for in this age of crowded highways, just getting to the beach or any summer haven is a real struggle, and after you've gotten there, the combat with the crowds for 2 inches of space is agony. That's why many people prefer bringing summer into their homes instead of going out to find summer; they'll turn on an air-conditioner or jump into a plastic pool. We fish hobbyists can have summer **all year round** just by setting up a **marine tank** like the one on our cover. We then can have all the beauty of the beach and ocean without all the inconveniences of traffic and crowds. Photo courtesy Monsanto Chemical Co. Ltd.

exotic tropical fishes supplements

Pages 33 and 34, 67 and 68. These pages are perforated for easy removal and punched to fit into the Looseleaf Edition of EXOTIC TROPICAL FISHES.

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editorial

I am often asked how I got started in tropical fish. It happens to be a very complicated set of circumstances, but there is a special reason for my writing about it now.

In 1947, when I returned to civilian life at New York University, after my service with the armed forces, I had the good fortune to win a fellowship in the Biology Department. My main job was to set up experiments for professors, clean the "dishes" and take care of the laboratory animals. I liked the fishes best....because they were the easiest to care for!

In 1950 I was back in the army, in Korea. It didn't take long before I was in the hospital with time lying on my hands ... so I began to write a book about tropical fishes. I wrote and wrote and wrote, and during my basic research in the library of the University of Tokyo, I met Dr. Tokiharu Abe, one of Japan's leading ichthyologists, Dr. Abe helped me find certain references (the Japanese librarians had painted the spines of the books black and translated the English and German titles into Japanese, making it easy for Japanese but difficult for Westerners.) He also helped me to find an artist to illustrate the book, and we made the color engravings in Japan, where they were 10% of the cost of these same engravings in America.

When my book was finished it weighed about 25 pounds and was almost 3,000 single-spaced sheets of typewritten paper. My service was also finished, and in 1952 I returned to the University, but not before I had promised Dr. Abe and Emperor Hirohito that I would bring a gift to America on their behalf... a set of perfectly preserved Japanese eels for the United States National Museum.

In making the presentation, I met the Director of the Division of Fishes of the U.S.N.M., Smithsonian Institution, Dr. Leonard P. Schultz, who was quite appreciative of the

Continued on Page 30

Zoom!! No, this isn't the Jaguar XKE, but a male **Hyphessobrycon herbertaxelrodi.** But if you watched some of these fish move, you'd swear you're watching the Indianapolis speedway; they are an active species that is best kept in a tank large enough to contain this vital activity. Note the color differences between these specimens of **H. herbertaxelrodi** and the ones on the following page. Changes in lighting will bring out hints of blue within the black areas. Photo by Dr. Herbert R. Axelrod.

If your local dealer has a tankful of the fishes depicted in this photograph and the label on his tank reads **Hyphessobrycon herbertaxelrodi** . . . forget it!! This species is **Hyphessobrycon stegemanni**, a species which is quite often confused with **H. herbertaxelrodi.** A second glance should quickly help you discover an obvious difference—the lack of the opal white above the black band. In fact, calling **H. herbertaxelrodi** the black neon, is to some people a misnomer, because that band of white above the black which inspired the common name, is just as prominent and beautiful, if not more so.

Flash!! These sleek streaks known as **Hyphessobrycon herbertaxelrodi** are making a big comeback. They've got a lot of things going for them, including a peaceful temperament and an appetite which doesn't require a Waldorf-Astoria menu . . . . dry foods and freeze-dried are really accepted happily. If you've got a spare tank gathering dust, why not bring it to life with these classic standouts. Photo by E. Roloff.

the BLACK NEON

BY JERRY CURRIER AND MARTY SMITH

It is no wonder that various characins are among the most popular fishes kept in home aquaria. They have many things to recommend them. They offer a broad spectrum of color, they are hardy and will adjust to practically any kind of water without great difficulty. Relatively resistant to disease, they also accept a wide variety of living and dry foods. Many are easily spawned and give the beginner a chance to successfully "cut his teeth", while other characins pose a baffling challenge even to the expert. The majority are peaceful fish and rarely bother their tankmates. (As with anything, there are exceptions, the well known piranha is a characin!) Since the majority of these fishes are native to North and South America, their collection and distribution has been reasonably simple. Still, as man pushes his frontiers further into the wilds of South and Central America, more and more new species are found.

In Germany, in 1960, a new fish was discovered in a shipment from Brazil. This little gem exploded like a bombshell on the European scene. Taxonomic identification was made by Dr. J. Géry, and the fish was given the name *Hyphessobrycon herbertaxelrodi* in honor of Dr. Herbert R. Axelrod. For reasons that are apparent upon seeing the fish, the common name became the black neon.

It is easy to see why this fish caused such a stir when it was first introduced. It has most of the desirable traits of the characins and few, if any, of the undesirable ones.

A very peaceful fish, it never seems to bother its tankmates. It will eat with gusto prepared dry, live, or frozen foods. It will attain a length of 1½ inches and loves to swim in schools of its own kind, making a lively and attractive picture. Not shy in its manner, it is always in view. Water conditions are not of paramount importance; the fish seems to adjust readily to any reasonable range of pH and hardness.

By no means are the dark markings a drawback. Although not as striking as its relative the neon tetra, *Hyphessobrycon innesi*, it has its own charm. The upper back is a warm brown, and the lower sides are a deep velvet black. Separating these is a brilliant creamy white stripe. Depending on the kind of illumination, this stripe may take on a cold blue color of become tinted with copper overtones or varying degrees of blue-green or even yellow. The ventral area is silvery white, and the fins are clear with a white cast sometimes making itself apparent. The black on the sides has a slight tendency to bleed into the caudal fin. The black neon always carries its fins erect when in good health, which gives it a perky appearance. Under strong overhead light, the eye shows a bright red in the upper half.

We have kept the black neon under greatly varied conditions, which include a wide range of waters from DH .5 to 14 or more, pH 6.2 to 7.6. There were no apparent ill effects under any of these conditions. The only difference appears to be a *slight* intensification of color at the lower readings.

The sexes are easily distinguished in mature, well conditioned specimens. The female is very deep in body. That is to say, the ventral curvature is greatly pronounced from the lower part of the gill-plate to the first ray of the anal fin. The male has a much slimmer profile. An abundance of live food such as brine shrimp, tubifex, and white worms plus liberal quantities of dry prepared foods are essential to good conditioning of these fishes. They also seem to enjoy a few baby fishes occasionally.

The breeding of the black neon offers a challenge that manifests itself not in the actual spawning, but rather in getting the eggs through a 24 hour period to hatch. If you are going to attempt breeding, we would strongly recommend your purchasing young immature fish and rearing them to adulthood yourself. This insures the knowledge that the fish you are attempting to breed are not too old and increases the chances of success. One other advantage is that the fish become acclimatized to the conditions you are able to supply.

As with many egglayers, the black neon can become eggbound, the female having trouble passing her eggs. This may be due to a number of factors but is easily prevented by early and regular spawnings. Again the purchase of young fish will help with this problem.

Our first attempts at breeding were made in conditions similar to those suggested for the neon tetra. The water was softened to a DH of .5 and pH lowered to 6.6. Rather than filtering through peat moss, coffee was used to darken and acidify the water. After a number of attempts with this solution, it was decided that determining when spawning was completed was very difficult due to the problem of seeing both fish and eggs. The next attempts were made in softened water (DH .5) with a pH of 6.6 gained by adding the necessary quantity of sodium biphosphate. The 5-gallon tank was thoroughly sterilized and bare except for the addition of two lengths of one of the commercial artificial spawning grasses. A ripe female showing marked signs of roe was placed in this tank in the early morning. Two days later an active, healthy male was placed with her in the evening. The following morning spawning began. A mild driving of the female started at about 7 a.m. and continued until about 9 a.m. The movements of the fish were very graceful with much swimming over and through the spawning medium and occasional rests in opposite corners of the tank. The tiny (less than 1 mm in diameter) transparent eggs were scattered through the grass and over the bottom of the tank. After two hours of this the parents started searching the tank for eggs and eating all they could find. They were immediately removed and a solution of sulfathiazole sodium and acriflavine was added as a fungus preventitive. Mild aeration with an airstone was supplied, and temperature was maintained at 80° F. The tank was covered to prevent the entrance of light. The fry began to hatch the next morning. They were approximately 1/16th of an inch in length, milky white in color, and had the usual egg sac

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Care and Breeding of the

Croaking Gourami, Croaking Gourami, Croaking Gourami,

Trichopsis vittatus

The male of this Asiatic labyrinth species can be identified by its more colorful pigmentation and more pointed anal fin. Photo by Hans Joachim Richter.

Elaborate nest preparation is the job of the male **Trichopsis vittatus.** He usually selects a site with floating plants to use as a foundation for his miraculous bubble-structured egg receptacle. Photo by Hans Joachim Richter.

Varying in size and shapes, these nests are all built with extreme care and strengthed by a secretion from the mouth of the male **Trichopsis vittatus** who remains in constant vigil, making sure the nest is repaired as necessary. Photo by Hans Joachim Richter.

Trichopsis vittatus, the croaking gourami, is a member of the labyrinth fish family which is not often found in the tanks of hobbyists. When young they are not very attractive in their colors. This is probably the reason that in spite of new imports of them fairly regularly, they always seem to drop out of the picture.

When I first saw them at a friend's home, I was not exactly entranced. As my special interest is in the labyrinth group, however, this species intrigued me nevertheless. At that time, I did not realize that the fish I saw were still youngsters; they were about 2 inches in length at this time.

The ones given to me by my friend were put in my 40-gallon tank stocked solely with other labyrinth fishes and planted with *Synnema triflorum*, *Hygrophila augustifolia*, *Hygrophila polysperma*, and some broad-leaved *Cryptocoryne* species. Here they, with good feeding, grew well. They soon measured about 3½ inches in length. (This may seem a bit big. But remember that with this species the tail alone can get to be almost 1½ inches long.) At this size the fish will spawn, at which time one can appreciate its beautiful colors. The formerly grayish-yellow becomes greenish, while the large fins are reddish with blue markings. The fin edges are a lovely turquoise and reflect light exactly in the same shade as the eyes. Above the pectoral fins there is a bluish shoulderspot.

The colors described hold good only for the male. The females are much more modest in their colors. When two males meet in a tank, a battle is practically assured which is more protocol than combat. The two fish circle each other with outspread fins and make a lot of croaking or purring sounds. Each male tries to spread his fins more than the other and make more noise. Whichever of the two folds his fins first is the loser and makes off, slightly speeded on his way by the winner. These short battles are a fairly common sight, and amusing as well. It would be a little more dangerous for a strange male to intrude into another's territory while he is guarding a bubblenest. This battle does not stop with a mere exhibition of each other's strength, and the intruder, if he is lucky, comes out of it with merely a few pieces of his fins missing; if his luck is not so good, he can lose a few of his scales, leaving holes through which the raw flesh is visible. I have also seen a male protecting his nest immediately kill an intruder. It is not, therefore, advisable to keep several pairs together in a small aquarium.

Now to the breeding of *Trichopsis vittatus*: a medium-sized aquarium set up in the usual manner is sufficient for their breeding, but an aquarium without any bottom gravel, and with the plants in a flowerpot, is also satisfactory. The tank capacity should be no less than 7 gallons. Water temperature should be about 78° F.

As for the breeding pair: after a period of acclimation, the male begins his courtship with outspread fins and lovely colors, not to mention the necessary croaking noises. Soon afterward, the male begins building the

bubblenest, picking a place where a larger leaf floats on the surface. Beneath this leaf he blows his bubbles. There are no other additions to the bubblenest besides the bubbles. (*Colisa lalia* and several other gouramis add plant bits to the nest.) When the nest is finished, it is about 1½ to 2 inches in diameter and almost 1 inch in height.

While he is building the nest, the loving swain who courted the female so ardently makes it plain to her that her presence is not desired. He drives her away every time she approaches. However, as if propelled by an unknown power, the female keeps coming back to the nest. At this time she seems to press ever closer to the nest. Her egg supply can at this time be seen clearly. She seems to be very anxious for spawning. Finally the male is crowded by the female, and allows her to butt him in the stomach region again and again. Then he gets the idea that his services are desired, and there follows a regular labyrinth-fish embrace and mating. An unusual thing is that the female is permitted to help gather the eggs, which would be unthinkable in most other anabantid species. After spawning is finished, however, the female is again driven from the vicinity of the nest. (Here I must interject that the female, if the male is removed at this time, takes excellent care of the eggs and young.)

But, back to the nest: there are two possibilities when you wish to raise the young. Either one takes the female from the tank and lets the male take care of the eggs, removing him shortly after the fry have become free-swimming (or, better yet, shortly before they become freeswimming) or one slips a saucer under the nest and transfers it to a nursery tank. Here the water level should not be more than 2 inches. The water can be made up half from the breeding tank and half fresh water. With either method, you will see a large number of youngsters hanging from the bubblenest. There will often be an astounding number of them, and of a large size. They are almost double the size of dwarf gourami fry, and there may be as many as 700 of them.

The fry grow very readily when fed with infusoria, and in 6 days they are ready for cyclops nauplii or newly hatched brine shrimp. Until they are about ⅛ of an inch in length, they grow exceptionally well, but then for about 2 weeks they seem to slow down a bit; do not become discouraged, because after a short time growth picks up again. Given good feeding, they grow to a size of about 1¼ inches in only a month.

So it can be said that the breeding of *Trichopsis vittatus* is not fraught with any great problems. The hope remains that this attractive fish will again be found more frequently in the tanks of hobbyists. Do not let the rather unattractive colors of young specimens deter you from buying them; you are sure to find that your fish become quite lovely after keeping them for a few months.

Camera close-up

Photos by Hans Joachim Richter.

"SPAWNING SEQUENCE"

Through the eye of the camera and the magic of lightning quick electronic flash, we are afforded a front row seat on one of nature's heretofore unseen events—the forceful, repetitive embraces of the female **Trichopsis vittatus** by the male which leads to the expelling of the buoyant eggs.

Red Spots

Q. I have one young female betta in one of my tanks. She has very small red spots on her gills and part of her belly. I am worried that this is some kind of disease. She shows no other signs of being sick. Could these spots just be part of her normal coloration?

Joanne Coady
Laval, Quebec

A. *This is difficult to answer without seeing the fish. I have female Gambodias with such markings. They tend to occur in the center of each scale on the belly. In this case it is normal coloration. These markings are not desirable on show fish.*

Q. Several years ago I saw an advertisement for Fairy Finned bettas and Fire Finned bettas. What do they look like and where can they be obtained?

Jane Richards,
San Diego, California.

A. *The varieties you mention were developed by Rose Masek at her 'R and G Betta Farm'. Unfortunately, illness forced her to give up the commercial end of the hobby. I do not know where these varieties can be obtained. R and G shipped bettas to all parts of the country and doubtless some of these lines are still being bred. The Fire Finned variety was essentially a black betta with red fins edged in black. The Fairy Finned series was composed of yellow bettas with various pastel shades of iridiocytes. Rose also developed blacks with yellow fins, yellows with red fins, and reds with yellow splotches on the fins. The yellows with which Rose worked were mutations from her own line of greens and they were quite distinct in color from those usually called yellow; Rose described them as "butter yellow".*

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The Smithsonian Institution and T.F.H. Publications, Inc., are pleased to announce the publication of a reprint, including the color plates, of the Philippine Bureau of Science's three Monographs on Philippine fishes: No. 1, Jordan and Richardson's Checklist, 1909; No. 23, A. W. Herre's Gobies, 1927; and No. 24, Montalban's Pomacentridae, 1927. These rare historical works are available in a clothbound volume for $5.50.

Two earlier numbers in this reprint series are: Jordan and Everman's "The Fishes of North and Middle America," U. S. Nat. Mus. Bull. 47, Vols. 1-4, 1896-1900, $25.00; and Smith's "The Freshwater Fishes of Siam or Thailand," U. S. Nat. Mus. Bull. 188, 1945, $5.50.

Orders for these books, accompanied by remittance (postpaid) should be addressed to:

Publications Distribution Section
Editorial and Publications Division
Smithsonian Institution
Washington, D. C. 20560

familiar moments

"I didn't say he stopped jumping.... I said he stopped jumping out!"

EDITORIAL *Continued from Page 3*

eels and sympathetic about the trouble I had to go through to carry them from Tokyo to Washington. His parting words to me were: "If I can ever repay your kindness, feel free to call upon me."

My next stop was with the editors for McGraw-Hill Publishing Company. They were almost staggered by the size of my book on fishes, but when they saw the beautiful color plates, they at least listened to my story. I told them I had written a book about all the known aquarium fishes, with chapters on nomenclature, fishkeeping and fish diseases. This book was very necessary, because the old standard work by Innes was terribly obsolete and the old gentleman was almost 80 and had no ambitions of bringing it up to date. (That was in 1952, and Bill Innes is still living and in excellent physical condition.) The editors told me that they liked the book but thought it too " authoritative " for a " young fellow like you. " They said they would have to have it reviewed by a recognized authority and asked me if I could suggest anyone. Immediately I thought of Dr. Schultz, whom they accepted without question.

The manuscript was sent to Dr. Schultz, and I waited the longest three weeks in my life. The answer came back. While the book was basically a good book, he said, there had been so many changes in nomenclature since the references I cited were published, that a complete overhaul of of many of the genera was necessary. This was especially true of the genus Barbus, many of the killifish, and the characins. McGraw-Hill said they would publish the book if Dr. Schultz would work it over thoroughly and publish it under his name. I quickly agreed.

Not only did Dr. Schultz personally check every fish I wrote about, by getting the original preserved specimens and studying their classifications, but his wife, a fish artist of great reputation, drew some of the fish portraits for the book as well.

Because Dr. Schultz was the great man he still is, he quietly told McGraw-Hill that Axelrod should be the senior author of the book, and he would be satisfied with junior authorship. Thus,the Handbook of Tropical Aquarium Fishes, was published. I was 25 years old then, and overnight people wanted to know who the "fish genius" was that coauthored such a fine book and had the qualifications that made Dr. Leonard Schultz junior to him. I was appointed at NYU.

Well, Dr. Leonard P. Schultz isn't junior to anyone in the fish world. He is probably the greatest living systematic ichthyologist, but his great brain is second only to his great heart. His reputation was solidly established...so he accepted junior authorship to establish mine.

I wasn't much of a fish expert then, but I soon had to be, and Leonard kept helping me by accepting Advisory Editorship of this magazine since its first issue in 1952, without pay.

On July 1st, 1968 Dr. Schultz retired from the Smithsonian Institution. His plans call for various activities other than fish studies, but he still hopes to be a "Senior Citizen" at the USNM.

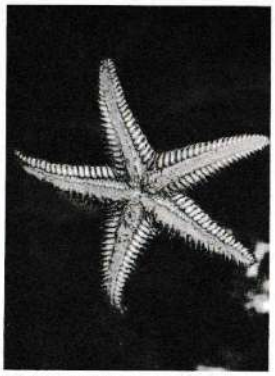
Though I dedicated my Encyclopedia of Tropical Fishes to Dr. Schultz in 1957, this in no way measures the sincere affection and respect I have for this great gentleman and his beautiful wife. I hope that in some small way I have measured up to his expectations, for the faith he had in me kept me going over some of the rough spots.

Thank you, Leonard.....and thank you, Readers; this was the longest editorial I have written or will ever write.

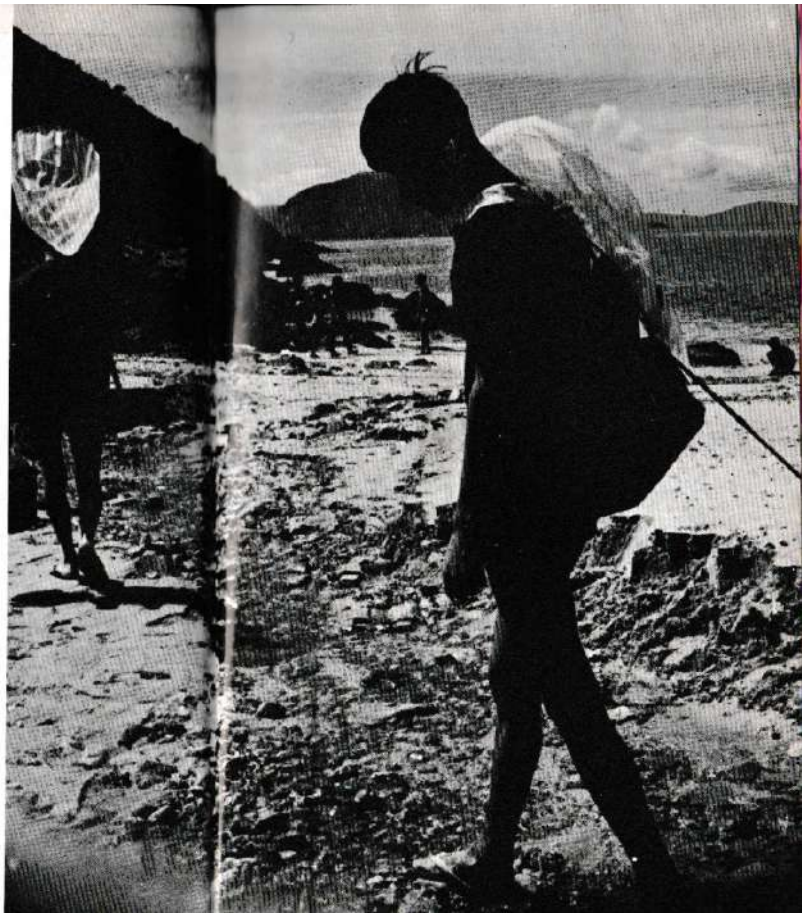
Herbert R Axelrod

Keeping Marine Tropicals In Hong Kong

Time seems to be standing still as these Hong Kong youngsters tip-toe through the silence of this majestic beach in search of invertebrates such as the 5 arm starfish below or any fishes that are being held captive in shore pools created by high tides.



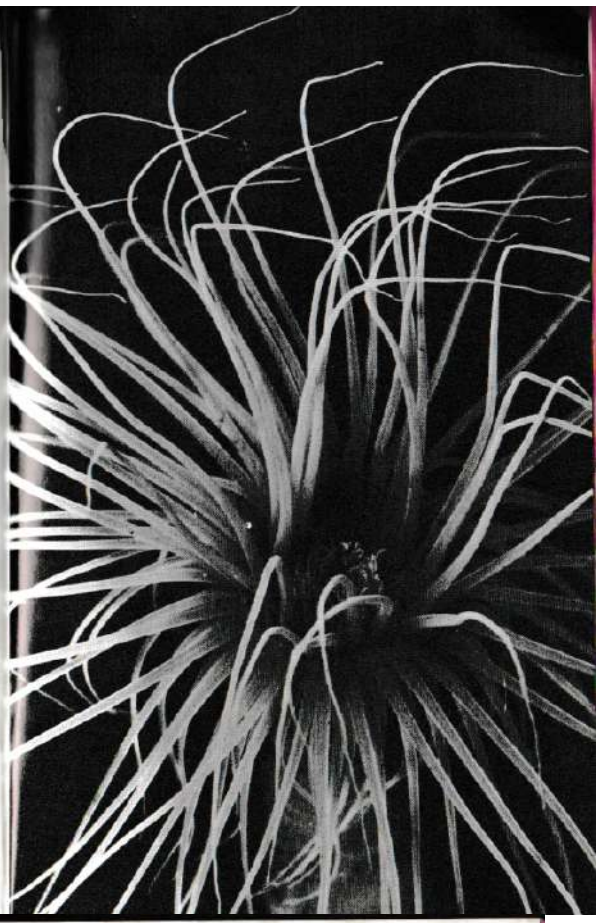
BY HUSEIN ROFE, Hong Kong



We have some fine beaches on this island of Hong Kong, and last year I began to pay attention to seashore life for the first time in 30 years. I was in fact collecting specimens before I had a proper tank for them, and various crabs, hermit crabs, anemones and so forth went into a diminutive tank which had little but aeration to recommend it. Then I read up on the subject and spoke to a craftsman about the question of making a special marine tank. Possibly the ordinary tanks sold in Hong Kong with glass sides would have suited the purpose, but I was so scared by all the remarks I read about poisonous cement and so on that I obtained glass cement and insisted the entire inside of the tank should be made of glass.

I was then offered an all-cement tank with glass walls inside, of about 23 gallons capacity, and at almost the same price as my previous large fresh-water tank, but I insisted on greater breadth and less depth. I had the top of a cupboard measured for the size, but forgot to consider that this would mean too great a height for convenient servicing, and in fact I later had to get on a chair for that purpose. Besides, the tank proved so heavy that it needed two people to move it when empty. Owing to an uneven floor, the glass bottom cracked when the water was put in, and the inside had to be re-cemented. At last the tank was ready and a couple of Miracle filters fitted the base nicely, with the water bubbling up in the two rear corners. I filled it up with the usual local "sand", a few rocks and sea-water. Although my house is near the sea, the rather impure water of the port area was quite a problem, since coolies had to make about six trips to fill the tank from a couple of buckets. At first I was foolish enough to have the water brought in metal buckets, but later substituted plastic ones.

During a storm, I had picked up a strange marine creature swept by the tide straight into my bucket. I have never found anyone who could identify it, either by a description, or during the week it lived in a tank. It resembled nothing more than the conventional idea of a flying-saucer, like a cup inverted over a circular base, with a death's head pattern and two small antennae (or eyes on stalks) above, black and white in color. The remainder of the creature was white, except for the underside, which was the color of the base of a pancake. It swam in a bat-like manner, reminding me more of a bird than a marine creature, and left behind it a train of white and probably poisonous threads. I couldn't discover what it ate, and within a week it was dead. Even the Professor of Zoology at Hong Kong University was quite at a loss to identify it from my description, but it appeared to be conditioned to life on the sea-bottom and to be some peculiar member of the slug-family. The base was about six inches in diameter.



Maybe the next generation of flower children will identify themselves with the magic flowers of the underwater world . . . the **anemones;** these sea-animals because of their biological mechanisms and needs are probably best maintained within an invertebrate setup or in their own individual tank, where they can flourish for years.

Most of the marine creatures survived quite successfully in the tank, though the amah was constantly finding crabs wandering around the house, later dropping them unconcernedly back into the tank. One of the problems was the glass top (an inch less in breadth than the tank itself). This was unwieldy to remove, as was the neon lamp which rested above it on a stand. Although the whole arrangement was rather clumsy, I was determined to make use of the tank. Anyhow, it was unsalable in a land where nobody kept marine tanks at home.

I now asked a dealer to try and get me some marine fish, and he must have had good connections with the fishermen, for it was not long before he turned

Have no fear, this sea-monster is not about to devour our Hong Kong fishing boat. It's all an illusion a la King-Kong. In fact this open-mouthed creature isn't even really a monster (unless you're a guppy looking up). If you haven't already guessed, this sneering villain is a **moray eel** which is indigenous to most tropical waters including the ocean which is part of the Hong Kong harbor. We don't want to mislead you though into believing the moray is harmless, it is actually quite vicious and dangerous, being feared by divers, especially any of the giant morays which may reach ten feet in size. Come to think of it, maybe our little Hong Kong fishing vessel is in trouble!

up with three *Chaetodons*, a pair about five inches long and a smaller one. These fish absolutely took my breath away, and I purchased the lot for $12 (or just over U.S. $2). They were incomparably more attractive than the expensive fresh-water Discus, a pair of which the same size would have cost me almost ten times the price. They soon died of what I later learned must have been paralytic shock, and I was careful to spend several hours over the transfer of the next pair, which settled down happily in their new home.

Within a few days my supplier was back with dark clown fish, *Premnas*, and then again with the smaller light-colored and less aggressive variety, *Amphipria*. The problem now was that he expected to be paid for whatever he brought, as nobody else would purchase these marine fishes if I rejected them. Some of the larger variety ended up on the dining-tables of Chinese neighbors. The remainder looked delightful in the tank, their white stripes glistening a pale blue as they swam along with a plunging movement.

Here we never have the chance of obtaining the large anemones, and see little but the common variety of the seashore rocks. Coral is another problem. Although there is plenty around, it is rarely offered for sale, and even then is seldom suitable for the marine tank. My fishing expeditions did however result in a few interesting catches. Most of these were young fishes swept in by the tide. They remained in shallow pools, so they were not too difficult to capture. In this manner, Robert one day secured a delightful pair of *Chaetodons* about one inch long. Marine fishes are cheaper as they grow up, fresh-water varieties dearer, since the fisherman rarely nets a baby. These little Butterflies adapted themselves to the new home much more easily than the large ones before them, and were less shy. All seemed to like *Tubifex* worms, and the babies ate brine shrimp quite happily.

I also caught an attractive 2-inch Wrasse, which, except for a Blenny, was the tamest specimen, and always kept a look-out for food when I approached. Unfortunately, as he grew up, he developed the habit of eating several of the smaller and more valuable inmates. The Blenny would hop forward from among the rocks to ask for food when I came near, and seemed quite trusting.

Our most common seashore fish are the *Therapons;* these are much more colorful when young. Scats are to be found in profusion, generally under rafts near the beach, often in the company of young Sergeant Majors. The Puffers I have always ignored. They are so familiar a sight that they seem too common for the aquarium. The Chinese have a keen sense of the rarity and financial value of fishes and never approve of expensive varieties being kept together with the common ones.

Chopped up pieces of fresh shrimp were often welcome to the fish, but many kinds preferred the live bait I could find at the seashore by letting shoals of various fry swim into the net. Perhaps this was the most natural

food for the carnivorous species. The principal fishfoods were often welcome, even bread, which the butterfly fish particularly enjoyed. I mean fish-bread, manufactured in Japan, a staple local dry food for fresh-water fishes. Brine shrimp are almost universally recommended as a main article of diet for marine fishes, but I have always found it somewhat difficult to separate these minute creatures from their egg-shells. Keeping the marine tank clean is a big problem, and I have never seen any directions for the removal of minute particles of uneaten dry food, as these are invisible when they slip down among the sand. Perhaps the real answer is to use beach-sand which is then so tightly packed that there are no crevices. The power filter seems to be a boon, but I have never yet heard of one that will work on a 220 v. 50 cycle current, which is what we have in Hong Kong.

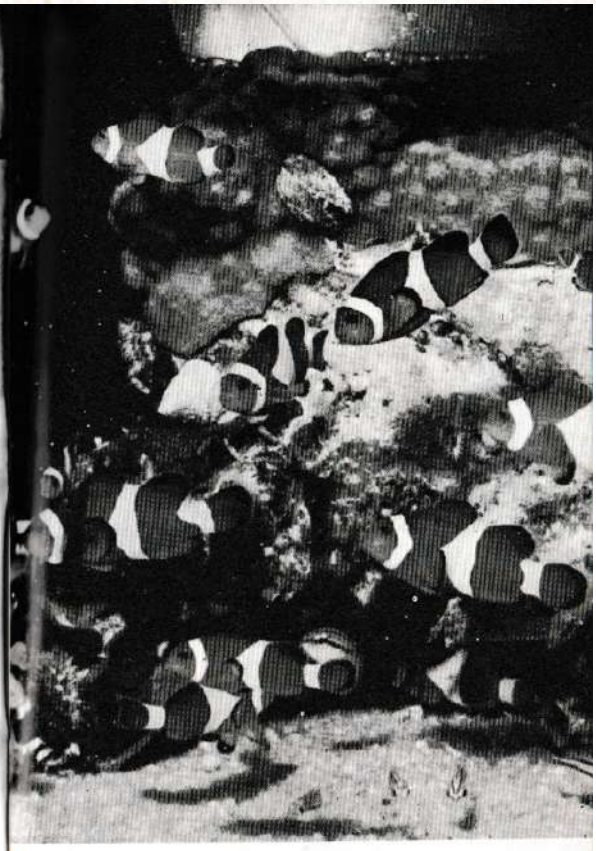
Swimming under water after fishes is not very practical without both skill and equipment. I have never owned an aqualung, and have found that face masks either pinch one's face or let too much water in. Once under water, the net proves very resistant, and can't be moved forward quickly when it is most needed. Hence, I have failed to capture baby sharks six inches long, and various other attractive fishes which I would find living under rocks I upturned.

Eventually something went really wrong with my tank and I began to find my fishes dying off one by one after a few months. Their stiffness was a noteworthy characteristic, and it seems they were not poisoned, since the hermit crabs were still in health, and these are supposed to be among the first to succumb to poison. By now the cold weather was on the way again, and I decided to put my marine tank to other uses for the winter.

The foregoing deals with my attempts in 1960. In the autumn, I gave up the attempt to keep marine life, as far as the approaching cold season was concerned, and used the marine tank for breeding Angels. Then I read in the Tropical Fish Hobbyist about *Chemi-pure*, ordered some, and decided to try again with the return of the warm weather in the spring of this year. The tank was set up once again in April, and has been functioning since then.

I look forward to keeping it running with healthy specimens throughout the winter. I started off a little earlier than I had expected because we picked up four pretty little fishes swimming lazily inshore in the sunshine one day in late April. The colors resembled those of the *Therapons*, though habits were less gregarious, and locomotion was slower. Bodies were squatter and more squat, stripes yellow and black, with yellow fins. The intensity of the yellow was to vary with the background and lighting. At the rear of the dorsal fin there is a black circle. These proved to be *Microcanthus strigatus*. The only accurate color illustration of them I know is to be found in the new enlarged and revised edition of an excellent Japanese-language work: Shinji Makino's *Exotic Aquarium Fishes*.

If you are tired of hearing about the trouble with hippies on campus, why not relax a little by keeping a species of Hippocampus (seahorses). You'll have very little trouble with **Hippocampus hudsonius** or **H. kuda**, species which happily conform to their new aquarium environment. In Hong Kong these unique aquatic creatures with a hard external skeleton and unusual breeding behavior are popular and highly prized. Another factor in seahorses being a favorite, of course is, that it isn't really necessary to have elaborate salt-water aquaria in order to maintain them.



These prime specimens of **Amphiprion percula** are fortunate fellows. At the time this photograph was taken they were living in a very handsome 200 gallon setup (rent free). And in their own natural environment they were living again rent free within a large sea-anemone. These clowns have it made! And if that isn't enough, the citizens of Hong Kong go wild over these same zippy marine fishes, lavishing them with all kinds of attention and imaginative aquarium displays. Clowns may be sad on the inside, but boy, they sure have a lot of fun on the outside.

Divers are in demand in **Hong Kong** waters for these waters are lush with exotic fishes such as the school of parrot fish on the right—a sight which would thrill the most uninitiated. The **China Sea** is inhabited by aquatic species that haven't as yet even been classified by ichthyologists, so that the excitement of new discoveries is still possible.

This fish is about the cheapest of the marine tropicals in the Japanese dealers' shops, and it is known in that country as the *Kagabakitai*. I think Dr. Ladiges mentioned that it is rarely offered for sale in the West. These are quite hardy little fishes for the home aquarium, and are capable of darting about rapidly, though they also tend to seek shelter at the slightest disturbance. Eventually I disposed of two so as not to overcrowd the tank. One pair of each species would be adequate.

I next visited the Hong Kong Aquarium and persuaded them to sell me a pair of small Seahorses, for they had just enough over from their export order to do so. At the same time, I took two young *Monodactylus*. These all went into the marine tank, together with a *Toxotes*, which developed a black eye (literally!) and went on a hunger-strike, so I removed it.

Although I have seen it stated that only a "nincompoop" would keep Seahorses and tropical marines together, I am not doing too badly to date. The seahorses relish bloodworms, and there is quite an audible snap of the jaws when they get hold of them after slowly crawling along the bottom in pursuit, and one sees the worm go as far as the throat, since the mouth is almost transparent. *Daphnia* are also taken in addition to brine shrimp, though *Tubifex* worms are ignored. I have now two other pairs of fishes in the tank, two small crabs, four small sea-anemones and a hermit crab. Between them, they see that no surplus food is left to decay. As to dead *Daphnia*, and the odd *Tubifex*, I think (and hope!) that my two internal, and one external, filters take care of them.

The Seahorses swim about gaily, crawl along the sand, and twist themselves into grotesque shapes around the coral. Their most touching performance was to twine together around the thermometer (which broke loose from its moorings) and go cruising round the tank with it!

The *Monodactylus* are as active in the marine tank as the larger pair (now 4 inches long) in the 65-gallon fresh-water tank. However, one of them spends his time chasing the other quite heartlessly, so that it tends to hide in any available refuge at mid-level, which usually means behind the thermometer. I have noticed that these fishes acquire a dark discoloration of the back part of their bodies both in dim lighting and when they are scared.

I don't know what the cause is, but marine tropicals have suddenly appeared on the Hong Kong market in relative profusion. They are usually kept in ordinary tanks with sea water. According to my observations, the street dealers understand little or nothing about keeping them, and pay no attention to such problems as corrosion, salinity, acidity or accommodation. One usually sees about forty fishes swimming in 20-gallon tanks; often they are crowded even worse. High prices are being asked, and the public rarely has the slightest understanding of the difference in principles between keeping these and looking after fresh-water varieties. About the only thing the dealers

know is that they can ask very high prices for these curiosities, and I suppose they rely on a quick sale before disease and poison strike their tanks.

Two weeks ago, an enterprising and intelligent Kowloon dealer, Robert Lee, telephoned me that he had just received a shipment of marine tropicals, which I suppose came from Singapore. I thought there was probably little danger in purchasing from him, especially if I did not delay. He had Blue Demoiselles (which he called Blue Devils) in profusion, *Chaetodon octofasciatus*, which are now to be seen in several local shops, ugly-looking little frogfishes, *Amphiprion percula* and *ephippium*, and a solitary little long-nosed butterfly (*Chelmon rostratus*). I bought three Butterflies, a pair of *Chaetodons*, and the *Chelmon*. The latter cost me more alone than the other pair, and proved my undoing. It was already very thin, and died within two and a half days, gasping on the bottom of the tank. Fate willed that the electric current should be cut off for exactly an hour at this critical time! I believe it is very difficult to accustom these fishes to aquarium diet.

One *Chaetodon* was observed the next morning to have body-fungus, and went back to the shop to be exchanged half-dead for another specimen, with a small charge for the service. The new specimen didn't take to the tank too quickly: for a few hours it breathed heavily and rapidly, occasionally swam to the top in obvious discomfort, got nipped and chased around by the other companions, but eventually settled down happily. This happened of course before the *Chelmon* died. The *Chelmon* was apparently fascinated by the new arrival (though not unaccustomed to the proximity of the species) and would follow it around at close quarters for hours on the day of its arrival.

These *Chaetodons* (which strongly resemble young Discus in appearance) are not difficult about food, and will even take playful pecks at the center of a small brown sea-anemone. In fact, for the last week or so everything has appeared safe and harmonious in the tank. I may add one more pair of small fishes, if I see or collect anything worth-while. Otherwise I shall leave well alone for the present.

I use a small piston-pump to operate the three filters and the diffuser-stone, and think this is probably more satisfactory than the more common, cheaper pumps, because it sends up the air in surges, which is perhaps more natural for inhabitants of the sea. Further, the short intervals between the surges may help to cut down the accumulation of salt on the top glass. Above the glass I now have a cheap Japanese reading-lamp, which can be curved round to any angle, with a 60-watt bulb inside it. At this season of the year the temperature of the tank tends to be around 80°, so I sometimes switch the light off for hours at a stretch. Last year, the tank got a little sunlight, but meanwhile a new eight-story building has gone up across the road, and there's none left in that room!

I've now come to the end of my account about my largely unaided gropings

Continued on Page 82

MAIL CALL

If you have an aquarium question that you would like answered, send it to MAIL CALL. Each month the most interesting questions received and their answers will be published in this column. Letters containing questions cannot be acknowledged or answered personally. Address all questions to: MAIL CALL, T.F.H. Publications, Inc., 245 Comellison Avenue, Jersey City, N. J. 07302.

Enough food for plants?

Q. My mother and I had a disagreement. I say that one reason my plants have been dying is that the food on the bottom of the tanks helps the plants grow, and, since I clean my tanks often, my plants don't get enough of this food. Who is right?

Local swamps in my area contain weeds that have bulbs at their base. These bulbs contain insect grubs of some kind. My friend says that these grubs are good food. Is this true?

David Jensen
Minneapolis, Minnesota

A. *Assuming that your mother contends that aquarium plants don't need fertilization to a degree that would mess up the bottom of the tank, and that just a little bit of organic matter is all the plants need, she's correct. One nice thing about aquarium plants is that they don't need heavy infusions of fertilizer to grow well. As a matter of fact, most don't need any special preparations at all.*

Your friend is definitely right when he says that the grubs make good food for fish; wild fish thrive on them. But whether your tropicals are big enough to eat them is another story. Try feeding them the grubs and see what happens.

Problem with Catfish

Q. I have a problem with catfish. Whenever I buy *Corydoras aeneus* or *Corydoras melanistius* or *Corydoras julii* or *Kryptopterus bicirrhis* they die within a week. The tank is 10 gallons, with alkaline water and mystery and ramshorn snails. I don't use any salt in the water. Usually a day or so before the catfish die I find them resting on a plant near the surface. These are the only fish I have trouble with. Can you help me?

John Ares
Staten Island, New York

A. *Not very much, unfortunately; there's just not enough information to go on. Just offhand, since you seem to be having trouble only with newly introduced fishes, I'd say that the other fishes in the tank have built up a resistance to whatever toxicity the water contains and that they can therefore stand whatever is killing the catfish faster than the catfishes can. Suggestion: change the water in your tank by making frequent partial changes.*

Corydoras aeneus

British Gallon

Q. I would be most grateful if you could answer a few queries that have come to mind in reading your magazine.

1. Your equation for figuring out the gallonage capacity of an aquarium (length in inches multiplied by height in inches multiplied by width in inches, the product divided by 231) gives nowhere near the actual gallon capacity of my aquaria, can you tell me if there is any difference between the U.S. gallon and the British gallon?

2. If the two gallons are not the same, can one still use drugs as per the dosage recommended in your given quantities, or is the difference too great?

B. Denholm
Insch, Aberdeenshire, Scotland

A. *1. Yes, there is a difference. The British, or Imperial gallon is a good deal bigger than the American gallon. The British gallon contains 277.42 cubic inches, whereas the American gallon contains 231 cubic inches.*

2. For some medications, those in which the amount per gallon to be used is not highly critical, the same dosages could be applied. Where exacting measurements are required, however, the dosage would

have to be increased proportionally for the British gallon.

What is a pH Kit?

Q. Having just received my first copy of your magazine, I noticed your "Mail Call" section, so I have a few questions to ask you.

1. You mention a "pH kit." Please explain what this is.

2. It seems that in my community tank I have to keep most of my fish separately, because all of them chase each other. What should I do?

Marvin Barnes
St. Louis, Missouri

A. *1. A pH kit is a device for measuring the relative acidity or alkalinity of water. There are a number of different types of kits; some use litmus paper as an indicator and some use liquid. These kits are inexpensive and handy to have.*

2. If you have to keep them all separately, you don't really have a community tank. Solicit your dealer's advice about which species will live peacefully with one another before you mix them together in a "community" aquarium. On the other hand, don't confuse normal playfulness and activity with viciousness; if the chasing being done results in no harm, there's no reason to separate the fishes involved.

"Ready formating" Discus

Q. I would like to commend you on your *Tropical Fish Hobbyist* magazine. I receive hours of enjoyment from it.

I am interested in breeding *Symphysodon aequifasciata axelrodi*. I would like to know how to acquire a pair ready for mating.

Russell Pietryla
Chicago, Illinois

A. *The best way to acquire a pair of discus (or most all tropicals, for that matter) is to buy five or six young fish and let them grow up and pair off for themselves. It certainly takes longer than buying a pair that has already spawned or is "ready to spawn," but it should be cheaper and surer in the long run.*

Another Solution

In the May "Mail Call" Mr. Neal Ewenstein comments about a high mortality rate involved in using a plastic breeding tank. If I may, I would like to offer another solution. Many of these breeding tanks are separated from the main body of aquarium water (probably so that they can be lifted out easily). The problem is that a 3-inch by 5-inch tank, regardless of how deep it is, does not contain enough oxygenated water or offer sufficient surface to keep a mature swordtail, especially one engaged in the exhaustive process of breeding.

Your solution, of course, a separate tank, is excellent, but the trap will work also if provided with small holes for circulation, or perhaps a screened bottom. You might pass on my suggestions to Mr. Ewenstein, and perhaps they will also be of general interest.

Lew Gross, Jr.
Baltimore, Maryland

Defenseless Tetra

Q. What type of animal has no natural defense against its enemies? All animals have some type of defense against enemies, such as bad taste, sharp spines, etc. The cardinal tetra, it seems, has none. It is brightly colored, travels in schools, it is bite-size and has no sharp spines or armor. What is the cardinal tetra's defense?

Bob Schatan
Catalina Island, California

Cheirodon axelrodi

A. *The cardinal tetra's defense (and we are speaking here of defense in the sense of the species' defense against extinction by its enemies, not of an individual fish's defense in terms of armament or camouflage or such) is simply that it is prolific. Individually, the cardinal tetra has no defense except speed against its enemies.*

Foiling Planteaters

Q. I have three silver dollars in a 30-gallon community tank, planted with all plastic plants. Are there any living plants that silver dollars will not eat?

Robert E. Lorenz
St. Louis, Missouri

A. *There are many plants that silver dollars won't eat; unfortunately, most of these won't live in a tank, either. One semi-aquatic plant that the silver dollars have less relish for is* Dracena sanderiana, *a stiff-leaved bog plant that will keep submerged in a tank for some time. You might try this plant. You can also partition off your tank at the back, with a sheet of glass; this will allow the tank to house living plants while preventing the* Metynnis *from getting at them.*

Polypterus species

Q. About a month ago, in a small rural pet shop, I purchased an elongated, serpent-like fish. The dealer called it "a type of lungfish." I could not find the fish pictured in any book, but it does resemble the Polypteridae species. The fish is about 11 inches long and ¾ inch in diameter. It has a series of 10 short, webbed spines along its back, a small caudal fin and an anal fin nearly merged with the tail. The pectorals closely resemble those of the "Lobe Fins." The head is extremely snakelike. It has the same width as the rest of the body and is covered with large plates. The mouth is very long and the underside of the lower jaw is accordion-like, enabling the fish to swallow twice its width as it did to one of my full grown swordtails. On the tip of the upper jaw are two extremities that are hollow. The fish periodically comes to the surface to gulp air. The coloring is a dark olive green, with a yellow underside. From this description and the rough sketch I have enclosed, I would appreciate anything you can tell me about the fish. Thank you.

Art Petro, Jr.
Cleveland, Ohio

Polypterus species

A. *Judging from the sketch you submitted, you've pinned your fish down to the right family. It's a* Polypterus *of one type or another. Members of the family Polypteridae are, as you've noticed with your specimen, equipped for supplemental breathing at the surface. They like living food and are primarily nocturnal feeders; in their native African waters they like to hide among rocks and submerged branches, so give yours a place to hide. They are usually peaceful with other fishes not big enough to swallow. All of the* Polypterus *are very adept at escaping from aquaria, so make sure your tank is securely covered.*

Oscar Information

Q. I started this most interesting hobby only about six months ago, and I am having trouble finding information on certain fish. I have a good dictionary by H. Fray, and another book borrowed from my mother-in-law, by W. T. Innes, but I can find nothing really helpful on Oscars. *Astronotus Ocellatus*, and I purchased two young ones a few weeks ago, about an inch and eighth long, very dark and extremely fond of tubifex worms, and this is all I know. Do they have any strong preference to pH? What is their growth rate, and are they subject to

any specific weaknesses or diseases in their kind?

Mrs. Glorie Barber
Seattle, Washington

Astronotus ocellatus

A. Astronotus ocellatus, *affectionately known as Oscar, is not very fussy as to its*

water chemistry, but of course requires aeration and proper filtration. They grow rapidly up to a size of 12 inches. Of course the kinds and volume of feeding will affect the growth rate. One of the problems in keeping a fish with such an endless appetite is that in trying to keep him happy food-wise, you may pollute the water. At this point your Oscar is in trouble and may end up with a fungus problem. Feed him often, but only what he can devour in several minutes. Other live foods will also be appreciated. If you feed him small chunks of meat such as rate beef heart, again be careful not to pollute the water.

Chanchito Spawning

Q. I would like to ask a few questions about spawning the Chanchito or Chameleon cichlid.

1. What do you feed the fry?

2. How long does it take the eggs to hatch?

3. Can they be spawned at the size of 2 inches?

4. Could you give me some suggestions for planting and spawning arrangements?

Mark Carlton
Doraville, Georgia

Cichlasoma facetum

A. *1. The scientific name for the Chanchito cichlid is* Cichlasoma facetum. *The young fry, once the yolk sacs have been absorbed, should be fed newly hatched brine shrimp.*

2. About three to four days.

3. Cichlasoma facetum *are sexually mature at about 3½ to 3¾ inches.*

4. Although the Chanchito is a tough hombre, he makes an excellent parent, giving very careful attention to his young ones. The Chanchito fish is rough on plants, so it is best not to have plants in

their spawning tank. Give them plenty of room with rock formations, and some flat stones upon to which to lay their eggs.

Electrical Problem

Q. I'm sure this will not be the only letter you will receive relevant to your "noisy thermostat" explanation in the Jan. 1968 issue of *Tropical Fish Hobbyist*. While I would never question your knowledge of fishes, I plead special qualifications in this instance, since I am an electronic technician. Your explanation of the "half on, half off" condition is valid; however, the static on the radio (or on a television) is caused by the "half on half off" situation. A defective condenser is not the culprit . . . the buzz you describe is as a result of incomplete electrical contact between the points of the switches. This condition produces an electrical arc between the points. An arc is a tiny transmitter which contains virtually every wave-length in the electro-magnetic spectrum. This transmitter (the arc) is heard on the radio as static and seen on television as lines, etc. I'm sure the cleaning of the points will cure the static problem.

Carl R. Haslett
Imperial Beach, California

A. *Because your letter contains the clearest explanation that we received so far, we are publishing your letter, Carl. Modern day aquarium maintenance is very dependent upon electrical energy, so any knowledge acquired in this direction should be to the advantage of all aquarists.*

Planaria

Q. I am trying to get rid of small worms which have invaded my guppy tanks in large numbers. They are able both to swim throughout the tank and to crawl all over the inside glass. They crawl by alternately expanding and contracting. They are white and seem to have a tiny head. We have tried many treatments to get rid of them, but none has worked. We have 14 tanks, and they all are heavily infested. The fish seem healthy. We keep the tanks very clean and feed the fish lightly several times each day. Every now and then a guppy will eat one of the worms, but this does not happen often enough to reduce the worm population. Do you know what kind of worms these are, where they come from, and how I can get rid of them?

Willian E. Cartel,
Rocky Mount, N.C.

A. *The worm you describe is known as a planaria worm. It appears quite often in aquariums, coming in most often with live foods. Successful chemical treatment is both complicated and dangerous. If you let your fish get hungry enough, they will*

probably clean up the worms by eating them. Stop feeding your fish. After you see not a single worm in an aquarium, refrain from feeding your fish for just a few more days. This assures that the fish will eat any newly hatched worms as they appear.

Inheritance

Q. Recently I was presented with a beautiful male guppy who has a black spot on his gonopodium. He is not sickly, and has lately fathered several batches of fry. I would like to know whether or not I can produce a strain of guppies with that black spot, or is it an accident which cannot be inherited?

Pamela Barlow, El Paso, Texas

A. *During my many years of experience in raising thousands of guppies, I have occasionally discovered a male with that same spot on the gonopodium, but it wasn't always of black pigmentation; I have noticed that spot in other colors. The occurrence of this particular kind of marking may have nothing at all to do with inheritance.*

Continued from Page 7

of most egglayer fry. They stayed on the bottom of the tank and were very sensitive to light as was indicated by strenuous efforts to hide in the spawning medium when a beam of light was turned on them. Two days after hatching the majority were freeswimming and had become almost transparent in coloration.

As soon as hatching had started, an outside filter with a plastic foam sponge over the intake (to prevent ingestion of the fry by the filter) was set up for the tank. The purpose was to remove the fungus inhibiting chemicals, as these chemicals also tend to slow the growth of adequate amounts of the infusoria necessary for food. One half of a tablet of a dried infusoria culture was placed in the water. When the freeswimming stage was reached four drops of a liquid fry food were added twice daily. Approximately 5 days after the fry were freeswimming, brine shrimp nauplii and micro worms were fed. The young fish ate these greedily. At this time, a quantity of mystery snails were placed in the tank to consume uneaten food. Twenty days later, the fry began to show the characteristic colors of the adult fish, although they remained sensitive to strong light for a considerable time and did not begin to show themselves frequently until they were a month and a half old. At the age of 2 months they had progressed to a length of ½ of an inch and were as brilliantly colored as adult fish.

In summarizing the requirements for success in breeding the black neon a number of things should be stressed. First, the tank conditions must be as sterile as humanly possible. We have noted that the egg cases are easily breached by microorganisms in the water. Secondly, in view of the apparent sensitivity of the fry to light, it is quite probable that light is detrimental to the eggs and should be excluded from the breeding tank. Another point to support this is the markings of the adult fish, which indicate a natural preference to darker areas where brilliant colors are necessary for maintenance of the school. Thirdly, proper conditioning of the parents is very important and outweighs the need for rigid control of the pH and DH (hardness) of the spawning water. It should be noted here that positioning the spawning tank to catch the early morning sunlight will be helpful although artificial lighting will suffice.

Whether or not spawning these fish is attempted, you will find that they make a colorful addition to your aquarium. For the hobbyist who desires a striking pet without the sometimes-garish colors of many popular fishes, the black neon may be just the thing.

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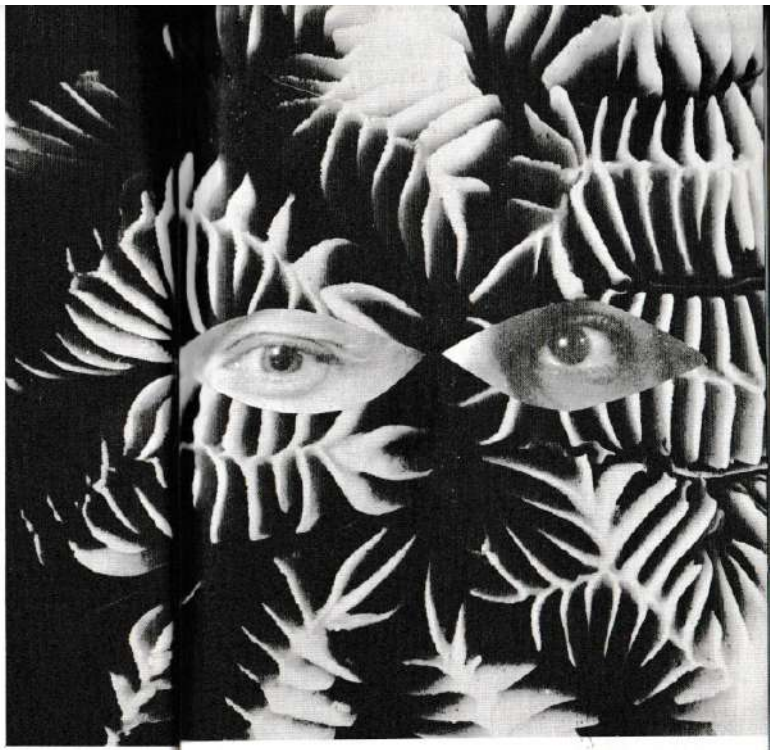
Keeping Marine Tropicals In Hong Kong

Monos are irresistible in a proper setting. And in Hong Kong **Monodactylus argenteus** are as often seen as one might see freshwater angels in the U.S.A. The Monos are particularly regal looking when they have reached their mature size of about 4 inches.



Although coral is abundant in the surrounding South China Sea, it is still rarely offered for sale in Hong Kong. Consequently the salt-water aquarists there, always have their eyes open looking for luxurious pieces suitable for decorating their aquariums. Coral is a marine animal belonging to the phylum **Coelenterata.** These tiny animals are colonial and secrete exoskeletons upon which the living part of their organisms rest.

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Supplement Your Fish Hobby—Collect Fish Stamps

BY CRAIG BARKER

Are you looking for a pastime to supplement your aquarium efforts? Something that would be different, but which would complement your main hobby—tropical fishes? Why not start what is known by stamp collectors as a topical stamp collection? In a topical collection one keeps only those stamps picturing his particular subject. For the reader of TFH it would be most apropos (and educational) to have a collection of fish stamps. Depending upon his interests, the hobbyist could collect either salt-water or fresh-water fish stamps. Stamp collecting, or philately, has grown tremendously in the past 5 years, and there are now many countries that have issued stamps featuring fish and other forms of aquatic life—at least partially to cater to topical collectors.

What does one need to start a collection of tropical fish stamps? The initial investment is surprisingly low. All that is really needed are some stamp pages, an album, some hinges, and stamps. At the present time no company makes an album for fish stamps, so you will have to use blank stamp pages. The first few pages may prove difficult, but soon one can be designing pages artistically with a minimum of effort. All of the above-mentioned supplies and stamps can be obtained from your local stamp dealer, and like your tropical fish dealer you will find him most helpful in getting you started on a tremendously rewarding and educational hobby.

There are many ways to mount and catalog your stamps. One of the most popular is to sort them by the issuing country. Mount each stamp or set of stamps from a country on a separate page, and then file them in your album in alphabetical order. Other collectors may want to mount them by species, putting all of one species on each page. Included on your stamp pages could be information on each species of fish and perhaps experiences you yourself have had with the fish.

Have you been wanting to keep a specimen of that rare—but—expensive butterfly fish? Did you know that you can get a set of stamps featuring five butterfly fish and more for less than a dollar and a half? Or a set of five marine species for less than 50 cents? Let's take a look at two sets of tropical fish stamps issued recently. (These sets feature marine tropicals, but sets featuring freshwater fishes are also common. One such set was featured on the cover of the August, 1967 issue of TFH.)

To most Americans the Ryukyu Islands mean nothing. However, when names of individual islands such as Okinawa are mentioned, vivid memories

As you review these appealing postage stamps from other lands, you probably are wondering why the U.S. doesn't pay a little more tribute to the beautiful aquatic world by utilizing some lovely fishes as subject material for United States stamps. Well . . . we're wondering along the same lines. In fact, we've got an idea . . . can you see your room decorated with a wallpaper you've made up from thousands of these stamps? Hey! Tell your wife to put that rolling pin down . . . we were only kidding!

of World War II are revived. It was on these islands that some of the costliest battles of the war were waged. Since the end of the war, the Ryukyu Islands have had a semiautonomous government under the administration of the United States.

Ryukyu consists of a chain of 63 islands extending from Formosa to Japan in the Pacific Ocean. Up until World War II, they were a part of Japan and, their modes of life and culture reflect that background. Since 1948 they have been issuing their own postage stamps, thought by many to be some of the most beautiful in the world. Starting in late 1966 the Ryukyu Islands issued a set of tropical fish stamps consisting of native marine fish which live on the coral reefs which surround them.

One of the Ryukyu stamps pictures the tomato clownfish, *Amphiprion ephippium*. Next to *Amphiprion percula*, this is probably the most frequently kept of the various species of clownfishes. It lives mostly among the tentacles of sea anemones, darting into their protection whenever danger threatens. A hearty eater, the tomato clown will accept almost anything from brine shrimp to dry foods, and has many records for longevity in marine aquariums.

A pretty, young specimen of the spotted trunkfish, *Ostracion tuberculatus*, is depicted on another of the stamps. Unlike its cousins the cowfishes, trunkfishes do not have horns, but possess a rounded head. Most trunkfishes, both Atlantic and Pacific species, can give off a poison when aroused or frightened. The poison can kill any life in the aquarium or container including the trunkfish itself. This is unfortunate, for the trunkfishes are often highly colorful and make interesting and unusual pets.

Perhaps the most expensive of marine aquarium fishes is pictured on a third stamp: the clown trigger fish, *Balistoides conspicillum*. The clown trigger fish is probably one of the better-known marine fishes, for it is pictured on the cover of Axelrod and Vorderwinkler's SALT-WATER AQUARIUM FISH. Seldom seen except in public aquariums, it would usually retail at over 200 dollars—that is when a specimen is available.

Butterfly fishes are pictured on the two remaining stamps. One is the long-nosed butterfly fish, *Forcipiger longirostris*. This fish uses its long snout to pick out food from between coral fingers and tiny crevices. It is found throughout the Pacific Ocean and around the Hawaiian Islands. The other is *Chaetodon ephippium*, one of the many other butterfly fishes that inhabit tropical marine waters.

In February, 1967, Poland issued a set of nine stamps picturing marine tropical fish. As in the Ryukyu series, the clown triggerfish and *Chaetodon ephippium* were featured on two of these stamps. *Balistaur undulatus* and *Rhinecanthus aculeatus*, both triggerfish, are Indo-Pacific in range. Triggerfishes are found in almost all tropical marine waters and, if acquired while young, they can become excellent pets. Triggerfishes can be trained to

take pieces of fish or shrimp from the end of a toothpick. Like some other species of tropical fishes, a triggerfish will rise to the top of the aquarium when its owner walks past. One word of caution, however, concerning triggerfishes—do not try to fool your pet by offering your finger instead of a piece of fish. Triggerfishes become very conditioned to receiving their meals at established times, and they don't really examine closely the meal that is being offered once they are "trained". In other words, you pet will literally bite the hand that feeds him. While they have small mouths, triggerfishes' teeth are sharp and their jaws are strong, so their bite can be quite painful.

Like their Atlantic relatives, both *Pomacanthus semicirculatus* and *Pomacanthus imperator*, two more fishes featured in the Polish issue, undergo coloration changes from their juvenile stage to maturity. These species—very popular with hobbyists—are usually available in the United States for about 20 dollars. Large specimens are sometimes available, but due to their size and the high cost of air freight from remote Pacific Islands, the price is usually quite high.

Of the same family, Chaetodontidae, as the two forementioned angelfish are three butterfly fish which are featured on the remaining Polish stamps—*Chaetodon melanotus*, *Chaetodon fasciatus*, and *Chaetodon melapterus*. These do not attain as large a size as the angelfish, and an 8-inch specimen is considered a very large butterfly fish. Of the three butterfly fishes mentioned, *Chaetodon melanotus* is probably the one most often found in marine aquariums. There are hundreds of butterfly fishes, and it is not unusual to receive new and different ones in a shipment of imported marine fish. Often price lists are received from dealers describing one butterfly as very much like another classified species but differing in some color or design.

Butterfly fishes have small mouths and are often very finicky eaters. If they are placed with more aggressive eaters than they are, they will approach the food with the hardiest of them. However, while an angelfish is eating five or six brine shrimp a butterfly fish will manage to devour only one. Allowances must therefore be made for these species to be sure that they do not slowly starve.

For less than a dollar and a half we have now added twelve different species of fishes (with two specimens of two of them) to our new aquarium-in-an-album. A collection of tropical fish stamps can prove an inexpensive as well as interesting companion to one's aquariums, and much knowledge and enjoyment can be derived from such a pastime.

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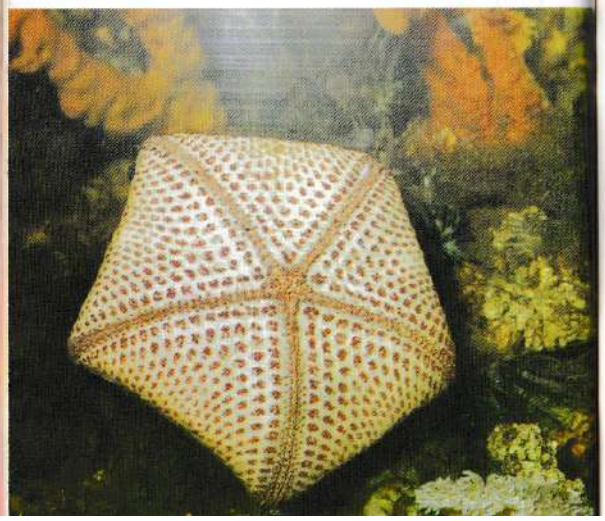
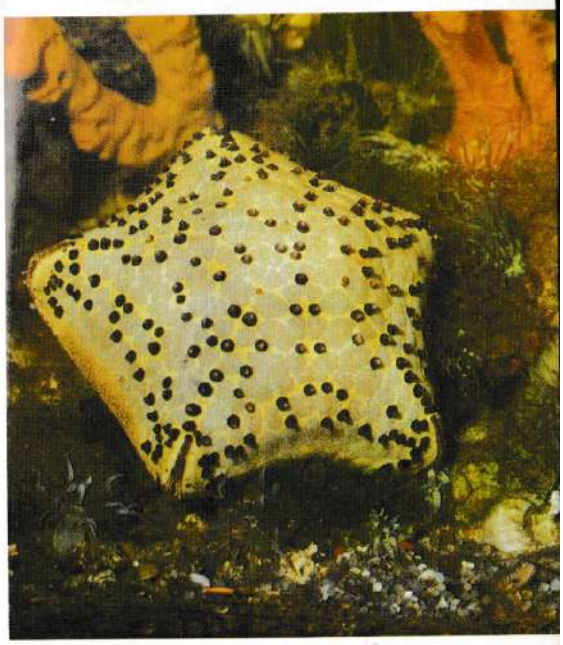
meanwhile a new eight-story building has gone up across the road, and there's none left in that room!

I've now come to the end of my account about my largely unaided gropings and experiments with various tanks. The old hands will shudder at my follies (the worst of which was when I dropped a crystal of potassium permanganate into a fresh-water tank, and saw an Angel swallow it and exhale pink clouds through the gills, though it lived to raise a family afterwards!).

Looking below at this pink peppered object that could easily pass for a lady's compact, one finds it hard to believe that this is really a living organism. And, as far as that object on the opposite page, don't run down to your local bakery and ask for a dozen, for chocolate cookies they are not; it is also in reality, a living thing. The marine invertebrate world is made up of the darndest, most fascinating, mad, mad, creatures — and the Hong Kong beaches have their share of these lovely inhabitants. The marine invertebrate in these two photos are members of the phylum





Echinodermata. This phylum includes starfishes, class **Asteroidea**, and sea urchins, class **Echinoidea**. Most members of both of these classes, possess "pinching organs" known as **pedicellariae.** These tiny bud-like forms vary in kind and consequently perform different vital tasks for their marine invertebrate including: the crushing of any larvae that might decide to take up residence upon the invertebrate; poisoning of enemies through the use of certain effective poison glands; capturing of small animal food by grasping, and then holding it till the mouth can receive this nourishment.

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Salts From The Seven Seas

By Alfred A. Schultz

Q. I recently saw, in a monthly magazine (not an aquarium magazine, by the way), a statement to the effect that "mussels, clams, barnacles and other mollusks" were favorite foods of fishes. I have no quarrel with the fact that these animals may be good food for fishes, but I am quite sure that barnacles are not mollusks. Are they?

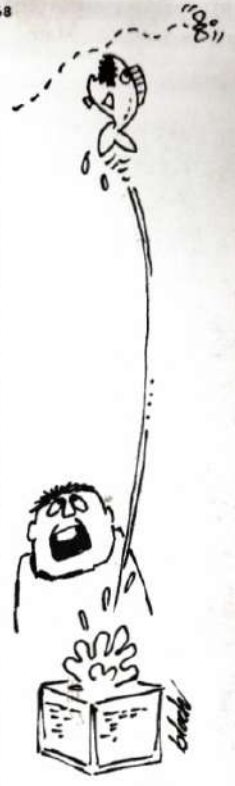
Robert Adler,
Alexandria, Virginia

A. No, they're not. They look to most people more like mollusks than like anything else, but they are crustaceans.

Q. A lot of my friends say that they don't keep salt water fishes because they are very expensive and that you need a lot of gadgets to keep everything right. Is there any way to avoid all this?

Bobbie Harris,
Detroit, Michigan

A. Many people who keep freshwater tanks don't care how bad conditions get in their aquariums; their freshwater philosophy being, that they can afford to allow their freshwater fishes to get sick and die because these fishes are not really expensive so that they can afford to buy new ones if their present fishes pass away. This kind of quick constant turnover in the long run costs money. But the initial relatively higher cost of the specimens of salt-water fishes (because they must be hand caught in the oceans) force the aquarist to be a little more careful with his aquarium maintenance so as to safeguard his investment. This way he won't take as many chances with his fishes. So maybe, in the long run, he's actually saving money by really trying to keep salt-water fishes. As for extra gadgets, this aspect of the hobby is always exaggerated. What is needed, are the basic equipment just as in fresh-water, and a thoughtful aquarist.



Nice try, Killer.

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The waters of the China Sea are rich with **Coelenterata.** And belonging to this phylum are these anemones, some of which can be found attached to rocks, to which the anemones have secured themselves. These sea-flowers are able to adhere tightly through the means of a pedal disc located at the base of their bodies; they can remain glue-tight to these rocks, and you can't budge them no matter how hard you try. But we wouldn't advise your being persistent in any attempts to remove them, for all coelenterates possess stinging cells called **nematocysts.** In this manner "nature" has created things that are pretty but not defenseless.

Like a magician waving his arms before his next great trick, this **anemone's** legerdemain is in the fact that it moves. Have you ever seen a flower walking? Well, this one does. It's locomotion can barely be seen by the human eye for it moves incredibly slow—4 inches an hour is considered fast for these creatures. But, over a long period of time, they can travel impressive distances. Various species of **anemones** accomplish movement in different ways including the releasing of that pedal disc and then proceeding to stealthily "walk" around on their tentacles!!

Contest Winners

Here are the winners of the **August TFH Photo Contest.** We were overwhelmed with the many fine entries, and frankly, quite surprised at the degree of technical ability shown in some of the photos. We loved 'em all, and we are sorry that we could only pick two as according to the contest rules. But there's always next month! Come on! Have some fun with a camera! So what if you make a few mistakes; there are very few pros around, besides, the only way to learn is by trying. The real reason **TFH** created the contest was to stimulate our average reader into trying his hand at aquarium photography. Get with it . . . the fun is in the doing! Don't be shy about being an amateur, even the great photographer Edward Steichen was once an amateur photographer. So let's have a look at your photos.

(Category I) Close-Up. Dwight Howard, Rochester, New York

(Category II) Landscape. Scott Bell, Sacramento, California