

July 1967

tropical fish hobbyist

DOMESTIC 35¢ / British Isles 2/6



**TROPICALS
WE SELDOM SEE**

tropical fish hobbyist

Vol. XV, July, 1967 (1967) No. 11

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cover
The fish on our cover this month is, quite obviously, a dwarf cichlid. It resembles several dwarf cichlids with which we are familiar. Yet, this fish was never identified. It came in with a mixed shipment and was sold before it could be named. Chances are that this species is fairly rare. Otherwise we would have seen many more of them, and they would have been identified for hobbyists a long time ago. There are lots of other reasons that many of the most beautiful of tropical fishes never or rarely get to pet dealers. These reasons include the fishes' sensitivity to shipping, aggressive natures, unusual water chemistry requirements, and any of a number of other factors. For more on tropicals that we seldom see in home aquariums, read the story that begins on page 92. Photo by Hansen.

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July, 1967

publisher's note

Every once in a while, when I think of the things that the hobby sorely needs, I wonder how long it will be until some scientist comes up with the answer to how to duplicate, synthetically, the nutritive substance that discus secrete for their young. Many people are getting their discus to spawn only to have them eat their eggs afterward. Such hobbyists finally get tired of this and decide to try hatching the eggs mechanically, as is often done with angelfish eggs. Unfortunately this method doesn't work with discus, and the youngsters die with disappointing regularity each time their yolk sacs become absorbed. It has been found to be necessary to let the youngsters pick at the body secretion of their parents and feed on this substance for the first days of their lives. How much simpler it would be if we could take a batch of discus eggs, let them hatch artificially, and then paint a slate slab with this substance! Then the youngsters could get the food they require in the proper quantity and never run into the danger of being eaten. And here's a further possibility: if the stuff works so well with discus, what's to prevent it from being a highly superior first food for other fish species, notably the other cichlids? Here's your chance to give the hobby a big boost, you scientists: analyze the scrapings from the skin of a discus (no, not a dead one!), and go to work trying to produce a similar substance synthetically. Sounds easy, doesn't it. Maybe it is, but I doubt it!

William Vorderwinkler

A Marine Collector's Paradise

BY FRANK WILLIAMS



July, 1967

The many islands and coral reefs off the coast of Madang, New Guinea, provide a collector's paradise for marine fish enthusiasts.

Almost all species of Pacific aquarium fishes can be seen among the many varieties of coral. One island in particular, Pig Island, has an unbelievable collection of exotic tropical fishes around its shores. The predominant coral in this area is the common variety of Pacific staghorn. Large sea fans and finger coral are also abundant. The staghorn coral forms a wonderful refuge for the fire clownfish, *Amphiprion ophippium*. The anemone that this fish usually lives in is small, seldom exceeding 6 inches across. They cluster together among the staghorn coral, to form one huge "anemone blanket". Off one island, they cover an area of some 30 square feet, and as many as 200 of these clown fish can be observed. The author has collected over 30 in less than half an hour. Sizes vary from 1/2 to 4 inches, and their beautiful red to crimson bodies with the brilliant white stripe extending through the eye, makes them a favorite with Australian aquarists.

The common clownfish, *Amphiprion percula*, lives in a very delicate anemone whose colors vary from purple to luminous green. This fish has an orange and white body separated by thin black lines, and it grows as

Left—*Amphiprion percula*, the common clownfish, staying close to the safety of a giant anemone. Photo by Robert Stroughton. Below—the purple-black and yellow *Centropyge bicolor*. Photo by Payson.

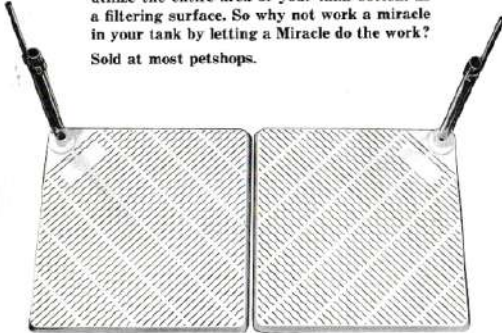


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large as 4 inches. The yellow and white striped clown, *Amphiprion sobae*, is quite a common sight, and usually inhabits a white to grayish colored anemone with long tentacles. The larger of these fellows will often swim out to meet an intruder in an attempt to drive him away, which makes capturing them all the easier. This fish grows quite large here, and specimens up to 5 inches long have been observed.

The rarest clownfish in these waters is the blood clown, *Amphiprion triocinctus*. Having a dull red body and thin white stripes, this fish inhabits the same anemone as does *Amphiprion ephippium*. Several specimens 6 inches in length have been collected.

One interesting observation is the three spot dascyllus, *Dascyllus trimaculatus*, living among the tentacles of anemones with all the boldness of the clownfish themselves. Its close relative the striped dascyllus, *Dascyllus melanurus*, is by far the most common fish off this coast. Looking much like *melanurus* is *D. aruanus*, which has a clear tail and slightly wider white stripes and is much less often seen. The only other *Dascyllus* I have seen here is a relatively drab one known as the smoky dascyllus, a white to grayish fish.

Although we have none of the beautiful queen and townsend angelfishes, which can be collected in the Atlantic waters off the Florida Keys, one particularly nice angel (*Centropyge bicolor*), having a purple and yellow body, can be collected in small numbers.

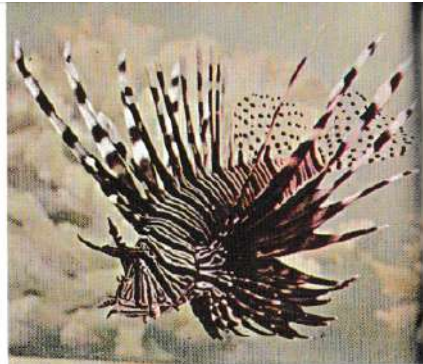
The common blue damsel, *Pomacentrus fuscus*, is particularly abundant and can be observed in schools of 50 to 100 quite regularly. However, this fish is quite evasive, and collecting specimens is by no means an easy task. The most beautiful damsel of these waters, is the yellow-tailed blue damsel, *Pomacentrus melanochir*, which has a velvet blue body with a brilliant yellow tail. This fish makes its home in the delicate corals of the bays around the islands. Many other damselfs frequent these waters, and their colors vary from a light purple to a faded red.

The waters inside the harbor contain many of the rarer, more-sought-after specimens. The exotic moorish idol, *Zanclus cornutus*, is quite common in sizes too large for the average aquarium. However, smaller specimens are occasionally sighted also. A similar fish, commonly known as heriocihus, is also a popular inhabitant of these sheltered waters. The beautiful butterfly cod or cobra fish, *Pterois volitans*, can be captured in sizes ranging from 1 inch to 1 foot. The larger scorpion species *Dendrochirus zebra* is the most common variety, with the more petite *Pterois radiata* being the rarer fish. These fishes seem to prefer the quieter waters and are seldom seen around the outside reefs.

The most brilliant wrasse of these waters, the red saddle wrasse, *Coris gaimardi*, must compare in vividness with virtually any marine specimens.

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The large *Dendrochirus zebra* is the most common of the scorpion fishes found in the area. Photo by Dr. Herbert R. Axelrod.

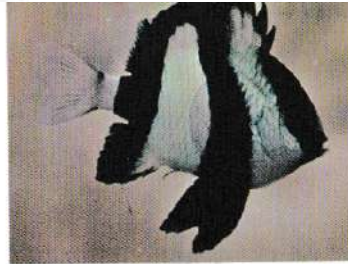


One of the most beautiful of all marines is *Pterois radiata*. It prefers the quiet waters of inside reefs. Photo by Hansen.

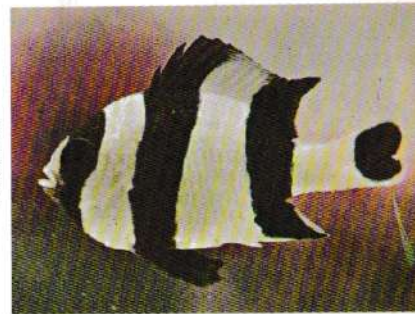


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Dascyllus aruanus is seen regularly, but not very often, in the area. Note its clear tail. Photo by Dr. Herbert R. Axelrod.



Dascyllus melanurus is, by far, the most common fish off the coast. Note the black coloration on the tail. Photo by Dr. Herbert R. Axelrod.



Coris gaimardi is the most brilliant wrasse in the area. The "saddles" on its back give it its common name, the red saddle wrasse. Photo by Payson.



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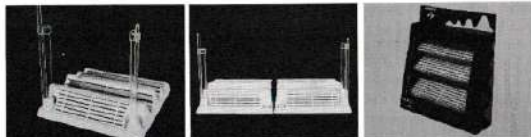
- 1 The new Miracle HiPower Undergravel Filter is about 1" lower in the back than the older model and has optional knockouts for stems to fit on either side.
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Above—a pair of Chinese half-striped barbs investigate their breeding tank. The female has just been put in. The male has been in the tank for slightly less than 24 hours. The female is the larger of the two. Below—less than an hour has passed, and the male is already beginning to drive the female fairly vigorously. This species is quite easy to breed.

An old favorite . . .

The Chinese Half-Striped Barb



Right—diving and breeding have begun in earnest. The actual spawning takes place close to the surface of the water. Here, the male alternately nuzzles the female's belly and shakes side-to-side with her. It is during the shaking that the eggs are laid loose in a shower. Below—the pair shakes in its last spawning efforts. Some eggs can be seen in the plank, but most of the eggs have fallen to bottom.

Capoeta semifasciolatus

BY RUDOLF ZUKAL
 Brno, Czechoslovakia
 Photos by the author



Its brilliant red body with white "saddles" makes it a much desired fish. It once took the author and a native assistant nearly an hour to capture one of these evasive fish.

A vivid butterfly fish with a silver body and rusty red tail region is the most common of the chaetodon family found here. This fish can be captured in both the harbor and around the outside reefs. An extremely unusual looking chaetodon, *Chaetodon citrinellus* is silvery gold with a black stripe extending through the eye. This fish also has an unusual oval-shaped body. Another particularly beautiful specimen found here is *Chaetodon auriga*. Many other chaetodons with colors ranging from all yellow to silver and black are also found; however, these are much rarer than those previously mentioned.

Unfortunately, according to reports received from Dr. C. W. Emmens, many of the chaetodons listed are very choosy eaters and do not live for any length of time in home aquaria. However, all other fish sent to Dr. Emmens have responded well to the changeover, and all but a few are living in perfect health within his tanks. This is true particularly of the clownfishes of which an estimated 150 specimens have been sent.

As in other tropical waters, there are many hazards to the marine collector off Madang. The worst problem in these waters are the schools of minute jellyfish. Swimming into these stinging invertebrates can be a very painful experience. The danger most encountered by the author is the deadly black and white banded coral snake native to these waters. Seldom exceeding 4 feet in length around the islands, this snake is well known for its highly poisonous venom. However, having a small mouth, it has been known to bite many victims without actually injecting venom. Nevertheless, this fellow is a gruesome sight, weaving its way in and out of the corals. Sharks seem to confine themselves to the deeper, non-coral areas, for the presence of coral would make difficult their normal preying efforts. The most gruesome danger in these waters is the deadly stone fish. This fish has a rough, uneven skin and cannot be told apart from the rocks in which it makes its home. A row of spines along its back, inject a very powerful poison, and stepping on this fish is almost certain tragedy. However, although all these dangers are present, the brilliant colors of the fishes to be collected here more than compensate the marine enthusiast.

Unfortunately, the North New Guinea coast has only two sizeable towns, Lae and Madang. This means that very few fishes are collected here, and the reefs are crammed with countless varieties of colorful fishes which are practically untouched. However, it is almost certain that as this area develops, the capturing and exporting of marine tropicals will become a popular pastime.

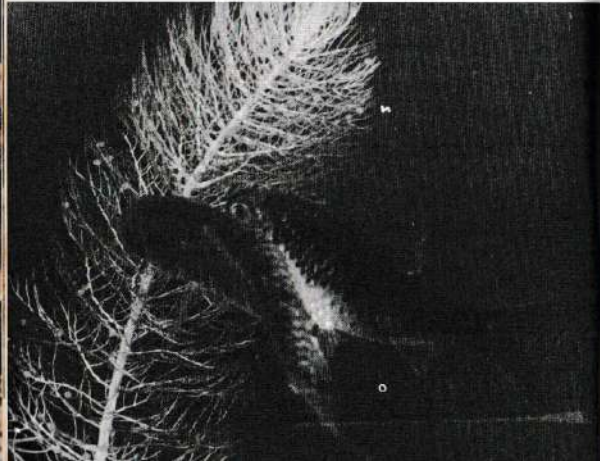
Tropical Fish Hobbyist

This peaceful, hardy, sun-loving fish is often avoided by aquarium hobbyists for unexplained reasons. Could it be its lack of attractive colors? In the right surroundings, properly lighted, its golden sparkle becomes evident. The male is a bit smaller in body dimensions and has deeper colors. These fish are old timers, having been imported into Germany as far back as 1909 from southeastern China, near Hongkong. In their home waters they are found in shallow places with little current, even in rice paddies.

Breeding them is unusually easy. They prefer a large, well planted and well lighted tank with low temperatures, about 68°F. As they are not particularly sensitive to having their oxygen content fall a bit low, aeration is not always necessary. Under ordinary conditions they are companionable, take all manner of food, and can be recommended for any aquarium.

The fish spawn quite easily when the temperature is raised to 74-76°F, using normal water and a tank of about 10 gallons in capacity. In the breeding aquarium one puts some bottom plants, or does not even touch the original planting, as I have done. In such a case, the fish spawn on the aquatic plants which grow near the surface. It is my usual practice to put in the male first,

Instinct draws the fish together into proper position for spawning.



A view from below the fish shows how their positions insure maximal opportunity for successful fertilization by bringing their sexual openings very close together.

and the next day the female. As soon as the female is introduced, the male puts on intense colors and begins to drive her vigorously. The position taken by the male is always at an angle under the female, trying to ram her in the ventral region with his snout. After about 2 hours the female tends to spend more of her time near the plants, where the male crowds her. In a side-by-side position they approach the water's surface.

They try this from several directions and then press against each other. Soon the eggs begin to come quickly. These eggs drift to the bottom, some adhering to the plants. Sometimes the fish shoot up through the surface and then fall back into the water. Spawning procedure is not always the same; sometimes the pair swims under a plant upside down to brush off the eggs, and sometimes the female lies on her side on a plant to wait for only a split second for the male to approach.

After the eggs are laid. (It takes 2 to 4 hours, and up to 500 eggs are laid at a spawning.) The parents should be removed. The fry hatch in 30 to 40 hours, depending on temperature, and then become freewimming on the sixth day afterward. At first, the youngsters stay close to the bottom. Raising them to maturity is a very simple task.

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Tropical Fish Hobbyist



Many hobbyists consider the chocolate gourami, *Sphaerichthys osphromenoides*, to be the "king of the gourami" because it is more of a challenge to keep in good health and color. Photo by Monser.

My Experiences with Chocolate Gouramis, *Sphaerichthys osphromenoides*

BY HANS-JOACHIM RICHTER
LEIPZIG, GERMANY

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July, 1967

What hobbyist who enjoys labyrinth fishes has not had the desire to keep chocolate gouramis? This was also the case with me. I had never seen them, just read about them. In July of 1955, a friend from Saarbrücken told me that in the next few days some specimens of this fish would be rolling in the direction of Leipzig. For years I had been waiting for this, and it looked as if it was finally coming to pass. Full of anticipation, I waited for the train to puff into the station. Then, in short order, I got the container which held the chocolate gouramis and some other species. The most important thing at that point was to get home as quickly as possible with the carton.

What a surprise when I first saw the living fishes! They resembled young archer fishes, and their color was an over-all dirty gray. My first reaction was that here indeed is an ugly fish. I could not even believe that these were chocolate gouramis. A few days before I had set up an aquarium of about 8 gallons for them, using rain water into which peat moss extract had been poured.

Gradually the *Sphaerichthys osphromenoides* became accustomed to this water. It took them about 3 hours to begin to become acclimated. Now that I finally had them in the tank, they did not swim back and forth, but just lay there where they fell. This is the way they remained until they needed some atmospheric air, which took just under a quarter of an hour. Then they swam up, gulped air, and remained just under the water's surface, just as motionless as before. This went on for the whole day.

Next morning all the fish had an even light gray color except for the fins, which seemed almost transparent. At a temperature of 86° F., a high temperature recommended by many books, the little fellows became more active and, after a few days, more colorful.

Meantime I acquired a newly built tank 50 x 16 x 13 inches, which was set up specially for the chocolate gouramis. I need not go into the details of how to set up a tank for fishes from Southeast Asia, which should be generally known and available for reference. After I had filled this tank with rain water, I filtered with an activated carbon and peat moss filter and waited for the newly planted plants to begin growing. Then I put the chocolate gouramis into this tank. The water temperature was 86° F.

As I could see no spawning activity after months, I raised the temperature to 92° F. I hoped that now what I thought to be really healthy-looking fish would become ready to spawn. It is well known that labyrinth fishes usually spawn better when the temperature of their water is raised. However, the chocolate gouramis did not pay any attention to this and refused to spawn. I did not even observe any courtship. The basic color of these fish was still dark gray at this time, and I asked myself where they arrived at the name chocolate gourami.

After several weeks, I was convinced that the increased temperature would not bring any success. So, I lowered the temperature once more. Again I

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looked into all the available literature and hoped for some kind of a hint. The thought occurred to me that my chocolate gouramis might have come from flowing waters.

First I put a power filter-pump on the tank, in which the water was about 8 inches deep. The outlet nozzle imparted a slight flow to the water. On an atlas rainfall map I saw that the habitat of the chocolate gourami gets a relatively heavy rainfall. From this I concluded that after prolonged rainfall the temperature in the flowing waters must sink abruptly. Why should I not try making the test of keeping my fish at lower temperatures for a time? I did this. After a few days the temperature in their tank was down to 73° F. Overnight I let the temperature get still lower, and sometimes in the morning the thermometer read 69° F. I figured that I was providing my chocolate gouramis with almost native conditions. However, I also had the thought that perhaps my little fish would not appreciate my good intentions. A few days later my worries were quieted, because my fish had changed completely. Their bodies were a dark brown. Not until now could I really say that they were worthy of their name, because the color was just like that of dark chocolate.

The golden bars and the almost white marking of the dorsal and ventral fins edges gave a nice contrast to the general color. Even the tail fin was now dark in color and reflected a bluish shimmer when the light hit it. The edges of all these fins were white in the female and red in the male. Also worthy of note is the short golden streak below the eye. All in all one can say truthfully that the chocolate gourami in its full colors is every bit as beautiful as many marine species.

What a surprise, then, to one who has seen the fish in all its glory to put the light on suddenly in the morning, come into the room noisily, or even put his hand in the aquarium for some reason or other! He will not even see the fish at first, because they have taken on a totally different color. They have become camouflaged and closely match the bottom. When he finally finds them, his first thought could easily be that they have died. He thinks this not only from their color but also from their behavior, because they lie flat on the bottom. Sometimes their fins are spread out stiffly and they rest motionlessly in a heads-up position in the tank. Only after watching for a time does one detect a very slight motion in the eyes.

So shy are they, that those who keep them should avoid loud noises and sudden movement when in the room with them. Because I had a sofa opposite the tank, in such situations, I comfortably stretched out and waited until their excitement had abated, a wait, I found, that could last up to about an hour. In this way, I could see one day how a pair began to swim about each other in the manner which is standard with labyrinth fishes, with stiffly spread fins. This always took place right at the bottom. The circles they

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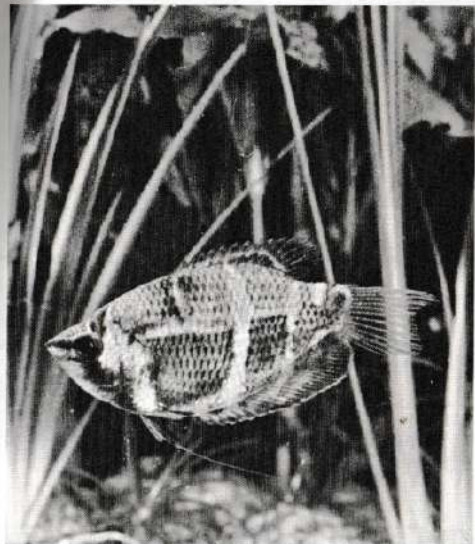


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The light bars on the sides of the chocolate gourami are good camouflage among long reed-like plants. Photo by Rudolf Zitel.

swam in always became tighter. After about six or seven times around there was a false mating. At this time the chocolate gouramis showed their full gorgeous colors.

Some days later, I was watching a female swim in front of a male with stiffly erect fins and her body turned upward and rocking. This rocking, which seemed to originate at the fish's center of gravity, was very rapid, and I had never seen it with any other fish. Every time the male swam away, the

An Open Letter to Hobbyists, Breeders and Hatcheries:—

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female swam behind him and began the rocking motion again. It seemed as if the male had lost interest in the female, because he constantly kept trying to make himself scarce. After a time, he did come to a stop opposite her, when she began the rocking motions once more. Then there were a few false matings, which no longer impressed me, having seen so many before. I saw a pair in their best colors swim under a small apogoneton plant, which was very bushy and grew from a patch of light-colored gravel. Here, below this plant, both began their false matings once more. I could scarcely believe my eyes when I saw that after four or five false matings eggs were beginning to appear. The male first broke away from the embrace and snapped up the eggs. It seemed as if the eggs were becoming a welcome addition to his menu. After this there were four repetitions of this egg-laying. The male gathered the eggs as before. After this he swam to the side of the tank, under the spot where the filtered water was being returned. Here he took up a position with his head under the flow of water. Then he swam among the other chocolate gouramis. I figured after some days, after having put in some infusoria every day, that I would see something of the youngsters, which I suspected were hiding in the dense cover of riccia. I waited and waited, all in vain. Meantime I noticed that another pair were spawning, but no trace of any fry.

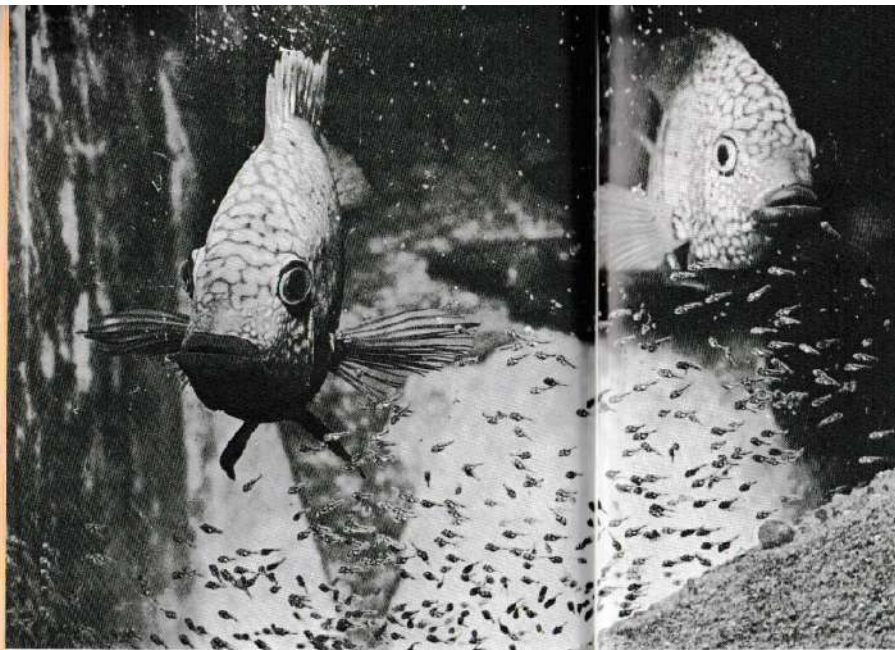
Now I am facing a riddle: I would like to know where the eggs and fry went. Probably they were eaten, but why? Was the disturbance caused by turning the light on and off at fault? If not, what else? These questions still stand unanswered and I am trying every way to find out why the fry never show up. I hope my fish do not become weak with age before I figure it out.

In conclusion I can say that the chocolate gourami is a fish which at this time should be in the hands of experienced aquarists, so that some of the outstanding questions can be cleared up. Unfortunately this beautiful fish is still seldom offered in most parts of the world.

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A pair of Texas cichlids, *Herichthys cyanoguttatus*, with their fry. Large pairs of fish of this species have unusually large broods, fry numbering several thousands at times. Photo by Marcuse.

The Texas Cichlid,

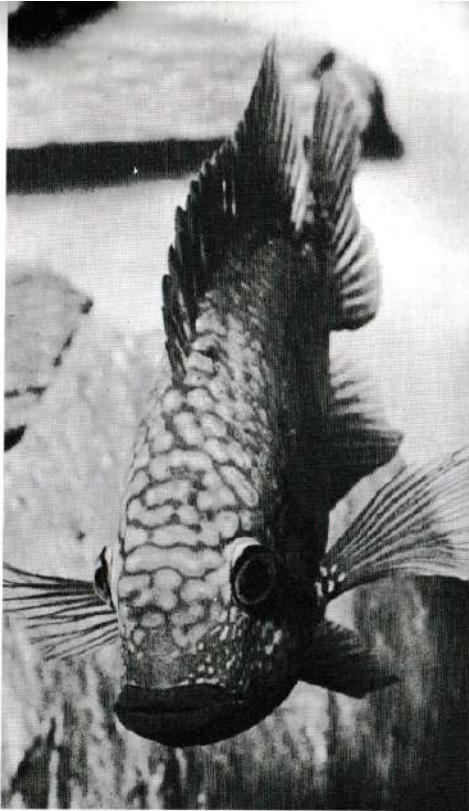
BY HANS-JURGEN KOPKE

No doubt the saying is familiar to you, that a prophet is without honor in his own country. People the world over are very much the same in this

Herichthys cyanoguttatus

GERMERING-BEI-MUNCIEN, GERMANY

respect. To arouse our interest it seems, a thing must be unfamiliar and from a foreign land. To put this on an aquarium hobbyist basis, in Africa they



Texas cichlids are beautifully marked, particularly when they are ready to spawn. Its alert expression and well spread fins tell of this fish's good health. Photo by Marcuse.

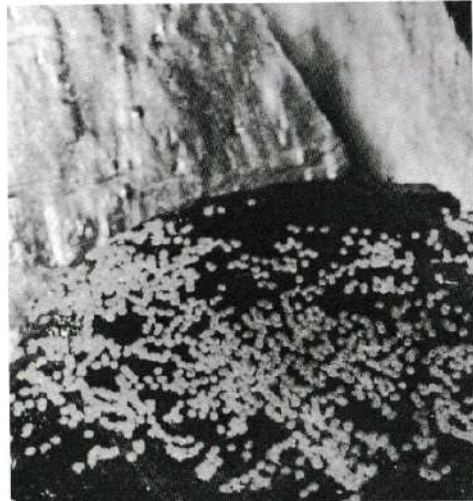
would probably be inclined to favor fishes from America and Asia, while people in Asia would look for fishes from America and Africa.

In Europe there are many attractive and interesting native fish species as well, but what European would want to keep them? A sport fisherman here in Europe would know more about the native fish fauna than an aquarist.

Surely you want to know why I am writing all this. Well, because my subject is a fish which is not very common in Europe. It is native to North America where TFH is published and enjoys its widest circulation. I am suggesting that these readers give this particular fish a try even though it is one of their native fishes. Of course, we in Europe appreciate the fish.

This lovely fish, in my opinion one of the most beautiful cichlid species,

The eggs of a pair of Texas cichlids virtually cover large areas of this rock. Photo by Marcuse.



Tropical Fish Hobbyist

occurs in streams and lakes in Mexico and Texas, principally in the Rio Grande and its tributaries. Brownsville, Texas, is where the type first named was found.

In its natural waters and in large aquaria, *H. cyanoguttatus* attains a size of 12 inches. In the Berlin Aquarium a male attained a size of just over 11 inches and a weight of almost 1½ pounds in 7 years. But this particular fish was an outstanding attraction in one of the best-stocked aquariums in all of the world. In our home aquarium we must consider 6 to 8 inches as the top size our Texas cichlids will attain.

Naturally *H. cyanoguttatus* is a true cichlid with all the cichlid faults often mentioned in books, such as being quarrelsome, digging big holes, killing plants, etc. But are all these really faults? Anyone who is well acquainted with these fish would hesitate to agree. As every aquarist knows, cichlids are among the most intelligent fishes and are all individualists. For this reason we find different behavior patterns in different individuals of the same species. Naturally there are specific characteristics, but nothing can be generalized . . . not even their breeding habits or their manner of taking care of their young.

About 4 years ago I got my first *H. cyanoguttatus*. They were youngsters, about 1½ inches in length, but gave only a weak indication of the beauty that they would later develop. The turquoise was far from the glowing intensity attained by mature specimens, and the spotted markings were not so numerous as they would soon be. The fish did not grow very fast, but within a year they were 4½ inches long. At this age, one pair spawned on an unsheltered rock in my 150-gallon community tank. At this time there were many other and much larger cichlids in the same tank. The female fanned the eggs vigorously while the male took care of driving away the other tank-mates. I could not observe any great preparations like a lengthy courtship and excavation of hollows on the bottom this first time. Surely the youth of the pair plus the constant disturbance by the other fishes were the reasons. Both partners showed constant breeding colors. They became an intense black, leaving only a light triangle from the upper jaw to the first dorsal fin ray. I will return to these breeding colors again.

Next day the spawn had disappeared. The female fanned the rock anyway, even with the eggs gone. This is something I have never seen or heard of before. The male resumed his normal colors and swam about unconcernedly. I do not think he was responsible for the disappearance of the eggs. Surely some of the catfishes had a feast in the dark. In any case, what the books say seemed to be confirmed, that *H. cyanoguttatus* do not take good care of their broods.

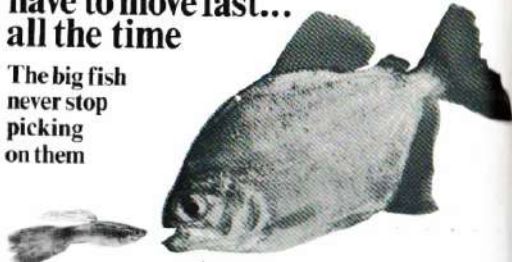
Later I gave the pair their own 40-gallon tank. After only 2 days, both partners busied themselves excavating hollows and polishing rocks. They permitted themselves only a few interruptions, which were taken up with



A Texas cichlid parent fans the newly laid eggs dutifully. Photo by Marcuse.

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courtship activities. After a time things were reversed. The shoveling gave way to always-more-vigorous courtship. They made imposing motions by rocking their bodies and swam near the bottom with widespread fins. Finally they tried to entice each other to the chosen breeding place. About a week passed before the chosen rock was covered with about 500 grayish-white eggs. The youngsters of this species hatch out after 3 or 4 days, depending on the water temperature. At 75° F. incubation lasts about 85 hours. The thermometer can be allowed to climb as high as 86° F. without a care, the only result being quicker embryonic development. On the other hand, this species can withstand temperatures as low as 50° F. without damage.

The fry require from 5 to 8 days to absorb their yolk sacs. This naturally depends on varying water temperatures. At 75° F. the interval between hatching and freeswimming is fully 8 days.

The adults' breeding colors never ceased to fascinate me. I was often able to see pairs leading their young around in tanks in the Berlin Aquarium,

A close look at some Texas cichlid fry only a day after they become free swimming. Note their bulging stomachs: they are being well fed. Photo by Marcuse.



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always in their most beautiful colors. My young pair that spawned in the community tank was colored just as beautifully. Now, in a separate tank, however, they remained unchanged, showing none of their otherwise characteristic spawning colors. What could be the cause? The answer to this puzzle was soon found. When they led their brood about and I approached their tank too closely, both came toward me with widespread gill covers and in a matter of seconds assumed the colors which I had formerly seen. When I went away and the pair calmed down, the colors faded just as quickly. So, in the community tank, where they had constantly felt threatened, they were always in high color.

One would be forced to assume that the spawning colors of fishes serve to show their willingness to spawn among their own kind, make the work of leading their brood easier (because the youngsters react more readily to colors and optical signals), and show other fishes the willingness to fight to protect eggs or fry.

Parent Texas cichlid with tiny, newly freeswimming fry. Photo by Marcuse.

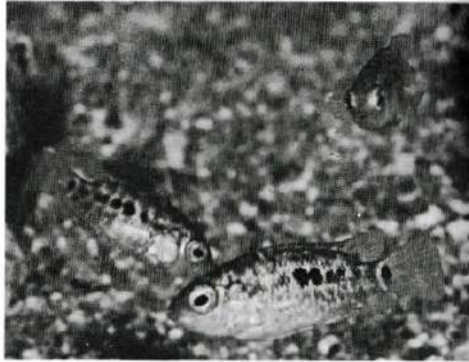


Parent Texas cichlid with 2-day-old fry. Photo by Marcuse.

As I have given the count of eggs to be about 500 in one spawning, I would like to add here that later spawnings amounted to 1000 or more; with the large pairs in the Berlin Aquarium an estimate of 3000 would not be far from the actual figure. Therefore, *H. cyanoguttatus* is one of the most productive cichlids.

Unfortunately this gorgeous fish is no longer to be found in large numbers in Germany. The blame for this rests not only with the small circle of cichlid enthusiasts, but also the fish's vulnerability to diseases. We speak here of a distinct *Herichthys* disease. The symptoms are found only in this particular species. Large red swellings begin to show around the base of the pectoral fins and spread all over the body. These later become milky

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It is some time before the young, growing Texas cichlids take on the full adult body-color pattern. Photo by Lawrence E. Perkins.

white and usually drop off. Often the disease becomes so severe that the fish is entirely covered with these ugly lumps. The affected fish stop eating and then quickly become emaciated. One such fish which was examined by Prof. Reichenbach-Klinke showed tuberculosis and ichthyosporidium. It could not be definitely established if one of the two or both together caused formation of the lumps.

Naturally, young pairs are considerably more active than older ones. I wanted to provide good spawning photos for this article, so I gave my friend Gerhard Marcuse a pair of fish that were between 3 and 4 years old, telling him that within a week their time would come. This was quite a mistake, because it was more than 3 weeks before they actually spawned.

In closing, it should be said that the sexes are not easily distinguished. Somewhat longer dorsal and anal fins are definitely not a sure sign of maleness. Often, however, there can be seen on a male about 4 inches in length the hint of a lump of fat which will appear later on the forehead. But this lump is apt to become less prominent or to disappear after a few generations in male offspring.

I envy the hobbyists of the southern part of the United States their ability to find this, my favorite fish, in their local streams.

Why Scientific Names?

BY FREDERICK J. KERR

Polichinellobarrorecomicburlescomagicianus. That about sums up all the objections to scientific names. This name is long, hard to pronounce, impossible to remember, and meaningless to most of us. Certainly this particular name, that of a crustacean, not a fish, is all those things. Even a biologist would admit that it is silly. But most scientific names are none of these things, and many aquarists have found them helpful tools and aids in their enjoyment of the hobby. Unfortunately some aquarists have gone off the deep end and misuse names. It is the purpose of this article to help the non-user understand, and even enjoy, the use of scientific names and to show the misusers how they are erring.

Scientific names perform the same functions that any names do. One of the most important is simply to label. Once everyone agrees that a particular word stands for a particular kind of fish, we can exchange experiences and knowledge about that kind of fish. For the scientist this is especially important. If a fish's name is uncertain or unknown, the knowledge gained about it is of little or no value, for it cannot be properly catalogued until the fish's name is determined.

Why don't scientists use common names since they serve most of us very well? Outside of the important fact that not all scientists speak the same native language, there are a number of reasons. For one thing, the same common name may refer to two or more kinds of fishes. For example the name "butterfly fish" is used for a fresh water fish, *Pantodon buchholzi* and a large number of saltwater fishes of the genus *Chaetodon*. Some common names may also suggest that various fishes are closely related when they are not. For example the blue gourami (*Trichogaster trichopterus*), the croaking gourami (*Ctenopoma vittatus*), and the dwarf gourami (*Colisa lalia*) all belong to different genera. On the other hand, common names may fail to show that two species are closely related as in the case of the swordtail (*Xiphophorus helleri*) and the platy (*Xiphophorus maculatus*), members of the same genus.

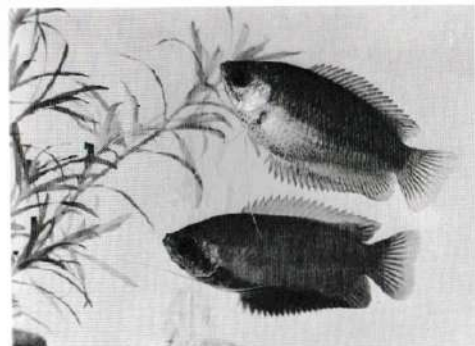
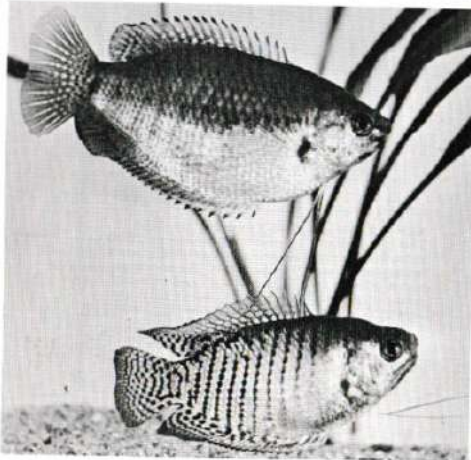
Assuming that we are willing to admit that scientific names do have their advantages, how come scientific names are such strange looking things to the average aquarist? Scientific names, like Topsey, just grew. Back in olden days everyone who could read did it in Latin. In fact many ancient scholars could not write their native languages. When it came to describing the flora and fauna of a region, the naturalists took to writing Latin sentences which came to pass as names. The common butter cup was known as *Ranunculus calycibus retroflexis pedunculis fulcatis caule erecto foliis compositis*. John Ray, an early English ichthyologist, called the turbit *Rhombus maximus asper non squamosa*. After a time biologists came to the conclusion that

polynomial names were too clumsy and decided to sacrifice the descriptive advantages of the long names for the convenience of the binomial, a name with two parts. Thus the butter cup became *Ranunculus belluosa* and the turbit became *Ptilia maxima*.

That is why nearly all aquarium fishes are known by a two-word name. Without exception, the words in the name are Latinized. This does not mean that all the words themselves are Latin. Far from it; there are nearly as many Greek words as Latin, and, not infrequently, the scientific name is made from names of people, places, and things. In fact the scientific name can be, but rarely is, an arbitrary string of letters with endings like Latin words.

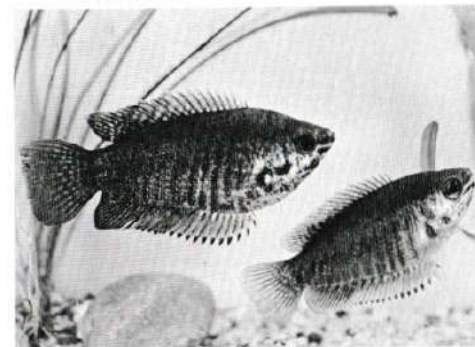
Let us look at the parts of the scientific name of the swordtail, *Xiphophorus helleri* Heckel. Note that the name itself is italicized. If it is written in long

The most popular member of the genus *Colisa* is the dwarf gourami, *Colisa lalia*. You can tell that the two species to the right are closely related to both *C. chuna* and each other because they have the same generic name, *Colisa*. Photo by G. J. M. Timmerman.



Colisa chuna, the hobby dwarf gourami. Photo by Milan Chvojk.

Colisa fasciata, the giant gourami. Photo by G. J. M. Timmerman.



hand or typed it should be underlined. This is done to make the name stand out in text so that a person scanning an article can quickly see if it deals with a fish in which he is interested. Also notice that the first letter in the first word, called the generic name, is capitalized while the first letter in the second, or specific, name is not. The name following the scientific name is the name of the scientist who first described the fish. It sometimes happens that a later scientist will examine a fish and decide that it does not belong in the genus that the original author selected. An example of this is the scientific name of the guppy, which was originally designated *Poecilia reticulata* Peters. The fish was later transferred to the genus *Lebistes*. To show that a change has taken place, the name of the original author is placed in parentheses after the name: *Lebistes reticulatus* (Peters).

In addition to giving the aquarist the key to finding information about a particular fish, the scientific name shows relationships. When two species have the same generic name, such as the platy (*Xiphophorus maculatus*) and the swordtail (*Xiphophorus helleri*), the aquarist knows that the fishes are derived from a relatively recent common ancestor. He also knows that, within limits, the conditions needed by one will probably be needed by the other. If he is interested in hybridization, the aquarist knows he is more likely to get a successful cross between two species in the same genus than between two species from different genera.

Many readers will think I have glossed over a major objection to scientific names when I mentioned the name change for the guppy. Just to show I have not shirked my duty, let me say that ichthyologists decided in 1962 that the name should be changed back to *Poecilia reticulata* Peters. The scientific names of fishes do change. They change for a number of reasons. The name of the guppy has changed because different scientists have varying opinions. One scientist will think that the guppy is enough unlike the members of the genus *Poecilia* to put it in its own genus, but another scientist will not. Which opinion prevails tends to be decided on the basis of the reputation and influence of the scientists involved.

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Another reason that names may change is the fact that two scientists may name the same fish. The best known example of this occurred in the naming of the cardinal tetra. One ichthyologist named it *Chirodon axelrodi* at almost the same time that two others named it *Hyphessobrycon cardinalis*. Needless to say there was a great confusion over which name to use. The International Congress of Zoological Nomenclature finally said that the name *Chirodon axelrodi* had priority because it was published a day sooner. Most authorities accept that name, but some, for personal reasons largely, still use the other name. Many of them justify this by saying that the problem was not one of which name was first published, but which one put it in the proper genus.

The names of aquarium fishes change for still another reason. When a new fish is imported, importers frequently do not take time to have the fish scientifically identified, but, needing a name, they make one up or find a description of a similar fish and use its name. As a result, when the fish is properly examined, its name, which did not belong to it in the first place, must be changed. In general, scientific names change very slowly, and it is doubtful that an aquarist will know any single species by more than two scientific names in his lifetime.

One of the biggest objections the scientific-name-shy aquarist raises is that of pronunciation. Most of us do not care to be caught mispronouncing a word, because it is embarrassing. There are many excellent references that give phonetic spellings of the scientific names, among them the *HANDBOOK OF TROPICAL AQUARIUM FISHES* by Drs. Herbert R. Axelrod and Leonard P. Schultz. The unabridged dictionary is helpful in determining how to pronounce the names of many of the more common genera.

It should be mentioned that there are no hard-and-fast rules for pronouncing scientific names. One scientist will pronounce a name one way and another will say it differently. Who is right? Both. Once you learn to pronounce a name, don't become dictatorial and think that yours is the only right way.

After this buildup for scientific names, let me caution you not to overuse them. There is no quicker way to become a bore than by using a scientific name when a common name will serve as well or better. The common name is generally best used when there is no doubt as to what fish the name refers to. If, on the other hand, the conversation turns to a group of fishes, it is probably simpler to say "the *Xiphophorus* species" than "platies and swordtails". In some cases there are no widely accepted common names for a fish. In this case the scientific name is best used. Whether common names or scientific names are used, suit your use to your audience. There is no quicker way to confuse a beginner than by drowning him in a gush of scientific names and no better way to be labelled amateurish than to use a common name for a fish that doesn't have one.



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MAIL CALL

By William Vorderwinkler

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Betta trouble

Q. I have had a male betta in my tank for quite a while. Recently, I purchased a pair of black mollies for the tank. Immediately after I put them in, the betta attacked them. I removed the betta, placing him in a tank by himself in order to save the mollies. He has never acted this way before, as he has gotten along well with the other fishes. What could have caused this, and is there anything I can do about it?

Edward Guterman,
Woodhaven, N.Y.

A. This is a problem for which there seems to be no answer. Of course, you could think like a betta and reason that the intruders are keeping a female away from him, and his instincts tell him he wants to spawn. Probably it is just the intense black color of the mollies that annoys him, and he gets irritated to the point where he attacks them. The only step you can take is to continue to keep them separated.

Heaters

Q. I am writing in reference to a question you answered on p. 53 of your January 1967 issue. While I agree that Mr. Crisp of Wimbledon should have realized that by the term "heater" you in America mean heater-thermostat

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unit, you and Mr. Reed are just making an assumption that what is practice in America is so in England. In this country I can assure you that the word

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"heater" means only that. If you wish to check in one of our aquatic magazines you will see that our retailers make a clear distinction between heaters and heater-thermostat units. I would also like to point out that it is usual here to use a thermostat and separate heater in tanks 3 feet and over in length. This is not regarded as old-fashioned, and we have an excellent range available.

J. E. Brown, Wiltshire, England
A. Perhaps, Mr. Brown, we have jumped at the conclusion that just because a thing has been used for a long time, it is old-fashioned. That is an American trait, and we are Americans. But I will say one thing: I have used both systems of heating a tank, and consider the combined heater-thermostat units as not only considerably newer, but better. From long experience I advise this: before you condemn a thing, try it. Because a thing is accepted practice, that does not make it the only or the best practice.

Goldfish
Q. I've had three goldfish for a year and a half. One was gold and black, but now he's a dull gold. Is this from an unbalanced diet and lack of sunshine or both? Could you tell me what type of food to feed my goldfish?

Denise Kalinak, So. Bound Brook, N.J.

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A. People who raise goldfish often wonder what is wrong when their fish change color. Young fish often have black patches for a long time and then lose them when they grow bigger. This is not a result of poor health, just one of the things that happens when they grow up. As for their diet: goldfish are not at all fussy eaters. Give them a variety of dried foods, with an occasional treat of live or freeze-dried food.

Freeze dried worms... a food?

Q. I'm a student at the University of Massachusetts. Besides being an avid aquarist, I also have a constant need for money, as does the average college student. While feeding freeze-dried worms to my fish a group of roommates came in and promptly bet me 5 dollars that I wouldn't eat one cube of tubifex worms and drink a cup of aquarium water. At the present time I am 5 dollars richer. Perhaps I am the first human being to benefit from these new freeze-dried worms; as for their taste... YECHE!

Mark Rosenfeld, Amherst, Mass.

A. About 20 years ago, there was a big fad among college students of mallowing live goldfish, and now it looks as if you might have started a new one. If you are worrying about any effects they might have, you are probably safe, as the freeze-drying process effectively kills virtually all bac-

teria. As for the taste, I've heard no complaints so far... from the fish! Personally, I seriously doubt that they will ever replace freeze-dried strawberries in breakfast cereal!

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there is an entire gray area around these holes (usually about five or six). All in all the fish have from three to twelve of these gray areas with holes in them. The gray area keeps increasing in size and one of the fish has an area in the center of his forehead about 1/4 inch in

diameter. I have tried a salt bath treatment, but nothing improved. I also took them out and put mercurochrome on them, but nothing happened except that my husband and I got soaking wet. These fish are in a 50-gallon tank and are fed bits of cooked chicken hearts, shrimp, and crab. The temperature is 73° F., pH 6.8; the fish are 1 1/2 years old.

Mrs. Dorothy Koopmann
New York, N.Y.
A. I have heard of a similar disease causing havoc with the discus species. Recently I talked with a man who had a cure for this that was simplicity itself: When he saw that his fish were getting it, he merely raised the temperature and it

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disappeared! Your fish are getting a slow temperature in any case: raise it slowly until it gets around 80°F, and keep it there until the areas disappear. It's worth trying, although I cannot vouch that it will work on Oscars as well as on discus.

Candiru
 Q. I had originally intended to write this letter to say that Col. De Lacerda, in his article printed in T.F.H. March 1967, was crazy to think anyone would believe that a fish could swim up a urinary tract. May I apologize for doubting his

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word! Last night while reading a book on fishes published by Time-Life, Inc. I came across a mention of the candiru, a small South American catfish. This fish does indeed swim up urinary tracts, and once it is inside the bladder it begins to suffocate. In its struggles the catfish erects its sharp spines on its gill covers, resulting in agony for the victim and a need for surgery if the catfish is to be removed.

LADONNA Darling, Reno, Nevada
 A. I have seen these little catfish in their native streams, but never had I personally heard, before Col. Lacerda's article, of them swimming up a stream of urine. I believe that they enter a urinary tract if they have access to it in the water, however, and there have been many cases on record where they had to be removed surgically. On the occasion that I saw

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then, I was sitting in the water sorting fishes that we had collected. When I found out what they were, I immediately stood up to a less comfortable but safer position.

Elephant nose electric organs
 Q. Recently I purchased an elephant nose (*Gnathonemus petersii*). I know that he possesses some electric organs, but I would like to know if they are located in the caudal section. Also, how much electricity do they produce? If he uses these organs, does he do this to sense his environment? Another thing that arouses my curiosity is that if his nose is used for locating his food, is there a discharge of electricity from this? Are they blind or do they have good eyesight?

Ron Alexander, Muncy, Pa.
 A. It's amazing how little is actually known about the electric organs of the elephant nose. Authorities agree that they have them, but do not tell us where they

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are and how much voltage they produce. They tell us that the amount is very small, especially for young specimens. We are also kept in the dark as to their use. My

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guess would be that they are strictly a defense mechanism. They discharge when another fish tries to swallow them, causing the fish to change his mind quickly. The elephant nose is largely nocturnal, and food is not usually located visually. The "trunk" is used for grubbing in the bottom and is useful in smelling out what is good, but I do not think the electric organs are involved to any extent here. Their eyesight is about normal.

Sick fish
 Q. I have one fairly large nebradanio and up to a few weeks ago it was one of the healthiest fish in the tank, but now all it does is lie on its side on the bottom. The fish looks as though it is in pain, and I don't know what to do for her. One of her ventral fins is obviously bent in the opposite direction from

what it is supposed to be, and the only thing I think could have caused this is that it might have gotten caught between my inside-the-aquarium beta display tank and the side of the aquarium. Could you please tell me how to help the fish and how to prevent it happening to my other fishes?

2. I have one female beta that is constantly lying on her side. She has been doing this for quite some time, but she's still alive! Also when she tries to swim, she swims lopsided and can only do this for a moment. Is this normal? Is it a disease or is she just getting old?

3. Do you know of any dealers that sell fish at retail prices by mail?

Benjamin Mitchell, Old Bridge, N.J.

A. 1. A fish, they tell me, feels very little pain, and you do not need to worry

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overmuch about your fish suffering. I would segregate this fish and give it very clean living conditions; if what happened is a result of an injury, it may heal in time.

2. This fish is probably the victim of a partial paralysis and may live for quite a time before dying.

3. The only firm I know of that retails a full line of tropical fishes by mail is the Aquarium Stock Company, in New York City and Los Angeles. Of course, some times of the year your order may be delayed by bad weather. Don't blame this on the shipper; he is merely trying to get the fish to you in good shape. You'll find Aquarium Stock's address in their ad on the back cover of this magazine.

Jack Dempsey

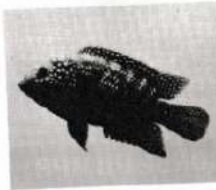
Q. 1. I bought a large fish (about 5 inches) for \$5. The owner of the pet-shop told me it was a Jack Dempsey. I think it is some kind of large cichlid. What do you think? What do you think of the price?

2. I would like to start a saltwater tank, but the only extra tank I have holds only 2 gallons; what fish (if any) should I keep?

Bill Peters,
 Wappingers Falls, N.Y.

A. 1. A Jack Dempsey is a large species of cichlid. Its scientific name is *Cichlasoma*

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biocellulum. What do I think of the price? The same that I think of any fish price: depends on where it is bought, how rare it is, what condition it is in, how much of a demand there is for it, and any number of other things. The important thing is, is it worth its price to you?

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Kribensis

Q. 1. I recently bought a pair of *Palmatochromis kribensis*. They are now about 5 1/2 inches long. Is this unusual?

2. How do you sex blue acaras?

3. Do you know of anybody that wants to sell unavailable back issues of TFFH or fish books? They can send me a list of mags and books and I will send a letter back.

4. Are humidifiers good or bad for aquaria?

Randy Harfell, 847 Superior St., Benton Harbor, Mich. 49022

A. 1. It certainly is, if your identification of them is correct. About 3 1/2 inches is the maximum size for males and about 2 1/2 inches for females. Our own EXOTIC TROPICAL FISHES gives a size of 3 1/2 for males and 2 1/2 for females.

2. Don't try to sex young fish; they look just about alike. In a grown pair, the male has longer, more-pointed dorsal and anal fins. The female is slightly smaller and has shorter fins.

3. I have added your address to your name; the rest is up to the readers.

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By Paul Hahnel

Females have only a few babies at the beginning, and the babies are frequently very weak.

3. Water on the slightly acid side seems to be better, at least from my experience. Water on the acid side is beneficial to guppies and many other fish species. Another thing, bacteria find the acid condition not to their liking, and for this reason the fish will have a better chance to stay healthy.

Tail-splitting

Q. 1. I have a beautiful pinkish lavender male guppy. He came from my own

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Breeding problems

Q. 1. Do male and female guppies have to be separated when they are 1 month old?

2. I've found that by not separating them the females get their babies at too early a stage and die when having from 2 to 5 babies, or it is that these females are too weak to have fry at such an early stage? What do you suggest I do?

3. Do baby guppies thrive better in alkaline water or in acid water?

Garry Oyen, Cowichan Station, B.C., Canada

A. 1. Most guppy breeders separate the sexes; I advise that this should be done by the time the guppies are 6 weeks old.

2. The usual age to breed the females is 3 months. It is known that very young

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breeding, and he is the same color all over. I know he isn't an albino as he has black eyes. Is this a new strain?

2. Is it necessary to remove baby guppies after they are born? I have plenty of floating plants in my guppy tank.

3. I just can't seem to keep my guppies' tails from splitting. I've tried everything. How come I've had no success?

Kathy Montgomery, Hazelwood, Me.

A. 1. Sometimes mutations appear in a strain of guppies. Try using this one for breeding with a female from the same litter. This is how the different color strains are developed.

2. If you have plenty of floating plants and feed properly, you should have no problem of having your babies eaten up.

3. There are more than a dozen

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reasons for this occurrence. The most common is that if the aquarium water gets too old it will be overloaded with chemicals and the fins begin to split.

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By Alfred A. Schultz

Q. This summer I visited the Sea-O-Rama of Galveston, Texas where I met Mr. Kelly, the curator. After a brief talk with him I decided to start my own saltwater aquarium. What size tank would I need to accommodate the following: one parrotfish (8-12"), four blueheads (4-5"), two queen angelfish (3"), two four-eyed butterfly fish (4-5"), two rock beauties (3"), two Spanish hogfish (3"), and one sea anemone (8")?

2. Do you know of anyone successfully keeping saltwater fishes (for any length of time (longer than 2 months))?

Mrs. Joe Davis, Tulsa, Okla.

A. 1. You would need at least a 250-

gallon tank for all of the fishes you mention. Even then I would wonder if that would be large enough. A rule of thumb to follow is 5 gallons of water for 2 inches of fish.

2. I have had letters from hundreds of hobbyists who have kept marine fishes for years. I have kept certain species for as long as 7 years.

Q. Would you be able to tell me what would be the best way to get started on a saltwater aquarium? Most dealers here don't stock anything in salt water.

Jack Parry, Youngstown, Ohio

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Q. 1. How many marine fishes can I keep in an 8-gallon tank?

2. Should I use water from the sea or tap water and the salts sold in petshops? I live near the coast and can get sea water.

3. What should I feed them?

Mark Osborn, Terranes, Calif.

A. 1. I suggest that you use at least a 20-gallon tank. Anything smaller can lead to trouble.

2. Use synthetic salts. Water from the

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YOUR FISHES' HEALTH

BY MIKE REED

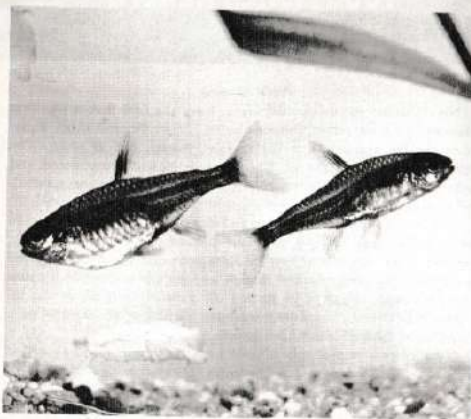
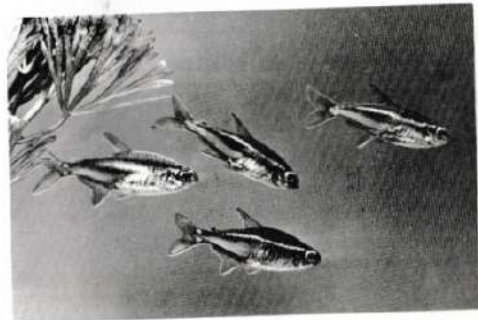
Neon Disease

Neon disease got its popular name from the fact that it was first observed in neon tetras, *Paracheirodon innesi*. Several other aquarium species also contract the disease, though not as often. The other fishes are all tetras too. They include glowlite, rosy, flame, and pulcher tetras. (A single report of the disease occurring on a sword-tail is also recorded.)

The malady usually starts just in front of the tail fin, often just in back of the dorsal fin, and rarely on another part of the fish's body. At first there is just a yellowish-white spot or two on the infected area. The area soon enlarges, though, and is quite noticeable because the fish's color seems to be peeled off down to its flesh at the infected site. Often a secondary infection of fungus attacks the spot, showing its typical cotton-like growth.

Neon disease is probably caused by a protozoan (a single-celled animal), *Pleistophora hyphessobryconis*. Microscopic examination of the infected tissue shows dead and dying cells in profusion.

Four neon tetras showing the first signs of neon disease. Photo by Dr. Herbert E. Axelrod.



Among the several tetra species that can contract neon disease is *Hemigrammus erythrozonus*, the glowlight tetra. Photo by Dr. Herbert E. Axelrod.

There is no cure for neon disease. Infected fishes should be removed from the aquarium as soon as they are seen to be sick. The disease spreads quickly, perhaps through the water, and definitely by healthy fishes consuming any of the bad tissue that falls away from an infected tankmate. It has also been shown that a female fish with neon disease will transmit the disease through her eggs to her fry. Needless to say, in such a spawning fry losses will be very high.

Preventive measures have been described in various works, but it is my opinion that little can be done beyond feeding your fishes well and keeping conditions in your aquarium as close to perfect as possible. Above all, look over any fish you are going to buy, and check its tankmates, too. Then isolate the new fish in its own tank for a week or so before you put it in your community setup. These procedures will help you avoid introducing not only neon disease, but any illness into your tanks.

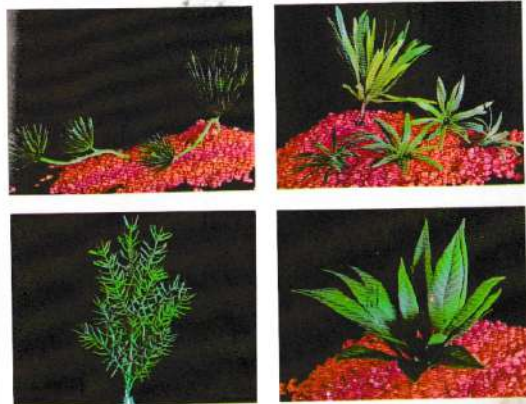
Plastic Plants

BY FREDERICK J. KERR

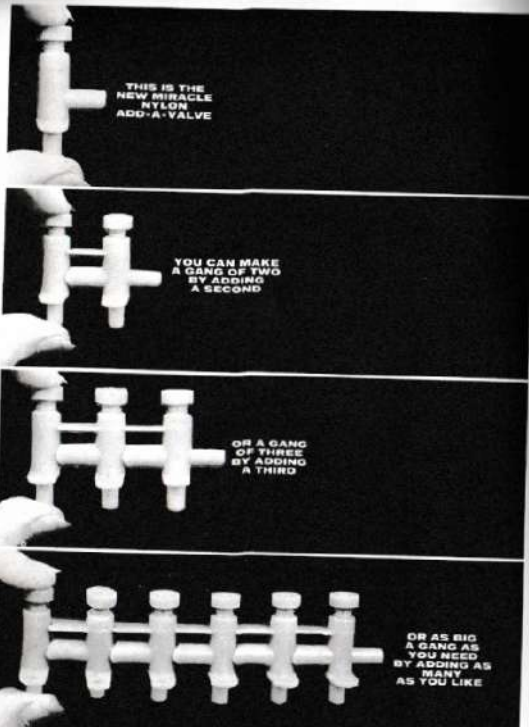
Although I am a purist when it comes to decorating aquariums, I am an enthusiastic supporter of plastic plants. I have been frustrated many times when I have tried to set up a decorative aquarium in locations where plants, for a host of reasons, refused to grow. I have also had to deal with aquariums which, because of interesting but strange shapes or landscaping, would not support a decorative display of plants. In such cases plastic plants have always solved the problem.

There are many who object to plastic plants. They say that plastic plants do not look real, may be made of plastic that will poison the fishes, are expensive, come in garish colors, and do not supply the fishes with needed oxygen and food.

Do plastic plants look like live aquarium plants? Unfortunately, many do not. Many plastic plants offered to the aquarist are repackaged items which



Plastic plant photos courtesy Miracle Plastic Corp.



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were originally intended for use in vases. Some of these would look terrible in an aquarium, African violets with flowers for example. Others, such as bamboo, are sufficiently like aquatic species to look very handsome in the aquarium. Recently manufacturers of aquarium products have started producing plastic plants which are imitations of such favorites as watersprite, sagittaria, Amazon swords and many others. Still, the detractors of plastic plants frequently point out the garish colors offered. Certainly some plastic plants are not colored the way natural plants are. Frequently plastic plants are seen in red, orange, and blue; but green in a host of shades is always available to the aquarist who prefers the more natural shades. Colored plants are offered for one reason: people buy them. We should, if we prefer green, buy it by all means, but we should not begrudge the aquarist who likes color on his plants as well as on his fishes. The recent introduction by Miracle Plastics Corporation of a complete line of aquarium plants in plastic should be a boon to fastidious hobbyists. In this new line of plants are several that look so real that they defy detection as plastic once in the aquarium.

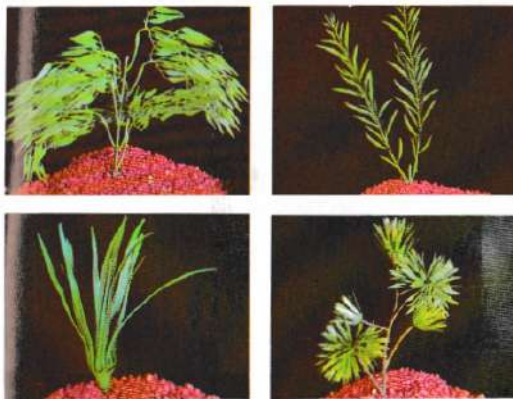
Let us now consider the objection that plastic plants may poison fishes. We know that some kinds of plastic are poisonous to fishes, but there has been no evidence that any of the plastics used in artificial plants are toxic. To be on the safe side, the aquarist should insist that the plants he buys come from an aquarium manufacturer, because they know what fishes need, while the producers of plastic bouquet flowers and plants probably do not.

What about price? In general plastic plants cost less than the more expensive natural plants and more than the less expensive ones. It should be considered, however, that plastic plants do not need to be replaced periodically.

This leaves one major objection to plastic plants: they do not give the fishes the benefits which natural plants do. Some maintain that natural plants provide aquarium fishes with important food and oxygen which plastic plants do not. These objections are easily answered. Living plants supply very little oxygen under the best of conditions. When in the dark, in fact, plants consume oxygen; in an overcrowded aquarium this could result in the death of the plants as well as the fishes. Aquarists who have observed fishes nibbling at plants have the mistaken idea that the fishes are eating the plants when in fact they are merely scraping microscopic plant and animal organisms from them. These tiny plants and animals grow just as well on plastic as on plant tissue. Certainly some fishes, such as scats and silver dollars, do eat plants, but if you have many of these aquatic cows you will either have plastic plants or none at all.

After looking over the objections to plastic plants, it seems reasonable to

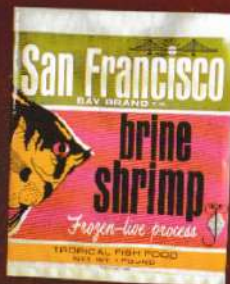
Plastic plant photos courtesy Miracle Plastics Corp.



look at their advantages. The first advantage is that they don't grow. That may not sound like an advantage, but when they are arranged the way the aquarist wishes, they do not become scraggly with growth and spoil the design. Another advantage is that plastic plants do not die. Many aquariums have looked great the first week or two after they have been set up, only to become a desolate mess as the plants die because of too little light, too much light, or any of a host of other things that plants do not like. A plastic plant, on the other hand, will be around as long as the aquarium.

Plastic plants can also be manipulated to put a leaf or stem in a particular place. Natural plants stubbornly maintain their right to an opinion in such matters.

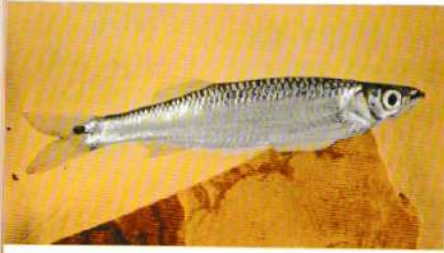
Are plastic plants going to completely replace natural plants in the aquarium? I don't think so. Plastic plants are, after all, imitations and imitations are never quite what the real thing is. Plastic plants will find a use in situations in which natural plants will not grow or where the aquarist is just not interested in catering to their needs.



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The fish above showed up in a shipment of mixed species. Its lack of bright coloration makes it a poor bet for future importance in commercial quantities. Photo by Dr. Herbert R. Axelrod. The fish to the right is *Crenicichla lentilineata*. Although it is very attractive, it is far too aggressive for home aquariums. Photo by Harold Schultz.



The fish above is unidentified. It is said to have come from the Rio Meta in Colombia, and it is probably a member of the family Etheostomidae. The fish to the left came into the office of this magazine in a shipment of several hundred cardinal tetras. It was discovered to be a new species and named *Hemigrammus grencki* in honor of a former editor of T.F.H. Photos by Dr. Herbert R. Axelrod.

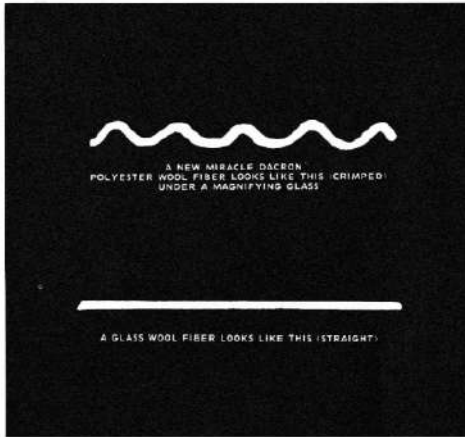


Tropicals We Seldom See

BY WILLIAM VORDERWINKLER

There are many of us who see a picture of a particularly beautiful fish in this or one of the other magazines and wonder why in the name of Pete the gorgeous creature is unavailable to the general public. There are a number of reasons this could happen, and it might be well to look at a few. Many times a collector holds back on a fish because it's just plain vicious.

It brings to mind (as just about *everything* does) my trip to Guyana some years ago (when it was still called British Guiana) and my visit there to the pools where the fishes collected by Louis Chung were held for acclimation and shipment. Mrs. Winnie Chung told me that one of the species they hated most was what they called a "sun-fish". Of course our North American



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"pumpkinseed", which is known to most little boys as a "sunfish", was the first to come to my mind. (I didn't even consider the marine sunfish, *Mola mola*.) She looked up the name for the one she was talking about and told me that it was *Crenicichla alta*. Of course, the *Crenicichla* group was never noted for the excellence of its members' manners, but this one, she told me, was a real roughneck. If one was accidentally introduced into a pool, it would ferociously attack the other fishes and would not rest until nothing living was left. However, even such ferocity would be found interesting by some hobbyists. Look at how many keep piranhas! But such a fish is also a problem to ship, because you just can't keep a greedy, bloodthirsty bully like this together with anything else, and one fish to a container costs money to ship, more than the fish could actually bring if sold. (Piranhas must also be shipped this way, but their reputation has created a constant small demand for them by people who are willing to pay quite a bit for a good conversation piece or a really novel novelty.)

Other fishes are never shipped merely because they grow too big for the average hobbyist. When collected at a very tender age, they may be satisfactory and even attractive, but in no time at all they entirely outgrow the home aquarium.

Another thing that keeps many fishes in their home waters is the fact that although they are beautiful they just cannot stand the rigors of transportation. I recall collecting some species that were a feast to the eye. I hoped their introduction to the hobby would give me lasting fame because they were not only beauties, but they looked like new species as well. I was told to keep them if I wanted to and was given an uncrowded container for the purpose. But I was also assured that they wouldn't "make it" back to the pools. I tried several times; sometimes they got back part ways, but within the next day or two they were very, very dead. If I had thought to carry a jar of formalin along, surely I would have preserved some of these fishes and they would probably have turned out to be new species.

If the average hobbyist were to watch a collector at work, he would be amazed at the number of beautiful fishes discarded right on the spot, because other species were preferable for some of the reasons I have pointed out. A collector's biggest headache, though, is the great availability of some species at certain times of the year, while they become practically impossible to come by at other times. It seems that every time there is a heavy demand for certain species, you just can't find the darned things! Then at other times you can be knee-deep in them and practically nobody orders them. It's the age-old law of supply and demand.

How well I remember stuffing thousands of pretty dwarf cichlids and silver tetras into large feed-bags for Mrs. Nellie Gorinski, one of the ranchers down there, because she had run out of feed for her chickens! It seemed

Tropical Fish Hobbyist

like a crime to see all of those fishes come to an untimely end just to feed a hungry flock of chickens, but chickens in Guyana are just like some tropical fish species up here, very expensive to buy and very hard to raise. A chicken has a tough time down there: the climate is really rough on them, and there are many predators (snakes, foxes, vampire bats, etc.) to make their lives miserable.

Many fish species we seldom see are merely the result of not-too-careful sorting. Frequently among shipments of common fishes we get a few surprises, especially if the fishes were small when shipped. When the natives collect them, many fishes are really tiny and some turn out to be entirely different species from the ones they were shipped with. These "hitchhikers" are sometimes spotted by sharp-eyed enthusiasts and may turn out to be new species. Can you imagine the thrill of being the discoverer of a new South American, African, or Asian species right in your neighborhood fish shop?

So, make no mistake about it: there are very many more attractive fish species than we have seen now and are ever likely to see. Perhaps some day we will find a way to desensitize the ones that do not take at all well to being removed from their native waters. Yes, I know they have some fish anesthetics now, but it seems that these sensitive little beauties are also sensitive to them! As with so many new things, we have much to learn yet. Always something new to look forward to!

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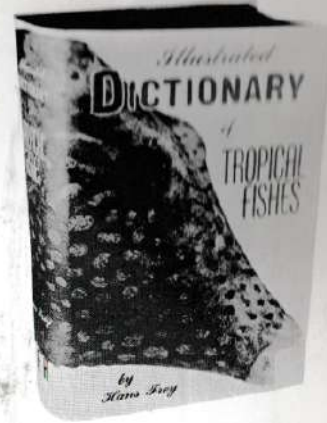
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