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The AQUARIUM



Color Plate by Wm. T. Innes

EPIPLATYS CHAPERI (Sauvage)

November, 1939

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THE AQUARIUM

. . . Editors . . .

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THE AQUARIST'S CALENDAR



COLD air drops from a closed window in winter like water over Niagara. Blow smoke against it and watch. If an aquarium is placed near a window in such a position that it is bathed in this cold current, a great improvement can be effected by standing a sheet of glass in a position so that it will act as a shield. Placed on edge and leaning against the aquarium is a simple and effective arrangement.

* * *

House radiators, using either steam or hot water, are apt to come into action in November, if not before. Often such a radiator located by a window makes a tempting spot on which to place an aquarium. There are points for and against the idea. If there is insufficient insulation between the base of the aquarium and the radiator, the heat of the water not only becomes too great at times, but the plants are unfavorably affected. They do not like to have their feet warm. If a board is used as a base on which to stand the tank, there will be little or no trouble. With this precaution it is surprising how mild and fairly uniform a temperature can be maintained, especially if a screen top cover (or none at all) is used. Not many fishes will leap from a well-planted aquarium which is not disturbed, once they become settled.

It is not safe placing a small aquarium over a steam radiator, even with the precaution suggested. We would

say that nothing below a 7-gallon tank should be attempted. With a hot-water system the safe size could be moved down to about 5 gallons.

* * *

Aquariums which have become thick with plants from summer growth should now be either thinned out or completely re-planted. If aquatic plants are in a situation where they thrive it is surprising how few of them are required for a start. Plants like Italian Vallisneria when "happy" seem literally to run all over the aquarium.

* * *

The growth of algae on the glass of an aquarium is so gradual that many aquarists fail to notice how it mars the view. It is rather embarrassing to have a visitor remark "the water is not clear," when we know that the film on the glass is the cause of partial obscurity. A scrape from a razor blade brightens the face of an aquarium quite as much as it improves the appearance of the average man. The aquarium has the advantage that in November the shave lasts longer than it does in summer.

* * *

Most pleasing effects can be had in living-rooms by enameling the frame of an aquarium to match the dominant color of the room. Usually this is the painted woodwork. It makes a pleasant little winter job. Its beauty will be enjoyed a long time, even by non-aquaristic members of the family.



EPIPLATYS CHAPERI (SAUVAGE)

An Old Favorite

BY Wm. T. Innes

IT has been written of many fishes that they have been former prime favorites, but that they are now in undeserved obscurity as aquarium fishes. This is particularly true of *Epiplatys chaperi*, or *Panchax chaperi*, as it was for many years better known. In the early days of exotic aquarium fishes no collection seemed to be without this beautiful fish, with such individual markings. We ourselves seem to have been at fault in not earlier including it in our list of color plates.

"Chaperi," (pronounced chaper-eye, not chapee-ree) is very easily recognized by two outstanding markings on the male. One is a blood-red dash of color under his mouth. The other is the black and pointing edging on the lower part of his tail fin. These markings also make it easy to tell him from the female. These and other differences are seen in our cover color plate. One of the features not shown in our color plate is a bright light spot on top of the head between the eyes. While not luminous it appears so, owing to its iridescence.

This beautifully marked fish belongs to what is known as the Panchax group, included among the Egg-laying Tooth Carps. It and several of its near relatives spend much of their time moving slowly just below the surface of the water. In nature they are no doubt on the alert for insect prey, although they are not averse to eating any small fish that they can manage to swallow at a gulp. They are not combative in the sense of annoying or bullying other fishes. Their prob-

lem is "to swallow or not to swallow." They are pretty likely to be fatal to snails, a fault of many exotic aquarium fishes. Probably it is their rather sluggish actions that have gotten them out of popularity. This is a slight fault compared with the merit of their beauty, and we are sure many of our newer aquarists would have much pleasure in this fish. The writer recently presented a pair to an aquarist having a very large collection, who had never seen the species. Of course we are all apt to think the newest fish is the most beautiful of all, but this pair made a profound and apparently permanent hit.

These fishes crave live food, but can get along on prepared articles, especially like shredded dried shrimp. Pieces remain on the surface of the water, from which point they prefer eating.

The breeding is simple. Single eggs are deposited among such plants as a floating mass of Riccia. The parents do not seem to eat eggs, but to be on the safe side it is best to remove them to a hatching aquarium. Hatching takes about two weeks at 75 degrees. A male is capable of spawning several females.

The young are fairly large and after a course of infusoria are soon able to take sifted Daphnia.

As the eggs are of different ages, owing to the fact that the spawning extends over several days, the large babies are apt to eat the small ones. Therefore it is wise to sort them according to size for a time if it is desired to raise them in quantity. Maturity comes in less than a year.

BREEDING THE BUTTERFLY FISH

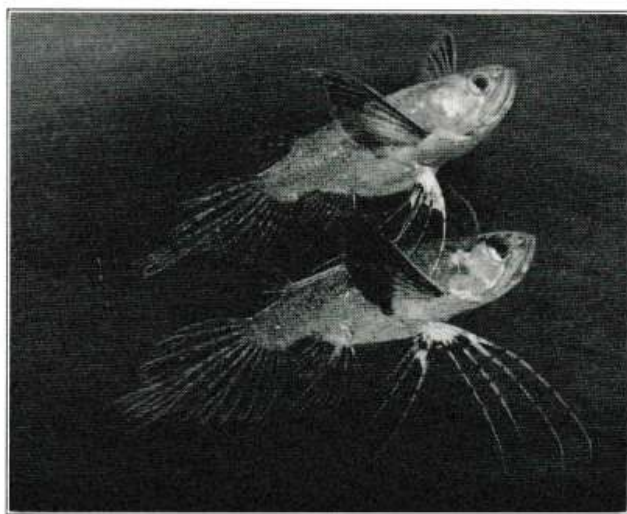
{*Pantodon buchholzi*}

BY *Gottlieb Weber*

• *A distinguished "first" in aquarium achievement.*

TO succeed with difficult-to-breed egg-laying fishes seems to me to be "the king of sports" in connection with aquarium work. Consequently, when a year ago I had the opportunity of picking up a pair of Pantodons, I let no grass grow under my feet, for

I placed the Pantodons in a well-planted tank 12 x 12 x 36 inches containing very clear water, the plants being Vallisneria, Cryptocoryne, Naias, Water Fern, all in active growth. Feeding was no problem. The fish move slowly about, just under the surface of



PROFILE VIEW OF A PAIR OF PANTODONS *Photo W. T. L.*

here indeed was a fish that had defied successful propagation. I had heard of a few people who had gotten so far as to get them to spawn, but to the best of my knowledge the young had always died of early starvation.

The sexes are not difficult to tell. Principally the wing-like pectoral fins of the male are considerably larger than those of the female. Also, she is broader, heavier and a little larger.

the water, seemingly rather stupid, but they have sharp eyes and notice all that is going on. It was no time until I had them eating out of my fingers. They take raw chopped lean beef, small earthworms, but principally live fish the size of a male Guppy. They have a sort of quick side grab for their food. This peculiarity shows itself even when they are little babies.

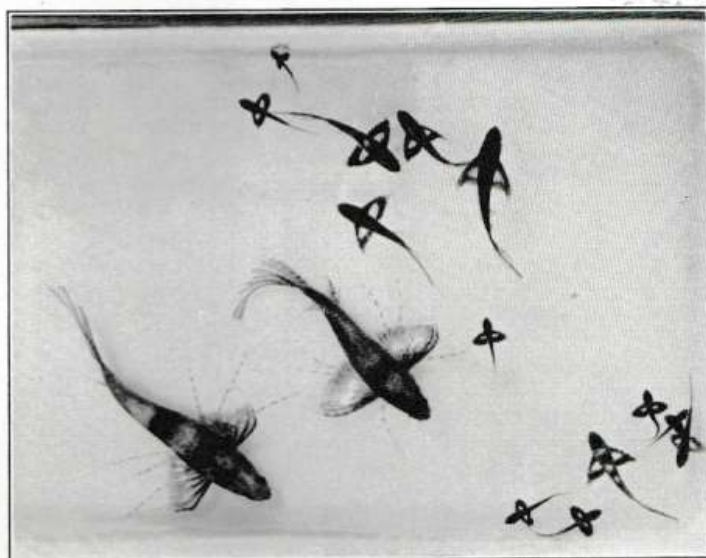
Without any previous signs of court-

ing by the fish I was surprised on June 10th by finding a large quantity of eggs floating around the tank, especially along the edges of the glass. I removed the fish to a second tank and the pair spawned a little more. Evidently they had not finished. The eggs are very large, being about the size of frogs' eggs.

I immediately wrote Mr. Innes asking his suggestions on rearing the

I added some small organisms from a pond which I believe to be rotifers. They were shaped like a tear-drop, and lived mostly at the surface. Probably these were largely responsible for my success in rearing 30 young, although I put 10 young in an aquarium with Neon Tetra. Three of them lived without special feeding.

When fed infusoria only (Paramecium) the trick is to have such a



(Photo at half size by W. T. L.)
Overhead view of a pair of Pantodons and their babies, safely posed for the occasion, while the parents are in a well fed condition.

young. His reply did not give me much hope, but his idea proved to be correct when he said something would have to be found that could be eaten at the surface.

In a week the eggs hatched. The babies looked from the top like young tadpoles, and from the side like twigs about a quarter-inch long. Now the feeding problem had to be answered. It was "do or die," in a very literal sense. I had started a regular infusoria culture, using lettuce leaves, but to this

thick culture that many of them must live at the surface. After the babies got to the stage where they could eat Daphnia (which was not long) I resorted to the trick of bringing the water down to a 2-inch depth so that sufficient of the Daphnia would have to swim near the top, where they would be grabbed by the peculiar "side-swipe" of the baby Pantodons. Newly-hatched mosquito larvae, being quite small, and nearly always right at the surface, make ideal food.

Now that mosquitos are gone, I find that the babies eat dry food that floats. Pantodons will take no food from the bottom.

I should add that the spawning temperature was 75 degrees, and that the tank gets two hours of sunlight from the top.

I cannot say that I have actually seen the spawning act, but only last week I saw the male at rest on top of the female. He probably clasps her with his long fins and fertilizes the eggs as they are expelled.

Like some other apparently slow-moving fishes, Pantodons are terrific jumpers, and should be kept covered. In a similar way they are fliers like the Knife fishes. When Mr. Innes came to my home to photograph a group of Pantodons, they were placed in a shallow enamel tray. At least half a dozen leaped out during the process. Fortunately it was a mild day and the tray was placed on a lawn where the grass is thick and soft. None suffered any injury. As will be seen from the top-view illustration, these fishes have sweeping, graceful movements of their large tail fins, which no doubt helps the take-off in leaping.

Lip-stick

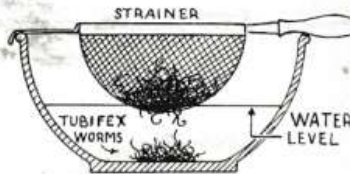
CUTLER JONES, Fitchburg, Mass.

Don't laugh, fellow aquarists. I needed to mark a date on an aquarium front. Searched high and low for my red pencil that came with a pH set, but without success. I remembered seeing one of those funny pencils called lip-sticks, sneaked one from a dressing table and tried it—on the glass. It worked beautifully, much better than the pencil I lost. Although it is not supposed to come off (when kissing) I find that it wipes off the glass without the least trouble. They cost ten cents—if you can't borrow one.

Getting Clean Tubifex Worms

BY DONALD MICHAEL
Glencoe, Ill.

There are probably many fish fanciers who, like myself, have steered clear of tubifex worms because of the mess and the amount of time involved in preparing these worms for fish consumption. I have used a satisfactory method for the past year and have found it very convenient.



Tubifex worms are generally found in a mixture of mud and organic matter in various stages of decay. The problem is to separate them from the material. The only equipment needed, after the worms have been collected, are a bowl and a strainer.

Take a scoop of tubifex-bearing mud in the strainer and run water through it until most of the mud has drained out. The tubifex will be found mixed with the larger pieces of debris in the strainer. Next, the strainer is laid across the bowl as illustrated. The bowl is then filled with water until it just covers the bottom of the strainer. Now just leave it in this position for twenty minutes or so. Upon inspection it will be found that the worms will have wiggled through the strainer into the bowls. They are clean and may be fed to the fish. The tubifex season is now here.

Tubifex can be kept in shallow water for a week in a refrigerator, or longer under a tap outdoors where the temperature is just above freezing.

SILVER TETRA

• *The Story of a
Chance Spawning*

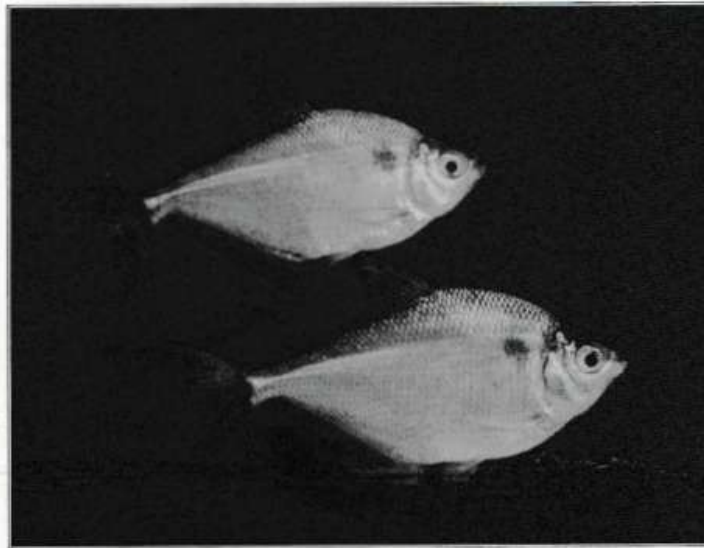
Ctenobrycon spilurus

BY *Dan M. Hodges, Jr.*

TO my mind the Silver Tetra (*Ctenobrycon spilurus*) is one of those unfortunate tropical fish which, while popular with both dealers and fish fanciers four or five years back, are seldom kept today in either the shop owner's display tank or in the sitting room aquariums of amateur breeders. They have gradually reached a state of

far better fate than it has received during the past few years.

While in New York in 1936, I bought two young Silver Tetras, along with a number of other fishes, at a small tropical fish shop. The others have long since reached the "happy fishing grounds," but the Silver Tetra, now 3½ years old, are still in the pink of



Ctenobrycon spilurus (CUVIER & VALENCIENNES)

obscurity in the fish world, now that newer species, possessing perhaps more brilliant coloring, more interesting breeding habits, or smaller appetites, have come into popularity. Hardy, active, and vigorous, *Ctenobrycon* is a fish that should be in the aquariums of the modern fish fans, and it deserves a

condition. The two proved to be a pair, and although I made several attempts to breed them indoors, they did not spawn, probably because I did not have an aquarium of more than 7½ gallons capacity to put them in. The female was 2 inches long, with rosy anal fins and a fuller body than the male—he

was slightly shorter and slimmer and lacked the rosy fins she had. Therefore it was not until this summer that I was able to breed the Silver Tetra, and *then* the spawning came as a surprise to me and made me realize that I could have spawned them two years ago if I had only had the space—and enough Tetra sense!

A friend gave me two wooden tubs of possibly 20-gallons capacity each at the beginning of the summer, and since I needed my aquarium space for some other fish, I put the Silver Tetra out in one of the tubs on June 24th, more to get them out of the way than for any other reason, although I did entertain the faintest hope that they *might* spawn. The tub contained a large Water Hyacinth, a large clump of Nitella, some Myriophyllum, Sagittaria, and Anacharis; also a large amount of algae along the sides, which started growing soon after the filled tub was placed in the sun. The tub was shaded for about three-fourths of the day. Every day I took a careful look into the tub just to see how things were getting along, but it was not until July 3 that I discovered any small fish swimming about. I tried to catch out the adult pair, since I feared they would make "mincemeat" of their own flesh and blood, but, realizing that my catching the elusive parents would result in my tearing up the plants, I decided to leave well enough alone and left them in the tub with their young. I observed that the young were constantly nibbling at the algae along the sides. The adults remained well-hidden among the thick plants. For that matter, the young were easily frightened, and they remained, after they were about three weeks old, largely at the bottom, where they nibbled at the greenery.

Naturally, it is impossible to say how many spawnings occurred, but on

August 1, I caught out all the young fish and changed the adults to another tub. There were 71 youngsters, ranging from $\frac{5}{8}$ of an inch on down, and these I put in an aquarium indoors. Then on August 26 I again caught out the adult pair along with 61 little fish which were the results of spawnings after August 1. There are still several young left in the tub that I haven't been able to catch. All the young have been doing fine on a diet of prepared food since I've had them in the aquarium. The black spot on the tail was surprising in even the very young fish, but the characteristic Silver Tetra shape developed gradually. All the young which were hatched in July now have the Tetra shape, but the late-comers are still in varying degrees of slinness. All in all, I consider the 132 young a sight better to have than just one pair alone, and there is no reason why other aquarists shouldn't duplicate or surpass what I have done without trying. I am sure that breeding the fish out of doors in the open has a great advantage over spawning them indoors, because in the former case conditions are more as Nature would have them.

Gtenobrycon spilurus is an easy fish to keep. My pair has put up with a great range of temperature and ill-treatment without apparent discomfort. Silver Tetra, however, are wary and timid when kept to themselves, and they keep motionless at the aquarium bottom, occasionally darting around nervously when disturbed. Therefore, a sure-fire way to cure your young and older fish of this unnecessary timidity is to put them in with other fish which are of a naturally friendly disposition. The nervousness of the Tets departs almost at once. The schooling of the Silver Tetras is an unusually attractive sight as they pass through the water, their iridescent scales gleaming silver

as they catch the light. The Silver Tetra is an excellent "background fish" for brilliantly-colored species and has the virtue of being "on the go" always. It takes prepared food readily, but an occasional meal of live food is appreciated. Although they are often accused of fin-nipping, I have never seen my pair in the act of snapping at the fins of other fish, even when they were in with fish much smaller than they were. Nevertheless, the Silver Tetra does best with fish its own size when it is grown. This is a fish that "grows" on the aquarist, and I believe it deserves a nook in more aquariums today.

Editor's Note: The main objection to this otherwise excellent aquarium fish is its tendency to nibble at plants, especially the new shoots of Vallisneria, which it often eats down to the crown. Also as to pronunciation: the letter C is silent, which makes it simply ten-o-bry-con spy-lew'rus.

Emergency Tanks

By H. A. PETIT
Charleston, S. C.

I read with considerable interest the article by Mr. George H. Penn., Jr., in the July issue of THE AQUARIUM on "Extra Tank Space for Babies." The average small dealer and fancier is generally hard put for extra tank space for growing fish, and as extra aquariums are costly, the usual thing is to overcrowd, thereby losing a number of fish, the remainder being runts.

We solved this problem in what we consider a little better way than the asphalted paper mentioned by Mr. Penn, as the aquariums are much sturdier and can be used from year to year.

We secured and made a number of boxes holding from 12 to 15 gallons, made of $\frac{1}{2}$ to $\frac{3}{4}$ inch boards and covered the inside with single window glass and cemented with Pecora cement. The glass sides or bottom need not be in one piece and for the long narrow

boxes may be put in by sections. If desired, partitions may be put in. This kind of aquarium will not leak and is easily cleaned. We have also made a number of aquariums by using $\frac{1}{2}$ inch cypress boards for ends, sides and bottom, and then coating with a thick layer of paraffine wax.

Our tanks have been in use for two and three years, and as far as we can see have a good many more years of service.

Literary License

Mr. William A. Tompkins, of Unionville, Conn., sends a newspaper clipping showing the extraordinary workings of a reporter's mind. Having for many years seen weird write-ups of interviews, we cannot imagine that Mr. Norvelle mentioned in the article could possibly have said the things attributed to him. Here are a few of the choice specimens:

"Angel Fish breed only once in five years. Mr. Norvelle says therefore he won't have the opportunity of raising any until next year."

"He has had fine success in raising what he terms mongrels. That is, a cross between a Red Swordtail and a Black Mollienisia, a Red Swordtail and a guppy, and Blue Moons with Black Mollienisias."

What marvellous crosses these would make if it were possible!

The following paragraph tops them all.

"Mr. Norvelle says all his fish are live-bearers. They lay eggs which drop to the bottom and immediately come to the top, break open and a fish about the size of a pinhead pops out. Mr. Norvelle scoops up these tiny fish and places them in a small breeding tank."

The aquarist also seems to have something extraordinary in the way of worms. The article says:

"He places some oatmeal in a box of mixed dirt and coffee grounds and waits about a week and a half. Then he paws through the dirt after this period has elapsed and he finds the worms by the million. If he waits longer than two weeks there will be neither worms nor oatmeal. Mr. Norvelle does not profess to know how the worms breed and he doesn't care, so long as he gets them in great numbers."

CORRESPONDENCE

LETTERS appearing here have already been answered personally. The ones selected for publication are those containing points of interest to readers. We answer all letters on day of receipt, provided a stamped, self-addressed envelope is furnished.

From Mr. R. L. Cassatt, N. Y. City

I have a 20-gallon aquarium in which there are four *Scalares* a little larger than medium size. I go into the room where they are only once a day and they do not see anyone else. That is to say, they are not very used to seeing people. Often when I enter the room and go close to the aquarium they dash about wildly, sometimes striking the glass with a sufficient force to stun themselves. Have you any suggestion as to how I can overcome the condition?

Ans. We have seen the condition you describe in tanks where there are no plants. When the tank is well planted the fish seem to be able to better judge their movements through water. We would suggest putting in about four large plants of giant *Sagittaria* and a couple of sprays of *Anacharis* fastened into the sand. The addition of other plants of your own selection would no doubt be of help. If you will invariably bring your fish some food every time you approach the aquarium we believe you will soon have them tame.

* * *

From May Flubman, Montreal, Canada

Almost a year ago I wrote you for advice concerning a female Zebra fish, and your reply taught me a lesson I shall never forget. It was in reference to spawning a Zebra fish. I have found by experience that Zebra fish should be spawned as early as possible. Otherwise they become roe-bound.

I know that you are interested in your readers' experiences, so perhaps this may interest you. I have noticed

that every one, without exception, of the Zebra fishes that I have had has a great liking for the feel of human flesh. They all come and rub their bodies against my fingers and never stop until I take my fingers out of the aquarium. I have had many other fishes but only the Zebra fish seem to have that peculiarity to such an extent. I have never seen that fact mentioned anywhere. I have a male Siamese Fighting Fish in another aquarium who has a great liking for flies. Are they good for him? I don't dare give him a fly too often but he seems to think it is a great treat.

Ans. We are glad that our previous advice proved helpful. Your experience with the *Brachydanius* liking to rub against your hand is a new one as far as we are concerned. If other readers have noticed that, we would like to hear from them. In reference to feeding flies to your Siamese Fighting Fish, we believe it would be impossible to give him too many as long as he continues to eat them.

* * *

From Mr. Frank Woodruff, Haverhill, Mass.

My female Crescent Moons have appeared very large for about a month. Do you think they are in danger of dying from not being able to deliver their young?

Ans. Death very seldom ensues from this cause. The fish may be developing an exceptionally large brood, which takes a longer time. If you wish to hurry the delivery, try placing the fish in fresh water that has stood a day before using.

Lake Worth, Fla.,
October 10, 1939.

My Dear Mr. Innes:

I notice in the September THE AQUARIUM that you would like to have pictures of your correspondents. I have never dared to think I know enough about fish to write for your magazine, but would like to let you and your readers know about how I started my

made of Coquina rock which is mined from the ocean near here and can be cut when soft to any shape or size; the top ledge is of cement, the corners I made by using old tire rims, and the lighthouse has over four hundred pieces of stone cut by hand. This was to be my wife's pool. After I got the tropical fish hobby I cut it up into eight sections. The winter following the building of this pool we had an exhibit at



TWENTY-FIVE POOLS IN ONE

hobby three years ago, with only two pairs of exotic fish, and now I have altogether, counting small breeding pools inside and outside, about one hundred and two pools, housing over one hundred kinds of exotics and eight kinds of Goldfish. I have taken one hundred feet next to my home and made a gorgeous show place of it, and this summer I have beautified another sixty feet.

I am enclosing three pictures. Number two, the first pool I ever built, is

the Palm Beach Flower Show, first time fish had ever been featured.

Above photo shows a second pool, built the following summer with only schoolboy help, and according to my own plans; five pools in the hub and twenty around it. It is beautiful when set up, has a water lily in each section and lovely plants, a different kind in each pool. In the deep center ones I have bred Scalares with success, also the Fighting Fish.

Ever since I was a little boy I have



POOL OF COQUINA ROCK AND CEMENT

bred and fooled with fish, having gone fishing with my Dad from the time I could hold a pole in my hand. I raised Goldfish for bait, taking them to the North Woods in summer for the fishing, so this hobby of mine is, of course, right down my alley, or should I say, fish pool?

Picture number 3 is me in person standing in front of three pools built together, one a little higher than the other. I have fancy Goldfish in the centre one and Black Mollies on each side.

From the music business to exotic fish is a very big jump, but I have made something very beautiful from two vacant lots and am not even interested in my old love of fishing for the big ones. I hold the record in Wisconsin for Muskies and on the East Coast of Florida for the large Sea Bass, but I'll take Guppies every time.

Sincerely, C. C. BAKER.



From Mr. J. F. Stakef, Edgewood, Pa.

An ugly worm from half to three-quarters of an inch long is infesting my tropical fish. It comes right out of the flesh on different parts of the body. Do you know what this is?

Ans. The parasite you describe is called Anchor Worm, and usually attacks Goldfish, although it does get on some tropicals. We would be very much interested to learn what tropicals of yours they are on and whether there has been any contact with Goldfish. We had an article on this ugly parasite in the October, 1936, issue of *The Aquarium*. If there are not too many on the fish, they had best be pulled out, but they naturally die after several weeks, and it is rather unusual for them to multiply in the aquarium. The animal is related to Cyclops, and it drops eggs from the end of the long hair. These eggs hatch into free-swimming creatures which again burrow into the skin of the fish. Permanganate of potash, strength of about one-quarter grain to the gallon, kills the free-swimming animals.

* * *

From Mr. H. A. Petit, Charleston, S. C.

For the past few months we have had considerable trouble with mouth fungus and in consequence lost a good many fish from its ravages. We would appreciate your answering the following questions: (1) The treatment. (2) Is the tank usable after it once becomes infected? (3) Can the grass and sand be used without fear of reinfesting new fish? (4) The cause of this disease.

Ans. Mouth fungus is one of the things that has baffled aquarists so far. If we were in your place we would thoroughly disinfect the aquarium and throw away all the plants before putting in any new fishes. The trouble usually starts from mouth abrasions during shipment.

~ The EDITOR'S LETTER ~

Dear Readers:

EACH autumn we have a crop of well-meaning ladies and gentlemen who hit upon the original idea that an aquarium in the school room would serve several good purposes. Primarily it would stimulate the students' love for and understanding of natural history. The proper care of pets would be promoted; perceptive faculties quickened. At the same time a school aquarium would furnish a community project in which all could take part.

Those are all fine objectives. I am all for anything that is going to make more and better aquarists, but the school aquarium has so often proven a disappointment. Perhaps some of the failures would be avoided if a few simple facts were noted. I shall try to point out the more important ones.

Most schools are bitter cold over winter week-ends. This is fatal to the majority of exotic fishes and is dangerous to the Goldfish, although the latter will usually survive if not fed until again fully warmed.

The difficulty about heat in most schools also presents itself nightly throughout the cold season. Theoretically an electric heater controlled by thermostat answers the problem. Unfortunately we sometimes have to contend not only with cheap, inferior electrical apparatus, but also with human failure, especially where responsibility is not placed on one person.

Another natural disadvantage of the school aquarium is at the other extreme of the year's climate. If any fishes have been lucky enough to survive the winter, they will do well indeed to get by July and August under the care of a non-aquarist janitor.

The difficulties already mentioned are obviously very real, but another which is not so apparent is even more serious. That is the frequent lack of aquarium knowledge on the part of the teacher, resulting not only in the loss of life in the tank, but failure to give pupils the desired interest in the subject.

What then *can* be done to make the school aquarium a success? In the first place the management of an aquarium is not a project that can succeed under divided responsibility, especially in the matter of feeding. The person placed in charge need not be an expert, but should have a reasonably good foundation in aquarium principles. He or she should know enough to select species of fishes and plants that would be most likely to survive under the conditions that would have to be met.

A successful school aquarium is not impossible, but it has numerous special handicaps.

Sincerely yours,

Wm. T. Innes

Indian Fishes at Home

Dear Mr. Editor:

It is interesting to note that your letterhead shows the *Colisa lalia*, from Bengal. It doesn't appear in the streams of South India, though I have several specimens of this delightful fish imported from Bengal, also *Brachydanio rerio* which is also a stranger in these parts, though it breeds so profusely if introduced into garden ponds here. That is one advantage we have in Southern India. We don't have to take our fish in for the winter, provided always that the pond is big enough not to give too sudden a drop in temperature during the night. This year I am going to take a series of observations of the temperature of the rivers where our tropical fish are caught. It should prove most interesting. I expect to find very large variations, but little fall between day and night temperatures. By that I mean that the variations are seasonal and that the rise and fall is gradual, being spread over many months.

I agree that there is a great deal of fussing about fish in aquariums. I find from careful observations over a year that any fish will stand a variation of as much as 15° F. spread over 12 hours, always provided that the temperature is on the high side to start with. For example the temperature during the past 24-hours in Poona was as follows: Shade temperature on the verandah (where the aquariums are placed): maximum 105—minimum 74. Water temperature of aquaria (taking an average of 30 large glass aquariums): maximum at 5 P. M. 89—minimum 75 at 8 A. M.

The fish are all happy and strutting about in their courting colours, and what a sight they are! This morning I sat and watched a battery of tanks. In

• Being a letter from Major
Henry J. Rice, Poona, India

the top one a *Betta splendens* had blown a super-bubble-nest and had coaxed his mate to indulge in a series of nuptial embraces. Below, a pair of *Danio malabaricus* were performing a headlong chase round a centrally placed tuft of *Myriophyllum*. Two Angel Fish are cleaning up a leaf, preparatory to depositing their spawn. They are so marvellously meticulous about the cleanliness of their spawning site. Further down the verandah two *Barbus sumatranus* are darting through the plants in a love chase which may last for days. In the intervals of observation I fish out the odd newly arrived Guppy or Platy to save him or her from its cannibalistic parents. What a place for a fish breeder—natural food is obtainable in abundance at this time of the year, especially the larvae of *Chironomus*.

Some day when you can take a holiday from your publications, you may tour the world and see the places where the fish you illustrate so wonderfully come from. Perhaps you might even take a week or two on your way and spend it in India. I would like you to lift the lead line of our seine net and see a shoal of a couple of hundred brilliant golden barbs with scarlet fins, such as we often come across. They are sights we never tire of.

If dealers are looking for new aquarium fishes let me recommend the following. All do well in captivity.

Barbus canarensis—

Robtee cotio—Semi-transparent knife fish with a glorious prismatic violet sheen.

Perilampus atpar—A really transparent barb with long ventral feelers. Not to be confused with the glass catfish.

Faithfully yours,

HENRY J. RICE.

Gleanings

from the reports of the German Aquarium Societies in German magazines, with comments by the translator,

F. H. STOYE

Braunschweig — "Riccia" — Wochenschrift

During a discussion on fish breeding it was brought out that success or a lack thereof does not always depend on so-called "tricks." Heavy planting (apparently the vogue among German aquarists for breeding Danios) did not give the desired result with Danios. The "trick" failed and the fishes seemed to be hindered rather than helped. Scant planting and plenty of room resulted in larger broods. This seems to show plainly that "technical" aids (or artificial means) do not always guarantee success.

Comment—Years ago we once tried the then prevailing and accepted German method of practically stuffing a Brachydanio breeding tank with fine-leaved plants, mainly Nitella, Riccia and Algae. The result was about a dozen young. It has long been recognized, as expressed in this report, that our beautiful and lively Brachydanius and Danios need plenty of space for their tempestuous spawning activities. For the benefit of those of our readers who have never tried them, we repeat the best tank arrangement. The breeding tank should be at least ten or twelve inches long, longer is better. It may be quite narrow, though. Place several layers of small pebbles or marbles on the bottom of the aquarium. Locate the tank where it will receive the early morning sun. Fill the aquarium with six inches of fresh, tempered water in the morning and place the female in the tank the same night. Introduce two males the evening of the second day, or twenty-four hours later. If the day is bright and sunny and the fishes were in

spawning condition, they will rarely fail to spawn the following morning, soon after daybreak. Select a heavy, rotund female and two brightly colored, active males. Avoid males with drooping tails. It is advisable to place a small bunch of Algae, Riccia or Nitella under a pebble in the center or a corner of the tank. Needless to say, the breeders should be removed immediately after spawning is completed. Early morning spawnings are normal for these species. By keeping the tank dark and using artificial light they may be induced to spawn during other hours. At a temperature of 80° they hatch in 48 hours and the young adhere to the glass, pebbles or plants. Two days later they swim about and eat protozoans and dust-fine prepared foods. It is not unusual that a few of the eggs take three or four days for hatching.

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Braunschweig — "Riccia" — Wochenschrift

A friend reported that the feeding of Glassworms which apparently were infected, caused his fishes to become covered with a cottony fungus and ended with their death. The cause of the disease (parasite?) is not known.

Comment—When one considers the condition of the pools, etc., from which live food is gathered, one wonders that aquarium fishes are not more frequently infected by diseases and parasites introduced with the various live foods. In the case reported it seems likely that either the aquarium conditions were favorable for a quick increase of the introduced parasites or that the fishes in the aquaria were in a somewhat weakened condition.

BEGINNER'S PAGE

NATURE usually gives us a fair warning. Sometimes we are not able to understand it, but it is there. It is man's increasing knowledge of reading the signs of trouble that constitutes much of his advancement—such as it is.

In the aquarium some of the most important distress signals are easily recognized. One of them, for instance, is when the fish persist in coming to the surface to breathe atmospheric air, and will not stay down, even when frightened. Except for finding dead fishes in the aquarium, that is the surest sign of all that something is wrong. Perhaps it is several things, but usually one is enough, and when this is corrected, things return to a pleasant, normal condition.

As we have explained many times, fishes breathe by extracting, through the medium of their gills, dissolved oxygen which is in the water. It is their actual breath of life. When the water is contaminated, or there is too little oxygen in it, the fishes are being slowly poisoned or suffocated. That is the reason they come to the surface to get fresh air. Some people call it "blowing bubbles," because the action has a tendency to produce them.

There are two common causes of bad water. The first (and commonest) is too many fishes for the size of the aquarium. Oxygen is renewed mainly at the surface of the water, but if there are so many fishes present that they use the oxygen faster than it can be renewed in so small a space, trouble is not far distant. The best answer to that situation is to procure a larger aquarium—especially one shaped so that the water surface is large. Depth is unim-

portant, except for appearance. The next-best answer is to remove some of the fish. If necessary, give them away. Before deciding on this, however, the aquarium should be investigated to learn whether overcrowding is really the cause. It may be that the second evil, known as overfeeding, is responsible. This does not mean mild overfeeding, but the kind when the fishes get entirely more than they can eat, and the crumbs are lying about the floor. They soon decompose in water and start trouble. The fishes come to the top to avoid the foul gases.

Still again the difficulty may be that some snail or fish has died, and is in an obscure place. Poke about and find out.

While it is perfectly true that growing grasses, under the influence of good light, help purify the water, they cannot take care of some major faulty condition. The same thing is true of mechanical aeration, now so largely in use by advanced aquarists.

In reference to plants, stick mainly to the favorites. It is all right for the old-timers to play with the oddities, but for results and satisfaction use *Sagittaria* (large and small), *Vallisneria* for aquariums of ten-gallon size and over, *Myriophyllum* and *Cabomba*. *Anacharis* has many friends and almost as many critics who find that it becomes thin and poor. The writer's personal choice of the best plant for small and medium sized aquariums is a short *Sagittaria* known as *S. natans*. This is one of the true grass-like forms. It is not suited to such small containers as half-gallon globes. If those abominations *must* be kept, throw in a sprig of *Myriophyllum* or *Cabomba*.