

# TROPICAL FISH

HOBBYIST

SEPTEMBER, 1963

DOMESTIC 35¢

BRITISH ISLES 2/6



COLOR  
PLATES  
INSIDE





**Tropical Fish Primer For Beginners**, by Wilfred L. Whiteman. 30¢ from your dealer or direct from T.F.H.

Inaugurating a new series of tropical fish books aimed at informing hobbyists of the keeping and breeding of the most popular species is Wilfred L. Whiteman's *Tropical Fish Primer For Beginners*.

Mr. Whiteman, a Fellow of the Zoological Society of London, is well known to hobbyists through his lectures and previous writings. In his initial book of the new series Mr. Whiteman covers the facets of the hobby most important to beginners, with particular attention to methods of preventing and treating the diseases which in most cases plague aquarists of little experience.

Special sections on plants and planting, setting up the aquarium, water conditions and temperatures, lighting and heating arrangements, foods and feeding, and selection of fishes for the beginner's tank all help to present in as brief and clarified manner as possible the basic keys to success in enjoying the hobby.

Broken down into two separate divisions for the convenience of the reader, the section on the selection of fishes lists and describes many egg-laying and live-bearing species. From Guppies to White Clouds, each fish is treated in detail, with valuable information given on temperament, temperature requirements, and food preferences.

Something that every beginner will find of great use is the section on the anatomy of fishes, which explains the terms often encountered in advanced hobbyist literature.

Profusely illustrated in both color and black and white, Mr. Whiteman's book provides good graphic representation of the fishes with which the beginner is most likely to succeed. After reading this fact-filled treatise, the beginner will know not only what he should get, but also what it will look like.

## TROPICAL FISH HOBBYIST

Dr. Herbert R. Axelrod, President  
William Vanderwalker, Publisher  
Neal French, Editor  
Dr. Leonard P. Schultz, Advisory Editor  
Hans Peter, Overseas Editor  
Leo Fiddis, Advertising Manager  
Dr. Arnon Axelrod, Business Manager  
Harold Schultz, Expedition Chief  
Fred Bunn, Art Director  
Halge Moss, Art Assistant

### Contents

Vol. XII, September, 1963 (#91) No. 1  
New Introductions from Delta Aquarium 5  
A Tropical Fish Paradise 15  
My Experiences With Surgefishes 37

### FEATURES

Flat Call: p. 41; Guppy Cousins: p. 51;  
Salt from the Seven Seas: p. 55; Society News: p. 66

### COVER

Not all Florida fish farmers produce cheap fishes. Bill Hearin of Delta Aquarium in Miami is producing some of the most beautiful Platys, Guppies, and Tetras. The beautiful Delta Top-sail Platys Variatus are just samples of new fishes to come from Florida late this year. Cover photo by Dr. Herbert R. Axelrod.

### EXOTIC TROPICAL FISHES

#### SUPPLEMENTS

Pages 23 and 24, 29 and 40. These pages are prepared for easy removal and punched to fit into the Loose-leaf Edition of EXOTIC TROPICAL FISHES.

RATES: 35¢ c. per copy in the U. S. 50¢ per copy in Canada or foreign. \$1.50 for 12 issue subscription. All back issues available at 35¢ per copy. Index available in every 12th issue.

In Canada Tropical Fish Hobbyist magazine and books are sold exclusively through Canadian Aquarium Supply Co., 1125 Talbot Street, St. Thomas, Ontario. All subscriptions and inquiries from Canadians should be directed to them.

In England and the western sterling area Tropical Fish Hobbyist magazine and T.F.H. Books are distributed exclusively through T.F.H. Publications (London) Ltd., 59 Station Road, Redhill, Surrey, England. All subscriptions and inquiries should be sent directly to them.

© 1963 T.F.H. Publications, Inc.  
Second Class Postage Paid at Jersey City, New Jersey. Published monthly by T.F.H. Publications, Inc. at 245 Corporation Avenue, Jersey City 2, N.J. Printed in U.S.A.

## EDITORIALLY . . .

It is always a bad piece of news to hear that an aquarium society is disbanding or on the point of doing so. Often these societies were once fairly large organizations with a membership of a hundred or so. What causes the downfall of a society? Usually it is just plain boredom. If the membership takes the time to attend meetings, and this frequently represents an outlay for transportation costs, they expect some kind of an organized program when they get there. Of course there are some nights when a speaker is prevented from getting there and a program falls to pieces. This is the time for the officers to tax their ingenuity and whip up a program on the spur of the moment, such as open discussions of subjects brought up by the other members, or if they are lucky enough, to have a member get up and give an extemporaneous talk on a subject with which he is conversant in the aquarium field. Sometimes these "off-the-cuff" programs are more fun than the planned ones, if properly handled. But if time after time the members come to a meeting and find only a few people there and no program planned, they're going to stop coming. Being an officer in an aquarium society, or any other society for that matter, is a challenge. Can you plan meetings that will have not only the members but guests as well coming, or are you letting things slide with the "I can't do it all" excuse? Nobody expects you to do it all, but everybody expects you to do your share! Be an asset to your society, not just a hanger-on. The real test of whether or not a group of officers is successful is to compare the membership figures when they begin with the figures when they go out. If they have gone far down, you aren't losing much. On the other hand, if your membership has increased by leaps and bounds, those officers are the ones you want to re-elect. These are the talented few who know what is wanted, and how to go about presenting it!

*William Vanderwalker*



**UNDERWATER STARFISH**  
An amazing Astron Guppy that swims in a steady stream pushing from its fins and sticks down over the rock ledge.



**RED ANEMONE**  
This strikingly beautiful Astron Guppy variety is available in both yellow and red. Both are available in a choice of colors.

**THREE STARS of the AQUATIC WORLD**

**GUARANTEED in writing**






**STAR AIR PUMP**

New, improved model of the most powerful vibrator pump on the market. This low-priced quality pump now comes with a registered two-year guarantee.

AQUA AIR PRODUCTS • 4725 EAST 10th AVE. HIALEAH, FLORIDA

## New Introductions from the Delta Aquarium

BY BILL HEARIN  
Delta Aquarium, Miami, Florida



Three magnificent male Variatus Platys developed by Bill Hearin of Delta Fish Farm. The red variety, top fish, is called a Red Delta Top-sail Variatus. The center fish is known as the Hearin Top-sail Variatus. The lower fish is called a Yellow Delta Top-sail Variatus. Photo by Dr. Herbert R. Axelrod.



# BRAND NEW

**The Most Sensational Fish Food You Can Buy . . . Guarantees Your Fish Better Growth, Vigor, and Coloration or Your Money Back!**

Now you can be *sure* your fishes and turtles get all the vitamins, minerals, protein, and bulk they need. No more spitting out essential foods they don't like—foods that collect on the bottom to cloud and contaminate your aquarium.

New Oscar foods are in *pellet* form, and each formula is blended with natural foods your fishes and turtles can't resist—shrimp, tuna, crab, liver, and high-protein whale meat. Either this revolutionary food gives them better growth, vigor, and coloration in 30 days, or you get your money back . . . no questions asked (see below).



**HERE'S HOW IT'S DONE:** Shown are some Tropical Fish Food pellets, in "coarse" grade. Each of these tiny pellets contains a balanced diet. Each contains an exacting blend of the nutrients your fishes must have for healthy growth, color, and coloration. Note the absence of powdery waste, the uniform size. Only the finest materials were used, and only Oscar's unique triple-grind, mix, press, and grading process makes this possible . . . guarantees you the finest fish food your money can buy.

## 5 SPECIAL FORMULAS

Each of five special formulas contains its own concentration of those nutrients ichthyologists state are the most beneficial to each variety of fish: a 64% protein formula for the tropical fish and guppy foods; a concentrated carbohydrate formula for goldfish; a concentrated vegetable base formula for mollies. The turtle formula is fortified with vitamins A and D to help prevent soft shell.

**TRY THIS FREE OFFER.** Ask your dealer for your free sample of Oscar food. There's one for mollies, guppies, tropical fish, goldfish, and turtles, in several pellet sizes. If he has yet to stock Oscar foods, let us know. We'll see that free samples are sent to him immediately.

### GUARANTEED

*If your fishes or turtles don't actually look better and more vigorous in just 30 days of feeding with the specified formula, return the unused portion to your dealer and your money will be refunded. Buy a can of Oscar Fish or Turtle food today!*

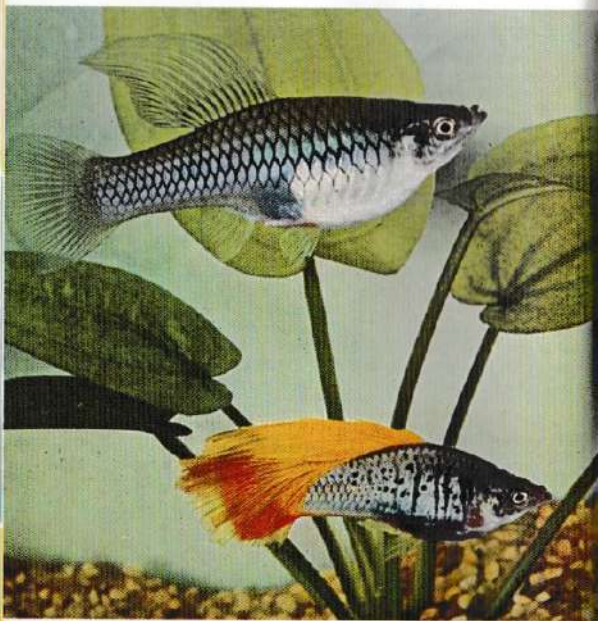
**OSCAR ENTERPRISES, INC.** / 1214 FIFTH ST. DEPT. C BERKELEY, CALIFORNIA

When I first saw the now-famous Simpson Hi-Fin Swordtail, I was just about as greatly impressed as anyone, but being a fish-breeder I immediately began to wonder what the possibilities were of developing that magnificent dorsal fin in some of the other livebearers. Knowing that hybrids produced by crossing Swordtails with either Platies or Variatus Platies were not only beautiful things but also mostly fertile, this was the obvious decision. But which to begin with? I decided that the majestic high fin would look best on a Variatus Platy. Here was my starting point.

The first results were somewhat disappointing. Not only were the colors dull and faded out, but the males kept getting a short, stubby sword to remind me of their Swordtail forebears. I wanted my fish to look like Variatus, and to have that beautiful dorsal fin alone from the Hi-Fin stock. This took plenty of patience (a necessity with a fish-breeder!), plus a lot of inbreeding and linebreeding, but the results were worth it.

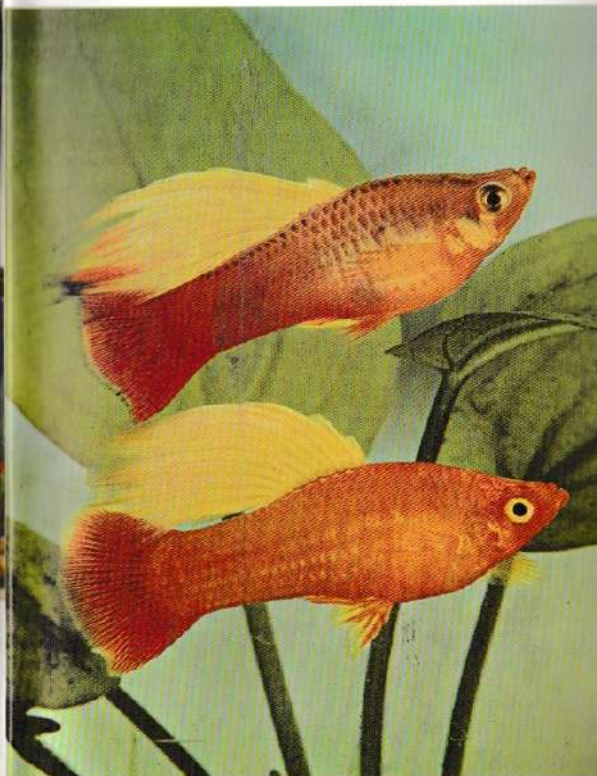
The new Delta large-finned strain is really three separate strains. There is a red variety, a yellow variety, and a variegated variety. In each variety, the dorsal fin is even more highly developed than it is in the Simpson Hi-Fin strain. Females of the new Delta strains show less color than the males, as is to be expected, but they have good dorsal fin development, comparable to that of the males. In another new Delta strain, the Ruby Yellowtail Platy, Variatus, the dorsal fin of both male and female shows less extension, but the

Bill Hearin, owner of Delta Aquarium in Miami, has produced some of the most beautiful fishes to be seen in the 1963 season!



The female (top fish) of the Hearin Toppail Variatus is not of the colorful pattern of the male, but she does show a larger than normal dorsal fin. Photo by Dr. Herbert R. Axelrod.

Bill Hearin developed these beautiful Yellow and Red Delta Toppail Platy Variatus from Mrs. Simpson's beautiful Hi-Fin Swordtails. The billowing yellow dorsal fin is much larger than that found on most Hi-Fin Swordtails. Photo by Dr. Herbert R. Axelrod.

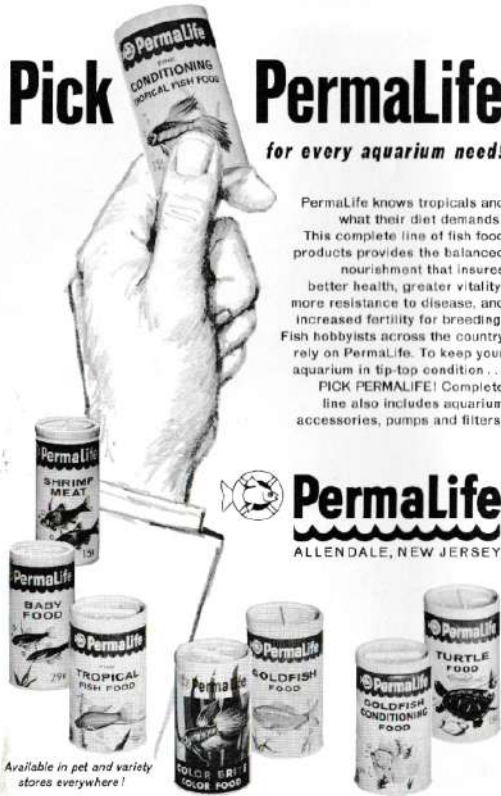




# Pick PermaLife

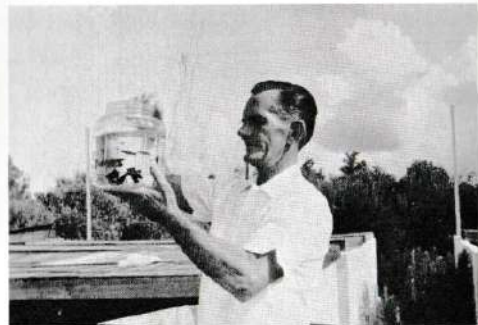
for every aquarium need!

PermaLife knows tropicals and what their diet demands! This complete line of fish food products provides the balanced nourishment that insures better health, greater vitality, more resistance to disease, and increased fertility for breeding. Fish hobbyists across the country rely on PermaLife. To keep your aquarium in tip-top condition... PICK PERMALIFE! Complete line also includes aquarium accessories, pumps and filters.



Available in pet and variety stores everywhere!

**PermaLife**  
ALLENDALE, NEW JERSEY



Bill Hearin personally checks on the development and progress of the strains under cultivation of Delta Aquarium.

pleasing body color of the fish is enough to make it popular. Another new Platy strain, less spectacular in color and finnage than the others, is the Delta Platy.

Most failures, I find, are due to a lack of patience and wrong selection of breeding stock in development, but mostly lack of patience. Most breeders will make only four or five crosses, and if something sensational does not happen within that period they give up, whereas at that stage they are just getting started. My advice is to establish in your mind what you are going to develop and study as you go along what genes are dominant and what are recessive. With this as a guide, linebreed and crossbreed for the greatest advantage at this point and you will be surprised at the final results. Here at Delta we are constantly working to develop new beauties and improve some of the present favorites. The Topsail Variatus is only one; we have other varieties that we are working on.

Delta Aquarium has long been known for its beautiful Guppy strains. The Flamingo Red Tail Guppy and the Colorama and Painted Guppy, as well as many Delta Tail strains, were no accidents; a lot of work went into their development, and the job is a never-ending one. Any Guppy breeder will tell you the same thing: a strain never stands still. It is always either improving or backsliding. It progresses only as long as you weed out the undesirables. As soon as you stop weeding, your strain goes into a fast decline. Our new Guppy, which we call the Fantastic Guppy, is highly colored, with very little variation from male to male.



Bill Hearin produced a magnificent Ruby Yellowtail Platy Variatus, as evidenced by this colorful pair, male above. Photo by Dr. Herbert R. Axelrod.



Delta's Bill Hearin prides himself on producing beautiful fish. Here is a magnificent example of one of his Delta Platies. Photo by Dr. Herbert R. Axelrod.

Two male Hearin Topsail Variatus at play. These fish seem to be very hardy and extremely active. Photo by Bill Hearin.



One of Delta's newest Guppy creations is the Fantastic Guppy, a fixed strain with males colored alike. Photo by Dr. Herbert R. Axelrod.

Delta's Red Silver Tip Tetra is a tank-raised variety of the *Hemigrammus nonus* which was developed from some sports which were received from Brazil. Photo by Dr. Herbert R. Axelrod.







Joseph Jardim, one of British Guiana's largest fish exporters, poses in his fish house, one of South America's cleanest.

tropical fishes. The fact that during the old days of piston airplanes Pan Am stopped at Georgetown for refueling and cargo pickup meant that there was the opportunity to ship live fishes from British Guiana to Miami and New York. Nearly all South American fishes except Discus and Neons came from British Guiana ten years ago. B.G. saw a lot of fish people come and go, and it was with a heavy heart that I learned that an old, true friend, Leonard Rafferty, had died only a few months before.

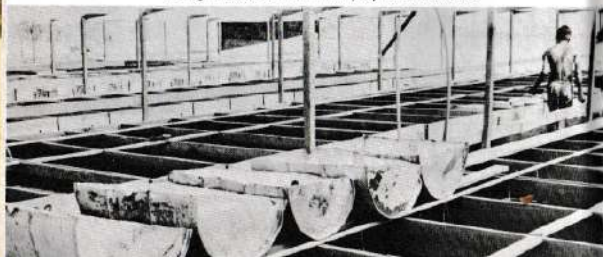
As soon as we landed we were greeted by Joseph Jardim, one of the

country's two largest fish exporters. Jardim, of Portuguese descent, proudly proclaims that his 'hatchery' is by far B.G.'s most beautiful and clean, and one look at its sparkling sand floors and newly painted steel drums makes you forget how difficult it is to maintain any degree of cleanliness in the tropics. Jardim was right. His place was neat and clean . . . probably the neatest and cleanest I have seen in South America!

Jardim's critics have often called him a Communist. He is not a Communist; he despises the present left-wing movement to take over British Guiana, and he fights it as best he can. His idea is to stay in business and fight the takeover from within. "After all," he says, "how can I fight them from the grave?"

As we had arrived from Brazil laden with thousands of preserved fishes, jaguar skins, Indian bows and arrows and miscellaneous fishing and photography gear, Jardim drove us from the airport to his home, which is also connected to his hatchery. He proved to be a very thoughtful host and made our stay in B.G. very comfortable and pleasant.

Jardim bought used 55-gallon gasoline drums and cut them (with a welding torch) to form two long halves. The drums were then scraped and painted and are excellent for storing fishes. Of course, fish that jump must be covered!



Changing the water in the steel drums is a never-ending task for Jardim's boys. The fellow on the right is siphoning off feces and uneaten food from the bottom, while his assistant adds aged water to the drums.

The first thing we did, after stowing some of our gear in Jardim's house, was to look over his setup. Jardim has several sheds, the largest of which covers a few hundred split gasoline drums. During the war, airplane fuel was stored in 55-gallon drums, and when these drums are split lengthwise and painted, they form excellent storage tanks. They are used throughout B.G. and Trinidad, where they have little value for anything except tropical fishes once they have been emptied.

The natural floor of Jardim's fish house was mud, but Joe brought in

tons of sand and spread it to a depth of 6 inches over the floor of the fish house, making a very neat and trim water-absorbent facility. His water comes from several sources, and he has both acid and alkaline water available to him, a very valuable asset to say the least.

Among the fishes that Jardim (and all other B.G. fish exporters) specializes in are the following: Gold Tetras (*Hemigrammus armstrongi*), Marble and Silver Hatchetfishes, the B.G. Headstander (*Cacnostrupus maculatus*), the new *Corydoras bondi*, Head and Tail Lights, various types

Several times a day, Jardim himself inspects every drum of fish. Sub-standard fishes are destroyed, and the fishes are conditioned for several weeks prior to shipment to they will be strong and well acclimated to life in a small body of water.



September, 1963

# NO FINER AIR PUMP EVER BUILT!



Eugene G. Danner Mfg. Inc.  
1667 Summerfield Street • Brooklyn 27, N. Y.

OTHER SUPPLIES PRODUCTS  
• Aquarium Aeration Filter • Filter pump, motor, thermostat  
• Heated Aquarium Glass • Alkaline drains, strainers, and air  
• Pressure gauge and air regulator, pump • Plant traps, pump platform  
• Water and other items

Please Mention T. F. H. When Writing to Advertisers

19

September, 1963



let  
**PEMCO**  
solve your  
**REFLECTOR**  
**PROBLEMS**

### ✓ CHECK THESE FEATURES

- ✓ A MODEL TO FIT EVERY BRAND OF AQUARIUM.
  - ✓ ATTRACTIVELY PRICED.
  - ✓ MADE OF HIGHLY POLISHED STAINLESS STEEL.
  - ✓ HAVE UNDERWRITER'S APPROVED WIRING.
  - ✓ Two piece construction, reflector and backstrip, covering the entire aquarium top. Backstrip has five knockout holes for easy installation of heaters, thermostats, etc. Lifts out for access to service equipment without disturbing the aquarium set-up. Pemco Reflectors 20" and longer available in Fluorescent.
- Convert Incandescent Reflectors to Fluorescent with the PEMCO FLUORESCENT UNIT. Complete unit easily installed — only one bolt required. Thus you can utilize the NEW GEO-LUX LAMPS.

'E' TYPE		UNIVERSAL TYPE	
Cat. No.	Approx. Length	Cat. No.	Length (incl. backstrip)
14E	14 1/2"	8-0	16 1/2"
16E	16 1/2"	8-0	20 1/2"
18E	18 1/2"	14-0	24 1/2"
20E	20 1/2"	16-0	28 1/2"
24E	24 1/2"	17-0	30 1/2"
30E	30 1/2"	18-0	30 1/2"
		20-0	30 1/2"
		24-0	30 1/2"
		28-0	30 1/2"
		30-0	30 1/2"
		36-0-11	36 1/2"
		36-0-14	36 1/2"
		36-0-16	36 1/2"
		36-0-18	36 1/2"

\*Supplied with two light sockets, individually controlled.

Manufactured by

**Patt Engineering & Manufacturing Co.**  
16539 South Main St. • P. O. Box 110 • Faculty 1-5851 • Gardena, Calif.  
ORDER FROM YOUR PEMCO DISTRIBUTOR OR WRITE DIRECT

21



**Tropical Fish Hobbyist**



Take A Feeding Tip From Internationally Known Breeders, Exhibitors. See Big Improvement In Your Fish.

Yes, you can now bring breathtaking beauty to your tropicals the easy, fool-proof way... with Rut-King fish foods. Developed by Dr. John Rutkowski and Larry Konig, eminent breeders, authors, lecturers, Rut-King foods give you more balanced nutrition than any other prepared food. And Rut-King is actually more economical because it's all food; contains no "fillers". Ounce for ounce, Rut-King is the most nutritious dry food you can buy!

**WORKS LIKE MAGIC!** Yet only the results are magic. The real key is in the method of feeding these three Rut-King foods. And you'll find the Rut-King feeding method fully explained in the manual given FREE with every purchase.

**3 FOODS FOR ALL DIT NEEDS: PRO!**

For all sizes, species. Used by professional breeders.

1 1/2 oz. 60¢ 6 oz. \$2.39

**BOOSTER®**

The most nearly perfect conditioning food and diet supplement.

1 1/2 oz. 75¢ 6 oz. \$3.25

**GUPPY FOOD**

All-purpose guppy food and nutritious food for fry. Use wherever a "micro" grind is needed.

1 1/2 oz. 60¢ 6 oz. \$2.39

**GET RUT-KING AT YOUR DEALERS.**

If he can't supply, order direct. Post-paid on \$2.00 or more. Send cash, check, money order. No COD. FREE with order. Rutkowski-Konig "Feeding Manual"



Please Mention T.F.H. When Writing to Advertisers

**ALL THESE SHOW WINNERS USE AND RECOMMEND RUT-KING FOODS**

**WARREN YOUNG**, Little Falls, N. J. '51 AFA Eastern Show, 1st Place, Siskind. (Only dry food I ever use is Rut-King.)

**EMILE PARO**, Ansonia, Mass. '51 AFA Eastern Show, 2nd Place, Siskind; 2 1st Place, Regular Class. Consistent winner. I feed Rut-King and live food to develop champions.

**ARNOLD SWEENEY**, N.J. Bergen, N.J. '51 AFA Eastern Show, 1st Place, Siskind. Winner in major U.S. shows. "You'll always find Rut-King in my fish room. It's the only dry food I feed."

**REPORTS LIKE THESE PROVE RUT-KING FOODS ARE BEST FOR YOUR FISH!**

"Most of the credit for my prize winners goes to Rut-King foods. For accurate information in Rutkowski-Konig's 'Feeding Manual', I'd like to thank you. I'm a fisherman from Little Falls, N.J. (Rutkowski-Konig's 'Feeding Manual')."

"Whenever I need a 'micro' food, I find Rut-King Guppy Food just what I need. **Reinhold Riese**, Roseland, N.J., noted breeder."

"For size, long life and natural color, nothing beats Rut-King. **Louis Restoro**, N.J. Bergen, N.J., World renowned breeder."

"I use—and always recommend Rut-King foods to my customers. **Sam Rosales**, owner FISHBOWL, Irvington, N.J. (Nationally known specialist of some of the world's rarer and most exotic tropicals.)"

**Rosario La Corte**, Elizabeth, N.J. Author, breeder, importer, exhibitor. "I use, recommend and use Rut-King foods for fry and adults of these species."



of Pencilfishes of the genera *Nannostomus* and *Pencilbrycon*, *Metyonnis*, *Piranhas*, *Cichlasoma festuatum* (which has a very wide range over South America), wild Angelfish, Kratfish, Electric Eels, *Cichlasoma severum*, various *Leporinus* species, and some mixed livebearers such as wild Guppies. Jardim, like most other exporters, imports Neons, Cardinals and Discus from Brazil, mostly

The plastic bags are square, so there are no edges or corners in which fishes can get stuck, die, and foul the water. The net is hand-made with a fairly thick handle, since a man will be using it 8 hours a day.



Riese makes a final inspection of the fishes before the bag is closed. It is at this stage that he adds his "sleep" drug.



Before the fishes are shipped, they are counted and put into double corrugated boxes with double plastic bags. Each bag is carefully inspected to be sure that it contains no more than 5 quarts of water and that the fish are swimming properly. Bill Riese of Aquatic Fisheries, 1606 Pelham Parkway South, New York, N.Y., is supervising the shipment, since the fishes are going to his organization. Riese owns the largest wholesale fish operation in New York.

from H. W. Schwartz of Manaus, since there is a daily plane from Manaus to Georgetown via Boa Vista, Brazil.

Jardim considers himself a sophisticated and educated man in the fish business, and rightly so. His library contains all of the latest books



The bag is collapsed and re-inflated with pure oxygen. The use of oxygen and a metabolism reducer has enabled Riese to ship two to three times the normal number of fishes in less water. Instead of cutting the price on his fish, he gives them more time to acclimate to tanks, and they are much harder.

on the subject, and he has experimented with the new "sleep" drugs which enable a shipper to send almost twice as many fish in the same amount of water as he can without use of this material. Bill Riese, whose drug slows down the fishes' metabolism almost to 50% of normal, zealously guards the secret of how much to use with each species, as his ability to crowd 700 Pencilfish in a bag of 5 quarts of water, and fly them for 48 hours, has led to his being New York's largest fish importer. Riese supplies his drug to the people who ship him fishes, but he doesn't tell them what it is or how to get it. Every fish importer has one drug or another (Wardley Products Co., 44-01 11th Street, Long Island City 1, N.Y. markets a product for reducing

fishes' metabolism during shipment) but their efficiency is greatly variable. One drug, used by several Eastern fish shippers, successfully transports the fish, but they are so delicate after the trip that the slightest knock on their aquarium is enough to put them into shock!

Jardim ships his fishes to many people around the world, but Riese is probably his single largest customer. While we were there, Jardim prepared a shipment for Riese, and I was fortunately able to photograph the shipment step-by-step.

After collecting the fishes, Jardim stores them for a few weeks in his barrels, changing their water every day and feeding them heavily so they will grow back finnage which might have been damaged during their transport from the jungle. This

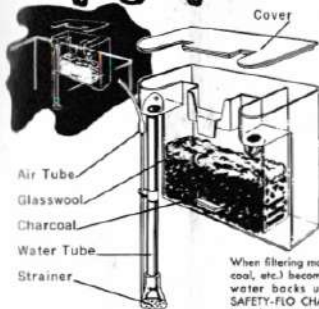
Each box is carefully sealed under the watchful eyes of Jardim himself. For a long time some airlines refused to handle fish because of the leakage from metal cans. Plastic bags, if properly checked before use, practically eliminate water damage from leaky fish boxes.



September, 1963

**New FOR MAXIMUM PROTECTION OF YOUR TROPICAL FISH!**

**EUREKA OUTSIDE AQUARIUM Safety-flo FILTER**



**THE ONLY ONE THAT "SIGNALS" WHEN IT NEEDS CLEANING!**

When filtering material (glasswool, charcoal, etc.) becomes clogged, circulating water backs up in the PATENTED SAFETY-FLO CHAMBER and flows back into the aquarium... Instant Signal to change and clean the filtering material.

**NO SIPHON TUBE NEEDED** High speed filtering action starts automatically when air line is attached.

Includes — FREE — extra length of water tubing and connection for deep tanks.

FITS ALL TANK RIMS UP TO ONE INCH WIDE. Full cover for protection against dust and dirt.

WORLD'S FINEST AQUARIUM PRODUCTS manufactured by **EUREKA PRODUCTS COMPANY** 309 HILLSIDE AVE. HILLSIDE, N. J.





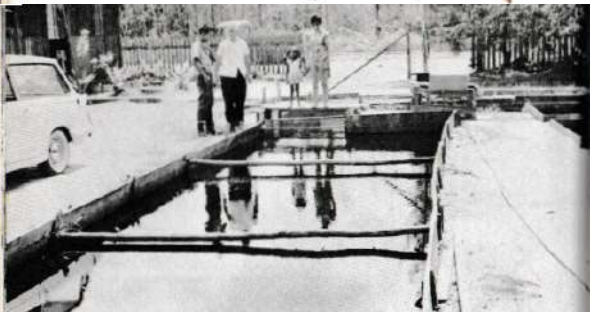
Into the hold of this Pan American jet goes Jardim's shipment of 50,000 tropical fish to Riese's Aquatic Fisheries in New York. The trip takes about 12 hours or less, but with the system that Riese and Jardim developed, they are able to ship fishes under "steep" and oxygen for 48 hours without any difficulty.

aging of the fish in small bodies of water is very important, for so many exporters ship green fish (fish which haven't been acclimated to aquarium life are called "green" fish and they sell for half the price of acclimated fish). After the weaker specimens have died off, Jardim separates the fish according to size and species and continues to feed them heavily until he receives his order from Riese. As soon as Riese indicates which fishes he wants, Jardim calculates the number of boxes necessary to transport these fishes to New York and makes a reservation with Pan American for their flight to New York via Trinidad.

The night before the flight, Jardim sets up the double cardboard

boxes, puts in a double plastic bag, and fills each bag with exactly 5 quarts of water. He allows this to stand overnight, and a few hours before plane time (which could be 4 A.M.) he and his crew get ready for the shipment. First Jardim personally checks the fishes to be sure that nothing has gone wrong. He then has the fishes counted and put into their individual boxes. After all the fishes have been put into the plastic bags in their respective boxes, Jardim takes another look and removes any specimens which aren't swimming properly. He then adds the necessary amount of "sleep" drug to each box and again carefully checks each box to be sure that the fish look right, that the bags don't leak, and that the fish

26



In Louis Chung's fish farm, a black water creek is diverted through a series of wood-lined channels so that every pool is constantly bathed in changing water.

are the ones Riese ordered. He then supervises the oxygenation of each bag very carefully. First the bag is collapsed so that there is little, if any, air in it at all. Then a rubber tube is inserted into the bag and the bag is inflated with pure oxygen. This technique was first used by the author in 1952, when oxygen and plastic bags were first used for trans-

porting fishes because the airlines complained that the metal cans often leaked from splashing water.

After Jardim fills the hundred-odd boxes of fish (actually the term should be "bags" of fish, but the trade calls them boxes instead), the bags are made oxygen-tight with strong rubber bands holding the bag sealed. The double boxes are

An emergency pump is maintained in the dry season in case the water level falls too low and additional water is necessary. Chung stores huge quantities of fishes in these pools. He pulls them out prior to shipment.



September, 1963

THE FINEST OFFERED ANYWHERE



Madagascar dwarf lily

**DEALERS ONLY:**  
Write for our current catalog and price list of AQUATIC PLANTS—the finest offered anywhere, plus a complete line of AQUARIUM ACCESSORIES, TROPICAL FISH and GOLDFISH.®  
**WHOLESALE ONLY**

Our truck delivers in the greater Los Angeles area.



**PACIFIC GOLDFISH FARM**  
WESTMINSTER, CALIFORNIA

"Largest Breeders and Distributors of Fancy Goldfish and Tropical Fish in the West"

27



Adjacent to the Chung farm is a shed in which fishes are stored prior to shipment.

then pasted sealed, and the fishes are hauled to the airport 1 1/2 hours before the plane is scheduled to depart. Jardim waits at the airport until the plane departs to be sure that the fishes aren't left out in the sun to overheat. It is this extra care that makes a great deal of difference between an ordinary fish exporter and a good businessman!

But don't let me lead you to believe that Jardim is the only man in the fish business in B.G. He is not. Probably the most famous fish man in all South America is Louis Chung. Chung has been exporting tropical fishes from British Guiana for almost 20 years, and he certainly is a very experienced man who spends much of his time looking

If you look into most men's pockets you will find a cigarette lighter, some money, perhaps a few keys and a collar-button. In Riese's pocket you find a small pH Kit for testing the acidity and alkalinity of water. How can you possibly expect fish to do well in alkaline water of pH 8 (such as is found in most Florida fish farms) when the fish come from pH 6.0? Riese adjusts the pH in his tanks in New York and Florida to be the same as the water from which the fishes are caught or maintained by the exporter. Riese's losses are under 1%... and he handles 10,000,000 fish a year.







voracious species. Adjacent to his pools is a huge shed for the storage of additional fishes. Chung prefers wooden tubs to steel drums, as you can see from the accompanying photographs. Reese also buys fishes from Chung, since there isn't any one exporter large enough to handle the volume of fishes that Reese needs for his Aquatic Fisheries.

Unfortunately, at the time of our visit in December, 1962, Louis Chung was recuperating from a heart attack, but his son Barry and his daughter Mariynn were very capably running things in his absence. Mrs. Chung was, at that time, visiting the Indians in the jungle on the Brazilian border, distributing her usual Christmas presents.

All in all, our visit to British Guiana was interesting and relaxing. Georgetown has beautiful hotels and, as is typical of all British colonies, the city is clean, with decent people with a respect for law and order. The population of British Guiana is composed of British, Indian (from India), indigenous Indians, Negroes and Continental Europeans (like Jardim). The striking beauty of some of the Indian families is matched only by their industriousness and hospitality, and since fish collecting wasn't my primary purpose during this trip to British Guiana, I did take time to visit the beautiful public zoo and museum . . . but since Christmas was just a week away, I was anxious to get back home.

These beautiful children of the Ibbotse of Georgetown, British Guiana, are fine examples of the great beauty possessed by the Indian people of South America.



Can you identify this fish? Do you know where it comes from? What are its spawning habits? How about this one? Could you breed it for money? If you can answer these questions definitively, or if you can get an authoritative answer in a jiffy, don't read further. But if you don't know all the answers and can't get them in a hurry — in short, if you are a hobbyist who really is bent on learning all there is to know about tropical fishes, aquarium management and, yes, commercial breeding, — buy this book. Its 892 pages alive with almost 600 illuminating color photographs by the world's foremost authorities makes it the best investment you, as a hobbyist, can make. Exotic Tropical Fishes is available at your pet shop in two editions: hardbound and looseleaf to accommodate supplements by the authors.

\$20 per copy.



**PET BOOKS HANDY-ORDER FORM**  
All of these TFH books are available at your local pet supplier.  
If ordered from the publisher add 25¢ for postage and address  
your request to TFH BOOKS, P.O. Box 33, Jersey City 2, N.J.

Cat No.	Title	Price	Cat No.	Title	Price
1-1	TROPICAL FISH	20	1-101	DOG BOOKS	10
1-2	African Fishes	20	1-102	DOG BOOKS	10
1-3	African Fishes	20	1-103	DOG BOOKS	10
1-4	African Fishes	20	1-104	DOG BOOKS	10
1-5	African Fishes	20	1-105	DOG BOOKS	10
1-6	African Fishes	20	1-106	DOG BOOKS	10
1-7	African Fishes	20	1-107	DOG BOOKS	10
1-8	African Fishes	20	1-108	DOG BOOKS	10
1-9	African Fishes	20	1-109	DOG BOOKS	10
1-10	African Fishes	20	1-110	DOG BOOKS	10
1-11	African Fishes	20	1-111	DOG BOOKS	10
1-12	African Fishes	20	1-112	DOG BOOKS	10
1-13	African Fishes	20	1-113	DOG BOOKS	10
1-14	African Fishes	20	1-114	DOG BOOKS	10
1-15	African Fishes	20	1-115	DOG BOOKS	10
1-16	African Fishes	20	1-116	DOG BOOKS	10
1-17	African Fishes	20	1-117	DOG BOOKS	10
1-18	African Fishes	20	1-118	DOG BOOKS	10
1-19	African Fishes	20	1-119	DOG BOOKS	10
1-20	African Fishes	20	1-120	DOG BOOKS	10
1-21	African Fishes	20	1-121	DOG BOOKS	10
1-22	African Fishes	20	1-122	DOG BOOKS	10
1-23	African Fishes	20	1-123	DOG BOOKS	10
1-24	African Fishes	20	1-124	DOG BOOKS	10
1-25	African Fishes	20	1-125	DOG BOOKS	10
1-26	African Fishes	20	1-126	DOG BOOKS	10
1-27	African Fishes	20	1-127	DOG BOOKS	10
1-28	African Fishes	20	1-128	DOG BOOKS	10
1-29	African Fishes	20	1-129	DOG BOOKS	10
1-30	African Fishes	20	1-130	DOG BOOKS	10
1-31	African Fishes	20	1-131	DOG BOOKS	10
1-32	African Fishes	20	1-132	DOG BOOKS	10
1-33	African Fishes	20	1-133	DOG BOOKS	10
1-34	African Fishes	20	1-134	DOG BOOKS	10
1-35	African Fishes	20	1-135	DOG BOOKS	10
1-36	African Fishes	20	1-136	DOG BOOKS	10
1-37	African Fishes	20	1-137	DOG BOOKS	10
1-38	African Fishes	20	1-138	DOG BOOKS	10
1-39	African Fishes	20	1-139	DOG BOOKS	10
1-40	African Fishes	20	1-140	DOG BOOKS	10
1-41	African Fishes	20	1-141	DOG BOOKS	10
1-42	African Fishes	20	1-142	DOG BOOKS	10
1-43	African Fishes	20	1-143	DOG BOOKS	10
1-44	African Fishes	20	1-144	DOG BOOKS	10
1-45	African Fishes	20	1-145	DOG BOOKS	10
1-46	African Fishes	20	1-146	DOG BOOKS	10
1-47	African Fishes	20	1-147	DOG BOOKS	10
1-48	African Fishes	20	1-148	DOG BOOKS	10
1-49	African Fishes	20	1-149	DOG BOOKS	10
1-50	African Fishes	20	1-150	DOG BOOKS	10
1-51	African Fishes	20	1-151	DOG BOOKS	10
1-52	African Fishes	20	1-152	DOG BOOKS	10
1-53	African Fishes	20	1-153	DOG BOOKS	10
1-54	African Fishes	20	1-154	DOG BOOKS	10
1-55	African Fishes	20	1-155	DOG BOOKS	10
1-56	African Fishes	20	1-156	DOG BOOKS	10
1-57	African Fishes	20	1-157	DOG BOOKS	10
1-58	African Fishes	20	1-158	DOG BOOKS	10
1-59	African Fishes	20	1-159	DOG BOOKS	10
1-60	African Fishes	20	1-160	DOG BOOKS	10
1-61	African Fishes	20	1-161	DOG BOOKS	10
1-62	African Fishes	20	1-162	DOG BOOKS	10
1-63	African Fishes	20	1-163	DOG BOOKS	10
1-64	African Fishes	20	1-164	DOG BOOKS	10
1-65	African Fishes	20	1-165	DOG BOOKS	10
1-66	African Fishes	20	1-166	DOG BOOKS	10
1-67	African Fishes	20	1-167	DOG BOOKS	10
1-68	African Fishes	20	1-168	DOG BOOKS	10
1-69	African Fishes	20	1-169	DOG BOOKS	10
1-70	African Fishes	20	1-170	DOG BOOKS	10
1-71	African Fishes	20	1-171	DOG BOOKS	10
1-72	African Fishes	20	1-172	DOG BOOKS	10
1-73	African Fishes	20	1-173	DOG BOOKS	10
1-74	African Fishes	20	1-174	DOG BOOKS	10
1-75	African Fishes	20	1-175	DOG BOOKS	10
1-76	African Fishes	20	1-176	DOG BOOKS	10
1-77	African Fishes	20	1-177	DOG BOOKS	10
1-78	African Fishes	20	1-178	DOG BOOKS	10
1-79	African Fishes	20	1-179	DOG BOOKS	10
1-80	African Fishes	20	1-180	DOG BOOKS	10
1-81	African Fishes	20	1-181	DOG BOOKS	10
1-82	African Fishes	20	1-182	DOG BOOKS	10
1-83	African Fishes	20	1-183	DOG BOOKS	10
1-84	African Fishes	20	1-184	DOG BOOKS	10
1-85	African Fishes	20	1-185	DOG BOOKS	10
1-86	African Fishes	20	1-186	DOG BOOKS	10
1-87	African Fishes	20	1-187	DOG BOOKS	10
1-88	African Fishes	20	1-188	DOG BOOKS	10
1-89	African Fishes	20	1-189	DOG BOOKS	10
1-90	African Fishes	20	1-190	DOG BOOKS	10
1-91	African Fishes	20	1-191	DOG BOOKS	10
1-92	African Fishes	20	1-192	DOG BOOKS	10
1-93	African Fishes	20	1-193	DOG BOOKS	10
1-94	African Fishes	20	1-194	DOG BOOKS	10
1-95	African Fishes	20	1-195	DOG BOOKS	10
1-96	African Fishes	20	1-196	DOG BOOKS	10
1-97	African Fishes	20	1-197	DOG BOOKS	10
1-98	African Fishes	20	1-198	DOG BOOKS	10
1-99	African Fishes	20	1-199	DOG BOOKS	10
1-100	African Fishes	20	1-200	DOG BOOKS	10

# MAIL CALL

If you have an aquarium question and cannot find the answer in any of the standard reference texts, send it to MAIL CALL. Each month this column will publish the most interesting questions received and their answers. Letters containing questions cannot be acknowledged or answered personally. Address all questions to: MAIL CALL, T.F.H. Publications, Inc., 245-247 Comellison Ave., Jersey City 2, N. J.

**A matter of identity.**  
Q. I have just bought a fish at one of our nearby pet stores. They didn't have any information on this fish and I couldn't find any in my books. The name of the fish is "Polydora". I would like to know the difference between the male and female, how they breed, and if they are a community fish. The fish looks like a Croaking Gourami with pointed caudal



**Macropodus cupanus dayi.**

**Croaking Gourami**

**Macropodus cupanus dayi.**

fin, no extension on the anal fin. The body is brown, with a light blue around the edges of the fins.

**Steve Harriman, Portland, Oregon.**

A. This serves to point out what some of the dealers do to the name of the fish they sell. The proper scientific name of your fish is *Macropodus cupanus dayi*, and I was able to identify it immediately by your good description. The males are distinguished by their brighter colors, but most of all by several rays which extend beyond the tip of the pointed tail. A

Please Mention T. F. H. When Writing to Advertisers

**GET BELD'S WHOLESALE CATALOG AND SPECIAL TROPICAL FISH PRICE LIST**

Aquatic Plants  
Merchandise that's different  
Make your sales sprout wings  
Fish food with a reputation  
Supplying the trade for over 30 years.

**BELD'S AQUARIUM, INC. • Hazelwood 21, Missouri**



*bubbles is built by the male, frequently below the surface of the water, under a broad leaf. The male guards the eggs and the young until they leave the bubbles. The fish are peaceful in the community tanks, but a tank of their own is preferred. A temperature between 78° and 83° is advisable for them.*

**Trouble with a Marble Molly.**

**Q.** 1. My 20-gallon tank has green spots, which look like paint spots, inside the glass. Can you tell me what they are and how to get rid of them?

**A.** 2. How soon are you supposed to take out the male Betta after the young fry have left the nest? I just had a batch of young fry and the male took good care of them the first day. Then he just let the nest go, and as I was watching, the young fry would swim up to go into the nest, but there was hardly any nest left for them to go into. The next day the nest was completely gone, and also the young fry. I took the female out right after spawning was over and gave the male live shrimp immediately.

**3.** Do you have any information on albino Paradise Fish? I have a pair that just spawned; the young fry hatched this morning. I have been told that these fish were developed by cross-breeding a Betta and a Gourami. Do you know if this is true?

**4.** I had a Marble Molly that was going to have young but just couldn't seem to pass them. She died, and when

we opened her up all the young were quite large and fully developed. Is there anything that can be done to help the female when this happens?

**Mrs. R. McCollum, Chicago, Ill.**

**A. 1.** This is a type of algae which grows on the glass in colonies. If left alone, the spots keep on growing. The only thing to do is to get rid of it by scraping it off.

**2.** As soon as the young Betta begin to swim out of the nest, the male can no longer cope with the job of keeping them together. You mention feeding the male, but you do not mention feeding the fry. As soon as the yolk-sac is absorbed a baby fish becomes ravenously hungry; if there is no food around at this time, nothing else can be taken from the body and starvation is only a short time away.

**3.** Albino Paradise Fish are no different in their spawning habits from their normal

brothers. As for being a cross between a Betta and a Gourami, they definitely are not. They are merely the albino form of the ordinary Paradise Fish.

**4.** Livebearers are frequently the victims of this kind of trouble, and there is nothing you can do for them, although one sometimes hears of someone nicking the fish's genital opening with a razor blade and releasing the young in this fashion. Nine times out of ten the result of such heroic measures is the death not only of the mother but also of the fry.

**Righteous indignation.**

**Q.** I am writing to you for help. All of our downtown stores here have not been taking good care of their aquariums or fish supplies. I am getting sick of the way they are telling people to take care of their own aquariums, such as: "If you turn off your pump at any time all of your fish will die instantly." When I try to tell them that their fish are sick and should be attended to immediately, they all give me the same story: "Oh, sure, we'll get right at it!" But they never do. So I would like some advice on what I can do about it.

**Charles Grupa**

**A.** Every dealer gets those nightmare days when everything goes wrong, when not only one tank but almost every tank in the store develops some kind of a disease, and no matter what is done nothing seems to help. But a dealer who consistently sells sick fish will soon have so many dis-

satisfied customers that he will have to close his doors. What can you do about it? Your money is your most effective weapon. Find an honest dealer who has good stock, and give him your trade. Others will doubtless make the same discovery as you did and do the same. But don't be unfair about it; every dealer has a dead fish on the bottom once in a while, and if you discover it before he does, don't jump to the conclusion that all of his fish are sick.

**A slow killer.**

**Q.** I am sending this letter so that the readers of your magazine may not experience my difficulties. Recently my father was spraying paint in the basement, where I have a 5-gallon tank. I, like most people, thought of having a cover on my tank, but not on my filter. After about two days I could see the effects. My fish started to slow down in their movements and began to turn on their sides. On the third day this killer



Marble Molly.

**Salt Water Fish!**  
Sea Horses, Angelfish, Gobies  
Butterflyfish: All Kinds

**FAST DELIVERY! Little Waiting!**  
Don't be fooled by dealers who offer cheap prices on marine fish. They can't deliver and will only disappoint you.

Send \$1.75 for Sea Horse book and colored slide. Salt Water fish is our only business. World Headquarters for Sea Horses!  
Robert P. L. Strouthern, Marine Collector.

**CORAL REEF EXHIBITS**  
P. O. BOX 59-2214  
MIAMI 59 (ART 58), FLA.  
Ph. Miami, MUhovek 6-2022

Send for free price list  
"We deliver fish not promises"

**AQUARIUM PLANTS THRIVE**

and so do fish... when you use **PLANTABBS** Aquarium Plant Foods.

Plantabbs Aquarium Plant Foods, liquid or tablets, feed your aquarium plants to thrive, are easy to use, and are beautiful. Healthy to fish, too.

Use 1 tablet to 5 gallons of water. Capable of fixing 10 to 15 gallons of water every 15 days. Guaranteed!

**PLANTABBS**  
AQUARIUM PLANT FOODS  
Plantabbs Corp. • Baltimore 1, Maryland

Top quality aquarium line, exclusive franchise

For details write to:  
**RHINEHART CO.**  
Spencerville, Indiana

started to destroy one fish after the other until it had taken a total of seven fish. Later I took the survivors out and put them in fresh water, where they began to recover in an hour's time. I hope from this little experience of mine that people will learn to cover their filter when paint is being sprayed.

**Richard Marczak, Detroit, Mich.**

**A.** A good point, Richard. Lots of people cover their tanks very carefully and then spoil the whole thing by keeping an air-stone going. If a tank is not over-crowded, it can be sealed off for many hours without doing any damage.

**Crayfish.**

**Q.** In reference to the "Overlooked Scavenger" in the April issue, by Fred Howard, I admit that the Crayfish is a very ambitious creature and an interesting one, too. Years ago we would seine them in clear rocky shallow water. They

were tasty. But by now, having read this article, I think others have written of incidents such as mine. When my nephew called me to the aquarium, the crayfish was cleaning up the last bit of a prize black lateral Angelfish. I doubt that it took sick and died. Then, while we still watched, another healthy one came flowing its veils directly through the large open pincers. Now all the crayfish had to do was to close them with great speed. He dug his tail and small feet into the gravel for a toe-hold. But he lost this one, which tore away minus some of its lace. I promptly tossed the scavenger into my back yard, the lake. Personally I believe other fish are safe with it, but not a lace or veiled Angelfish.

**John Swiderski, Walled Lake, Mich.**

**A.** Thank you for making it possible to pass on your observations to our readers,

Please Mention T. F. H. When Writing to Advertisers

**the New 1963\***

**TORSION-AIR PUMP**  
handles 5 aquariums without even trying

**1** Minimum Maintenance 1-Year Guarantee

**2** Reduced Vibration Quiet Operation

**3** Greatly Increased Pressure Functional Design

**4** Dynamic Power Of A Piston Pump "Power-Pack" Replacement

**5** Beautifully Designed High-Impact Plastic Minimum 6 Lbs. Pressure

\* Uses the same principle for smooth, efficient operation as the world's finest automobiles.

**BUCHANAN PRODUCTS COMPANY**  
2840 Gundry Avenue Long Beach 6, California

*Mr. Swiderski. The danger which you mention would also include such fish as a Betta or, in a cold-water aquarium, most of the fancy Goldfish varieties.*

**More about crayfish.**

**Q.** I have just finished reading the feature "The Overlooked Scavenger" and I would like to add that the crayfish are very useful in ridding a tank of snails. They display excellent table manners at this job, holding the snail in their claws and picking the flesh right out of the shell, then discarding the shell. In 1961 I procured my first crayfish and named it "Cindy." About four months after I had added her to my 20-gallon aquarium I noticed that she had laid about 200 eggs and was carrying them on her swimming feet. After about a month and a half, the eggs hatched. The young were about 1/16 inch long and resembled the female. Unfortunately, the youngsters all died. My question is: there was no male present when the eggs were laid, so how could they have been fertilized?

**John F. Smith, Brooklyn, N.Y.**

**A.** The answer to your question took a little digging. I have always assumed that the eggs were fertilized at the time they were laid until your inquiry convinced me otherwise. In their book The Mating Instinct, L. J. and M. J. Milne describe the process in detail. The male holds the female on her back, and with his fifth pair

of legs he transfers the sperm to the open mouth of two flask-shaped receptacles located between the fourth and fifth pair of walking legs. He then forgets all about her and some time afterward she curls up and lays the eggs.

Please mention T. F. H. when writing to advertisers



**Fall Promotion Special**  
for  
**Aquarium Shops, Pet Shops & Wholesalers**

If your name is not on our mailing list, write for prices. We will then place your name on our Mailing List for future publications.

FOR PROFIT'S SAKE  
FOR QUALITY - USE  
"Everglades"  
Plants and Fish  
EVERGLADES  
AQUATIC NURSERIES, INC.  
P. O. Box 587 Tampa 1, Fla.

**WE WANT WAWIL**  
SPECIAL TROPICAL FISH FOOD

WAWIL, STILL THE BEST FOR OVER 57 YEARS.  
An outstanding preparation for the development & growth of young fish.

Order from your dealer if not available to your area write DIRECTOR, EVERGLADES AQUATIC NURSERY, INC., TAMPA 1, FLA.



**Native plants.**

Q. 1. Can Knife Fish and Puffers be kept in the same tank?

2. Can you take plants like the kind you find here in New Jersey and put them in the aquarium? If you can't, is there any treatment you could give them so that they could be used?

Mr. & Mrs. J. Eivanyle,  
Manville, N.J.

A. 1. There are scores of Knife Fishes; some are quite gentle and others are fairly rough customers. Most Puffers (and there are many of these as well) are best kept by themselves. Therefore, unless you are more specific, I cannot answer your question.



Native plant, Socopo

Assortment of Plants  
For Your Aquarium  
Only \$4.98

SUMMER AND WINTER

Perfect for two or more Hobbyists to get together to receive an assortment of beautiful aquatic plants.

SOUTHWEST AQUARIUM  
PLANT COMPANY

P.O. Box 100 - San Marcos, Texas

Please Mention T.F.H. When writing to Advertisers

**WATER-RITE Removes Chlorine and Other Injurious Chemicals**



**Adjust pH in ONE OPERATION**

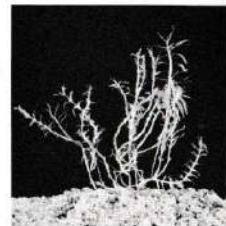
With Water-Rite, city water can be used at once—no waiting for days for the sun to remove residual chlorine, chloramine and other injurious chemicals but it adjusts the pH in a matter of minutes, thus making it safe for fish and aquarium life. AGAINST hard water for desirable fish life. Compatible with Fluorinated Water. Helps stimulate plant growth and maintains a clean balanced aquarium.

**START RIGHT WITH WATER-RITE**  
Water-Rite 80cc, 5 tablet vial—10c. 15 tablet vial—35c. 40 tablet vial—70c. also available in a 4 oz. and 1 lb. powder container.

Available at most dealer outlets or pet depts. For more information write:  
NATIONAL PET SUPPLY CO., St. Louis 3, Mo.



Native plant, Ludwigia



Native plant, Potamogeton

2. Most of our local aquatic plants are not easy to keep in an aquarium housing tropical fishes. The water temperature in a tropical aquarium is generally considerably more than what they get in a local stream. Thus there is the danger of

**NEW! CRYST-AL-WATER CAPSULES!**

Exactly what you need for easy setting-up and maintaining of healthy, crystal-clear aquarium water for tropical fishes and goldfish!

C. A. W. CAPSULES do the job of five separate aquarium products at a fraction of the cost:

- 1) Adjust pH slowly to 7.0, without making water hard.
- 2) Neutralize harmful chlorine in tap water immediately.
- 3) Control algae growth.
- 4) Neutralize and adjust cloudy or foul water caused by overfeeding or overcrowding.
- 5) Provide fish with all necessary minerals.

Simple to use... merely add contents of one capsule per 2 1/2 gallons of water. Inexpensive... 8 strip-packed capsules per card—enough for 20 gallons of water—retails for only 79¢!



3368 N. Broadway, Chicago 18, Ill.



Don't waste money any longer... specify **CRYST-AL-WATER CAPSULES**!

DEALERS: If you have not already stocked our line, order today for your next Tropical Research distributor and see the latest dealer price list!

*To The Fish Fanciers...*

Now that the war is over and travelling and transportation facilities easier to obtain, we promise the fish fanciers that in the very near future we will be able to bring on the market again some of the rare varieties of tropical fish.

An expedition is on the way now which is due back in New York by the beginning of November. We hope, at that time, to have some *Symphysodon discus*, *Leaf Fish*, *Piranha*, *Nona Tetras*, *Hatchet Fish*, rare *Catfish* and perhaps something entirely new.

As soon as travelling is permitted to the Orient, an expedition will go forth to bring back the fish which have not been seen since the prewar days.

Be patient just a little longer and you will be repaid for the time you have waited. Of course, we hope to set the prices on the rare fish within reach of everyone.

Keep in touch with your local dealer for news on new imports!

Thank you!

★ We will take up where we left off before the war!

**PARAMOUNT AQUARIUM, INC.**

This advertisement appeared in October, 1945.

Paramount Aquarium has been supplying petshops and fish wholesalers for 30 years. We still have the most complete variety of imports and domestic livebearers at the most sensible prices. Please write for our complete wholesale price list on your business letterhead, the prices and variety will amaze you!



ARDSLEY, NEW YORK P.O. Box 627, Tel. OWen 3-8900-1  
VERO BEACH, FLORIDA Municipal Airport, P.O. Box 277, Tel. JOhns 2-507-8

Introducing all sorts of enemies like *hydra*, *water tigers*, *dragonfly larvae*, *fish lice*, and many other trouble-makers from eggs on the plants. It's so much easier, and safer to buy nice clean plants at reasonable prices from your dealer.

**Bossy Angelfish.**

Q. I have two Angelfish. Both get exactly the same diet and environment, and they are the same age, but one is almost twice as large as the other. Why is this? I have also noticed that the bigger of the two chases the smaller one. Do most Angelfish get like this when they are bigger, and should I separate them?

Charles Savage,  
Mobile, Ala.

A. The second part of your question explains the first: the bigger one bullies the smaller, and therefore the smaller one remains smaller. The big one eats the greatest amount of food, and for this reason grows much more rapidly than the harassed one. Separating them for a while and giving the little fellow a chance to do a little catching up on his eating and building up his self-confidence a bit might be the answer. You've doubtless seen ads for body-building courses where the 90-pound weakling gets sand kicked in his face and then takes the course to come back and knock the stuffing out of

the big sand-kicking bully (who evidently never took the course himself) and walk off with the bee-oo-tiful girl. Maybe you can stage such a little drama yourself with your Angelfish.

Please mention T.F.H. when writing to advertisers

**FIN FARE'S FILTER-ETTE, JR.**



Whatever your aquarium needs... Fin Fare Products are there to serve you. Filter-ettes Jr. 79c, Condition-ettes \$1.09, Nylon Filter Floss 35c, Shell & Coral Pack 39c, 4-L Gro Tropical Fish Food 39c, 4-L Gro Goldfish Foods 30c, C-Blue Tonic 19c, 39c Larger Size for Store use and hobbyist. If your dealer can't supply you, send direct. Dealers and Jobbers write for price list.

**FIN FARE PRODUCTS CO.**  
1915 Porter Street  
San Bernardino, Cal.

Please Mention T.F.H. When Writing to Advertisers

Circle "AQUARIUM"

**Y. W. ONG,**  
Aquarium Supplies Specialist.  
P. O. Box 62148 98  
SINGAPORE, 14.

WHOLESALE ONLY



**MARINE FISH**  
*A. percula* and *A. epiphanos* in quantities always available!  
Sea Anemones: For *Amblystomus* as well as other colorful species.



**FRESH-WATER TROPICALS**  
(Exclusive to us only)  
*Bananae parawanensis*  
*Gambusia holbrooki*  
Laboer Air Bus  
All other Malaysian tropicals including *Chocoletto Gogranii*, *Burbotides Eucroatica*, *Deinobola Betta*, etc.

Beautiful *Cryptocoryne* species with inflorescence (unidentified). *Cryptocoryne lineata* (exclusive) - New Malaysian Sword Plant.



**THE SALINE AQUARIUM TESTER**



ECONOMICAL ACCURATE

A new way to test acidity and alkalinity of your salt water aquarium with scientific accuracy... WITHOUT INADEQUATE LIQUIDS! No more mists or fogs with spilling liquids. Insert small piece of tape. Instantly, the color chart gives you the exact degree of acidity or alkalinity. Broader range of pH measurements, too - from 6.8 to 8.4 in 5 careful graduations. Economical, fool-proof! Hundreds of tests for years of measurement.

**\$1.25**

At your local dealer or order direct from:  
**AQUARIUM STOCK COMPANY INC.**  
 31 WARREN STREET, NEW YORK 7, N.Y.  
 8070 BEVERLY BLVD., L.A. 48, CALIF.

**TAP WATER INTO SEA WATER IN SECONDS**



WITH SEIZING NEW AQUAMARINE SEA SALTS

New improved formulas with all 16 trace elements practically duplicates the actual habitat of marine fish, enabling them to thrive, to stay healthy and to retain their brilliant colors. Years of research and laboratory tests prove it safe, dependable. Universally acclaimed by hobbyists, ichthyologists. Just follow simple directions. Saline solutions in our tanks have lasted for a year or more.

1 lb. makes 3 gal. .... \$ .38  
 5 lbs. makes 15 gal. .... 4.75

At your local dealer or order direct from:  
**AQUARIUM STOCK COMPANY INC.**  
 31 WARREN STREET, NEW YORK 7, N.Y.  
 8070 BEVERLY BLVD., L.A. 48, CALIF.

**NEW! UNBREAKABLE PLASTIC BOTTLES**

**CHOSEN BY EXPERTS**



**AQUA REMEDY**

**COLORLESS AQUA REMEDY** - Recognized as your best health insurance for sound bodied fish and for quick recovery from disease or injury.

1 oz. .... \$ .300;  
 4 oz. .... 1.00; Pint ... 3.25; Qt. .... 6.00.

At your local dealer or order direct from:  
**AQUARIUM STOCK COMPANY INC.**  
 31 WARREN STREET, NEW YORK 7, N.Y.  
 8070 BEVERLY BLVD., L.A. 48, CALIF.

**NEW! UNBREAKABLE PLASTIC BOTTLES**

**CHOSEN BY EXPERTS**



**PLANT FOOD**

**MINERAL-TRACE PLANT FOOD** - Our Own Nutritious Plant and - compensates for aquarium deficiencies and maintains that natural green color in your aquarium plants.

1 oz. .... 35c; 4 oz. .... 1.25; Pint ... 4.25.

At your local dealer or order direct from:  
**AQUARIUM STOCK COMPANY INC.**  
 31 WARREN STREET, NEW YORK 7, N.Y.  
 8070 BEVERLY BLVD., L.A. 48, CALIF.

up with a female with green with black trimming. She was bred once with her father and has had 12 babies. Do you think I should breed her with a green veiltail Guppy to get a better green veiltail type?

I read your column every month and enjoy reading it very much. I have also read some of your other articles on breeding, but they are on too big a scale for me; however, I have gotten a lot out of them.

**Thomas L. LaBron,**  
 Council Bluffs, Iowa.

**A.** I think you are on the right track. Many breeders like to raise females with color in their tail. They realize that it is to the best advantage to the next generation. If you have a green veiltail male, by all means breed them. I'm glad that you enjoy the column!

**Black spots on females.**  
**Q.** I have several female Guppies all

about the same age. When they were just short of reaching maturity I noticed some black spots on their bodies; the spots formed just below the dorsal fin on the fish. Each one of the fish has one spot on each side of her body, just below the dorsal fin. Are these spots worms or are they body coloring? These fish look perfectly healthy, swim straight and eat well.


**John Puzgler,**  
 West Hartford, Conn.

**A.** 1. It is very rare that females get black spots, which are very common in males, but if your fish are healthy and lively you should not worry about it. I have seen it occasionally on my own fish.

2. Write to Northeast Council of Aquarium Societies, Inc., c/o Robert C. Marshall, 34 Stoddard St., Seymour, Conn.

Please Mention T.F.H. When Writing to Advertisers

**WHOLESALE ONLY**



An aerial view of Gulf Fish Hatchery.

If you are not receiving our monthly News Letters and Special Offering Bulletins, please give us your request and we will be happy to send these without charge.

Gulf Fish offers the world's greatest variety of different species of fish, both marine and fresh water.

We can and separate three collecting compounds and with these and our other exclusive collectors are able to always offer wonderful new and exciting varieties of tropical fish.

Our most modern plant assures you of safe, fast and dependable handling of your orders. Gulf Fish breeds all of the common sea larvae and more species of rare fish than any other single organization which guarantees you prime, fat, healthy fish.

400 items to choose from, including Emperor Tetras, Black Phantom Tetras, Clown Loach, Redtail Shark, Scala, Mandarinfish, 4-Eye Livebearers, Puffers, Knife Fish, Leaf Fish, Turfies, Salamanders, Neons, Caracaras, Amazon Swordtails, Rasboras, Archerfish, Cumbini Perch, Snakeheads, Lungfish, Electric Eels, Blue Discus, Pacific and Atlantic Marine Fish, Deluxe Snow Guppies, Raccoon fish, Notoobranchius (raccoon), etc. Minimum order \$3.00.

Collect calls accepted to place orders. FARM phone until 4 P.M. 723-3122. 723-3122. NIGHT 4:30 P.M.-1:30 P.M. 744-6707, 744-3303, 723-6163.

**GULF FISH HATCHERY**  
 P. O. BOX 102 PALMETTO, FLORIDA

*Guppy Corner*



By Paul Hahnel

**Foods, crowding and giants.**  
**Q.** I am 14 years old and have kept Guppies for about three years. After reading some articles about your breeding methods, I was curious about the following things:

1. It was mentioned that you use some dry foods. What kinds do you use for Guppies? Which cooked meats are safe for feeding to Guppies?
2. I have never paid any attention to the overcrowding of my small Guppies before. I placed 15 in a gallon bowl. Will this be enough until they are sexed at the age of 6 months? How large a container do they need then?
3. Has anyone reproduced your famous Giant Guppies from scratch? I enjoy reading your department each month and hope that you will keep up the good work.

**Bob Kinney,**  
 Tacoma, Wash.

**A.** 1. I purchase most of my dry foods from the Aquarium Stock Company. I do not use cooked meats; the only cooked foods I use are codfish and flounder.

2. Overcrowding is bad in any case, and putting 15 small Guppies in a gallon of water and waiting 6 months for them to be sexed is about as good an example as you could look for! In this period of time, if given proper conditions, your babies could be grandparents! What they need is an aquarium which holds 10 to 15 gallons of water.

3. Anyone who has my Giant Guppies does not have to start from scratch. I was the only one who had to do this!

**Improving green veiltail strain.**  
**Q.** I am 14 years old and need an expert's advice:

I have bred a common Guppy with a fancy veiltail Guppy and have come

**MEALWORMS!**

Quality, Service, Dependability

**BULK or RESALE PACKAGED**

Dealers Inquiries Invited.

Small, Medium, Large

*Sure-Live*  
**Mealworm Co.**

22536 Halidale Ave. Torrance, Calif.  
 FAirfax 8-6926

Please Mention T.F.H. When Writing to Advertisers

FIRST PRIZE WINNER AT THE INTERNATIONAL 1960 GUPPY SHOW, BERLIN, GERMANY

**THE BRONZE DELIGHT**

After more than 30 years of breeding exhibition guppies, Mr. Hartung now introduces his greatest achievement - the Bronze Delight with its unique veiltail breed: true. They are a fine hybrid of golden and gray guppies. You may choose from Green, Lemon, Blue, Variegated or Blue-green tails. 3 1/2 per pair. (\$2.00 extra for Tail).

**HARTUNG GUPPY SPECIALIST**

Other prize-winning varieties are: your choice of Red, Blue, Black, Dark Blue, Variegated - only \$6.00 a pair. Albino, Yellow, \$8 a pair. Beautiful Green Body and Veil! \$7 a pair. **GUARANTEED Live Delivery** - Possible! Send check or money order to: **W.M. HARTUNG,** 91-34 - 68th St., Woodhaven 21, N.Y. - VI 7-2530.

Be Sure With America's Best Quality!

**FROZEN BRINE SHRIMP**

KEEP YOUR TROPICALS HEALTHY WITH THIS EXTRA PROTEIN FOOD!

the famous San Francisco Pack!



Nowhere does brine shrimp grow like it does in the great San Francisco Bay! It's extra rich in nutritional value for tropicals - every species. Acclaimed by professional aquarists the world over. Be sure to look for the brightly colored bag with the happy fish on front!

KEEP UNOPENED PORTION FROZEN UNTIL NEEDED. THAW IN WATER. NEVER IN HOT WATER.

San Francisco Superior Tropical Fish Food

Brine Shrimp

KEEP UNOPENED PORTION FROZEN UNTIL NEEDED. THAW IN WATER. NEVER IN HOT WATER.

BRINE SHRIMP SALES CO. INC.  
 1655 WEST WINTON AVENUE HAYWARD, CALIF.



## The essential reference work for every aquarist and pond-keeper



By Professor  
**GÜNTHER STERBA**  
Director of the Zoological Institute,  
the Karl-Marx University of Leipzig

available  
at your  
**PETSHOP**  
\$20.

Here, for every aquarist or pond-keeper, is a reference work *par excellence*. The first major German text on aquarium fishes ever to be translated into English, this book by an internationally known authority is the most up-to-date, comprehensive and lavishly illustrated work of its kind to be published in Britain. An encyclopaedic survey covering every aspect of the identification, biology and care of approximately 1,300 freshwater species, the majority of which are illustrated. Deals with species and genera—even whole families and orders—which other books do not mention. Nearly 1,100 well-printed pages. Magnificently illustrated by 525 superb photographs, including exceptionally faithful reproductions of 102 COLOUR PHOTOGRAPHS, together with 668 brilliant line drawings, anatomical diagrams and distribution maps. Strictly limited edition at special low price. De Luxe Edition, handsomely bound.

Send your check or cash to T. F. H. BOOKS, T.F.H. Building,  
245-247 Cornelison Avenue, Jersey City 2, N. J., U.S.A.

## Salts From The Seven Seas



By Alfred A. Schultz

**Q.** I have read that a Molly can be put into a salt water aquarium after a series of water changes. Are there any other freshwater tropical fishes that can be put in a saltwater aquarium? If so, please list them.

**Christopher Baswell,**  
Tarrytown, N.Y.

**A.** Besides Mollies there are Guppies, Scats, Monies, and Archer Fish.

**Q.** I have been enjoying your informative column for many years. Now I hope you can help me with the following questions:

1. Is the following a sound set-up?: A 40-gallon stainless steel aquarium sealed with liquid glass, filtered by an undergravel filter and a power filter which handles 150 gallons per hour.
2. Would these be compatible in the same size tank?: One French Angelfish,

Please mention T.F.H. when writing to advertisers

**"NEPTUNE SALTS" KEEP SALT WATER FISH ALIVE FOR YEARS & YEARS!**



World's #1 product for marine fish and sea horses. Tested, approved and used by experts of 19 public aquariums, over 30 universities, U. S. government agencies, industrial zoos, zoos, and hobbyists throughout the world. Just mix with tap water... it's as simple as that. Crystal-clear water lasts 4 to 7 years and longer by actual experience. "NEPTUNE SALTS" costs far less per year than any other product ever developed since you buy it only once... it *DOES* have to change water every few weeks. Write for new salt-water catalogue, hobbyist and dealer, no charge hobbyist, 25c.

**WESTCHESTER AQUARIUM SUPPLY CO., INC.**

454 Mamaroneck Avenue  
White Plains, N. Y.  
Tel.: 914 WH 8-6011

Please Mention T. F. H. When Writing to Advertisers

## Marine Tropicals

CORAL - SEA HORSE TREES  
NEPTUNE SALTS

FIRST SHIPPER AND COLLECTOR OF MARINE LIFE FOR THE HOME AQUARIUM (since 1929)

Send for free price list (Wholesale & Retail)

"LIVE ARRIVAL & SATISFACTION GUARANTEED"

WHEN SHIPPED ALL THE WAY BY AIR FREIGHT



**MIAMI TROPICAL AQUARIUM**  
J. CLARK THOMPSON, 962 SOUTHWEST 2nd ST.  
Phone: 525468 or 371255 Area Code 305  
MIAMI 38, FLORIDA

two *Amphiprion percula*, two Tomato Clowns, one Yellow Tang, and one Blue Reef Fish.

**3.** I have read where algae may be propagated separately from the marine aquarium by placing a small piece of coral in a jar filled with salt water and allowing it to stand in strong sunlight for a week or two. Must this be natural sea water? If so, how should it be filtered?

**Anthony J. Brennan,**  
W. Collingswood, N.J.

**A. J. Yes, I would call it an ideal set-up.**

**2. All but the Blue Reef Fish.**  
**3. Any salt water can be used. Just leave it in the sun with no filter, and algae will grow in abundance.**

**Q.** Recently my parents brought me some pieces of coral that they collected on the beaches of St. Thomas, Virgin Islands. I would like to know what steps should be taken to make this coral safe for a marine aquarium.

**Marc Binder,**  
Milton, Mass.

**A.** It should be boiled and then rinsed in fresh water overnight for three nights. Then bake it in an oven for three hours. Bleach with a laundry bleach. Then it should get three more overnight rinses and be dried in the sun.

**Q.** In the January, 1963, issue you said that in a salt water aquarium aeration and filtration are needed. I have a

1-gallon all plastic aquarium with two Dwarf Sea Horses in it. Wouldn't a filter draw in the baby brine shrimp?

**Raymond Symczyk,**  
Staten Island, N.Y.

**A. Yes; I would suggest that you shut off the filter at feeding time for one hour.**

Please mention T.F.H. when writing to advertisers

## CLEAR PLASTIC TANKS

IDEALLY SUITED FOR MARINE FISH



Here is the ultimate in home aquariums. Designed to support marine life, it is also tops for fresh water. Crystal clear plastic with no distortion because it is not stretched. The plastic is welded together with corner supports forming the full height of the tank. Here is the best set, all dimensions are the same as stainless steel aquariums, so that you can use all your tank accessories. Available in 5 1/2, 10, 15, 20, 24, 29 and 50 gallon sizes. Write for price list.

SEND FOR OUR FREE CATALOG SHOWING HUNDREDS OF AQUARIUM AND PET SUPPLIES

**BROOKLYN TROPICAL FISH CENTER**  
1323 Flatbush Avenue Brooklyn, N. Y.  
HEADQUARTERS FOR MARINE FISH & ACCESSORIES

Please Mention T. F. H. When Writing to Advertisers

**Dick Boyd introduces his new improved filter medium tested 8 years fabulous**

<p>The original and only once medium tested and proven in thousands of tests on all species under all conditions for real or artificial sea water and fresh water.</p>	<p><b>CHEM-PURE</b></p> <p><b>NEVER CHANGE WATER FISH ARE HAPPIER-HEALTHIER</b></p> <p>Keeps live corals and seaweeds healthy</p> <p>Removes pollution as it occurs - pH level keeps constant</p>	<p><b>NO OSMOTIC SHOCK REMOVES</b></p> <p>CONCRETE-ODORS COPPER-COP ACIDS-METAL IONS HARMFUL BACTERIA OCTOPUS INK</p> <p>DEALERS AND JOBBERS INQUIRIES INVITED</p>
--	---	--

BRING THE SEA INTO YOUR LIVING ROOM  
**CARIBBEAN MARINE ENTERPRISES, INC.**  
DICK BOYD, President  
P.O. BOX 1808 MIAMI 1, FLORIDA



*Zebrasoma veliferum*, because of its unusual body form, is a particularly fine attraction in the marine aquarium. Photo by Dr. Herbert R. Axelrod.

## My Experiences With Surgeonfishes

BY PETER CHLUPATY

The Surgeonfishes, or Acanthuridae, belong to the group of so-called "real" Coralfishes. The body is laterally compressed and quite long. The skin is thick, leathery and covered with rough scales. The mouth is small. Characteristic of the Surgeonfishes is their "armament." On both sides of the caudal base there is an extendable spine or several rigid bony spines of extraordinary keenness. Because such a spine has a certain similarity to a scalpel, the name "Surgeonfish" is easily understandable. Among the East Asian fishermen the superstition exists that the Surgeonfishes slit open the belly of other fishes and feed on their entrails. However, since these fish are vegetarians by



two *Amphiprion percula*, two Tomato Clowns, one Yellow Tang, and one Blue Reef Fish.

3. I have read where algae may be propagated separately from the marine aquarium by placing a small piece of coral in a jar filled with salt water and allowing it to stand in strong sunlight for a week or two. Must this be natural sea water? If so, how should it be filtered?

Anthony J. Brennan,  
W. Collingswood, N.J.

A. 1. Yes, I would call it an ideal set-up.  
2. All but the Blue Reef Fish.

3. Any salt water can be used. Just leave it in the sun with no filter, and algae will grow in abundance.

Q. Recently my parents brought me some pieces of coral that they collected on the beaches of St. Thomas, Virgin Islands. I would like to know what steps should be taken to make this coral safe for a marine aquarium.

Marc Blinder,  
Milton, Mass.

A. It should be boiled and then rinsed in fresh water overnight for three nights. Then bake it in an oven for three hours.

Bleach with a laundry bleach. Then it should get three more overnight rinses and be dried in the sun.

Q. In the January, 1963, issue you said that in a salt water aquarium aeration and filtration are needed. I have a

1-gallon all plastic aquarium with two Dwarf Sea Horses in it. Wouldn't a filter draw in the baby brinck shrimp?

Raymond Szymczyk,  
Staten Island, N.Y.

A. Yes; I would suggest that you shut off the filter at feeding time for one hour.

Please mention T. F. H.  
when writing to advertisers

### CLEAR PLASTIC TANKS

IDEALLY SUITED FOR MARINE FISH



Here is the ultimate in home aquariums. Designed to support marine life, it is also safe for fresh water. Crystal clear plastic with no distortion because it is not riveted. The plastic is secured together with corner supports running the full height of the tank. Here is the best yet, all dimensions are the same as stainless steel aquariums, so that you can use all your tank accessories. Available in 5/16, 10, 15, 20, 24, 28, 29 and 30 gallon sizes. With free price list.

SEND FOR OUR FREE CATALOG  
SHOWING HUNDREDS OF AQUARIUM  
AND PET SUPPLIES  
**BROOKLYN TROPICAL FISH CENTER**  
1323 Flatbush Avenue Brooklyn, N.Y.  
HEADQUARTERS FOR MARINE FISH & ACCESSORIES

Please Mention T. F. H. When writing to Advertisers

Dick Boyd introduces his new improved filter medium tested 8 years

The original and only true medium tested and proven in thousands of tests on all species under all conditions for real or artificial sea water and fresh water.	<b>CHEM-PURE</b>	<b>NO OSMOTIC SHOCK</b>
	<b>NEVER CHANGE WATER</b>	<b>REMOVES</b>
	<b>FISH SAFE</b>	<b>COLORS-ODORS</b>
	<b>HAPPIER-HEALTHIER</b>	<b>COPPER-ION</b>
	Keep live corals and	<b>ACIDS-METAL IONS</b>
	DISSOLVE SAFELY	<b>HARMFUL BACTERIA</b>
	Remove pollution as	<b>OXYGEN INDEX</b>
	it occurs.	<b>DEALER AND JOBBER</b>
	Keeps constant pH level	<b>ENQUIRIES INVITED</b>

BRING THE SEA INTO YOUR LIVING ROOM  
**CARIBBEAN MARINE ENTERPRISES, INC.**

DICK BOYD, President  
P.O. BOX 180 MIAMI 1, FLORIDA



*Zebrasoma veliferum*, because of its unusual body form, is a particularly fine attraction in the marine aquarium. Photo by Dr. Herbert R. Axelrod.

## My Experiences With Surgeonfishes

BY PETER CHLUFATY

The Surgeonfishes, or Acanthuridae, belong to the group of so-called "real" Coralfishes. The body is laterally compressed and quite long. The skin is thick, leathery and covered with rough scales. The mouth is small. Characteristic of the Surgeonfishes is their "armament." On both sides of the caudal base there is an extendable spine or several rigid bony spines of extraordinary keenness. Because such a spine has a certain similarity to a scalpel, the name "Surgeonfish" is easily understandable. Among the East Asian fishermen the superstition exists that the Surgeonfishes slit open the belly of other fishes and feed on their entrails. However, since these fish are vegetarians by

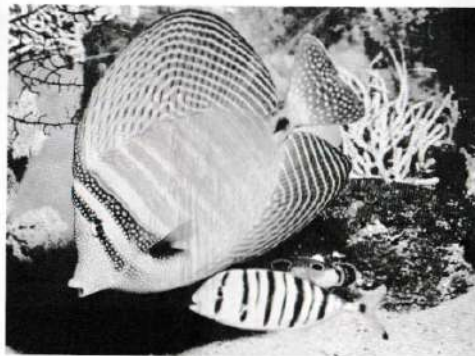
preference, this belief is nothing more than pure fiction. The Surgeonfish is greatly feared by native fishermen, because a carelessly handled fish can deal out painful and extensive wounds with blows of its tail. These spines are therefore purely defense weapons and never used as means for getting food.

I would like to cover several genera. The genus *Acanthurus* is represented by numerous species in all tropical seas. The one which is most often imported into Germany is *Acanthurus santhopterus*. Like most of the Surgeonfishes, the colors of this fish are highly changeable. We recognize a day and a night coloration. The basic shades are quite dark, a uniform grayish-blue, with a tinge of yellow showing partly in the fins.

Some years ago I was able to acquire a small specimen of this species. This was my first Surgeonfish of any kind. My joy was great when on the day after his arrival he began eating thread algae. The aquarium was indeed my pride, because it was heavily overgrown with this thread algae. Unfortunately, this condition did not last very long. In two months the entire aquarium was stripped completely clean. I was therefore forced to have marine algae shipped to me.

Substitute foods were also eaten, such as *Mysis*, cut-up shrimp, white worms, mussels and also some raw fish. It was peaceful toward its tankmates and it won respect on the very first day, when a *Balistes* attacked it. Defense was no problem at all, aided by some vigorous beats of the tail. Peace reigned

The Grayish-Blue Surgeonfish *Maso litoretus* (upper fish) is very easy to keep. Underneath are the almost deep-black *Ctenochaetus strigosus*, another member of the family. To the left is a *Zanclus cornutus*. Underwater photo by Dr. W. Klausewitz.

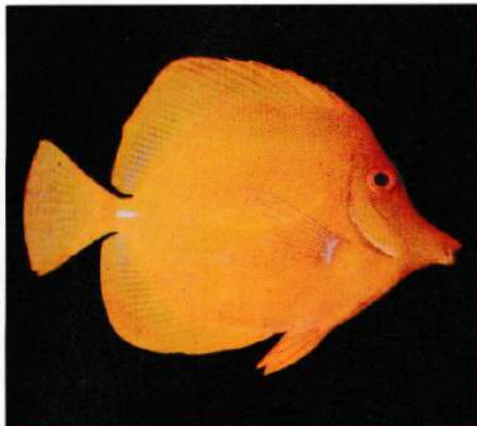


Young specimens of *Zebrasoma veliferum* are considerably different from older specimens in color and markings. The fish below the *Zebrasoma* in this photo is *Caranx speciosus*. Photo by Klaus Poyson.

after this argument, and for almost two years I was able to enjoy the alert movements of this attractive creature. The fish swam about almost continually all day long, only stopping to rest occasionally among the coral.

One day I obtained from the Tropicarium in Frankfurt one of the most beautiful Surgeonfishes, *Acanthurus leucosternon*, which occurs in the Indo-Pacific area. When it arrived the Surgeonfish did not look particularly good. Close inspection showed an injury between the eyes. It was about 1/4 inch in diameter and the raw flesh could be easily seen. For 16 days I netted out the fish daily and brushed the wound with a weak acriflavine solution. Besides, the fish was covered with *Oodinium ocellatus*. By adding the well-known copper sulphate solution (0.163 grams to 100 liters) of water, after Dr. Dempster to the tank water, this formerly feared "Coralfish disease" was cleared up in a few days. On the fourth day my fish already began to eat algae and white worms. Its appetite gained with its health, as well as its desire to swim. I find this species particularly active, on the go all day. Scarcely ever does this lovely creature allow itself to rest. Some mock combats take place with other tankmates, which never result in an injury. The attack is begun by brushing by the selected victim, sometimes very closely. These attacks are nothing more than play.





The highly colorful Yellow Tang, *Zebresoma flavescens*. Photo by Dr. Herbert R. Axelrod.

When an *Acanthurus leucosternon* is ready to attack or frightened its colors become pale and the body shows four or five white bars. This beautiful species is generally easy to keep and highly recommended. Besides tender aquatic plants, algae, lettuce and dried foods, clams and raw marine fish flesh as well as small shrimp are accepted.

Three years ago two tiny *Zebresoma veliferum* from the Red Sea found their way into my tanks. They quickly began to eat algae and fleshy foods and were always together. This species does not swim in schools in their natural waters, but swims singly or in pairs. They are often seen among the branches of *Acropora* corals. This observation can also be made in captivity. This fish group more greatly resembles the Chaetodontidae group than the genus *Acanthurus*. The swimming motions, the swimming in pairs and their feeding are uncommonly reminiscent of the *Chaetodon* genus. The two little ones behaved themselves very well, grew with equal speed and, with the exception of one unpleasant interlude, gave me nothing but pleasure. After nine months of keeping them I suffered a very heavy blow. When, after my working hours were over, I made my way into the fish room one day



## CONFUSED BY CONFLICTING FILTER CLAIMS? READ THIS BEFORE BUYING ANY FILTER!

### 4 well-known outside filters VS SCATTERGOOD FILTERKING DELUXE

	G	H	L	W	FILTERKING
PATENTED Air Lift	NO	NO	NO	NO	YES
SELF-ADJUSTING Siphon	NO	NO	NO	NO	YES
RUBBER BULB instant-starting siphon	NO	NO	NO	NO	YES
FULL SIZE all-molded tank	NO	NO	NO	NO	YES
SELF-CLEANING by backwashing	NO	NO	NO	NO	YES
Full range of INTERCHANGEABLE stems	NO	NO	NO	NO	YES

OUTPERFORMS ALL OTHER OUTSIDE FILTERS! YEARS-AHEAD DESIGN IS FIRST CHOICE OF UNIVERSITIES, LABORATORIES, EXPERIENCED DEALERS — YOU, TOO! WHEN YOU WANT A REAL FILTER, ASK FOR A SCATTERGOOD, THE WORLD'S FINEST!

### 4 well-known undergravel filters VS SCATTERGOOD FILTERKING DELUXE

	E	H	M	W	FILTERKING
STUNTS PLANT GROWTH	YES	YES	YES	YES	NO
ACIDIFIES WATER	YES	YES	YES	YES	NO
WATER DISCOLORS	YES	YES	YES	YES	NO

OUTPERFORMS ALL UNDERGRAVEL FILTERS! A SCATTERGOOD operates as a WATER CONDITIONING plant, circulating water through a deep bed of activated carbon — the same principle used to provide high quality drinking water. When cleaning is required, ONLY THE FILTER TANK is removed and carbon back-washed, thus PERMANENTLY DISPOSING of accumulated dirt. Contrast with undergravel filters, which operate on a SEWAGE DISPOSAL principle — NO DIRT is removed, but instead is concentrated in the gravel. Periodically, regardless of claims to the contrary, THE ENTIRE PLANTED AQUARIUM MUST BE DISMANTLED and the gravel cleaned.



SCACO ACTIVATED CARBON The wonder-working carbon that SCATTERGOOD filters are designed to use. Gives water so clear that the fish seem suspended in space! Enormously more effective than bone charcoal, as proved by laboratory tests.

NO OTHER FILTER OF ANY TYPE IS "JUST AS GOOD" AS A SCATTERGOOD DESIGNED AND MANUFACTURED ONLY BY SCATTERGOOD FILTERS CO.

See our complete line at quality dealers everywhere. If there is no Scattergood dealer near you, write for free catalog and booklet "Getting the Most Out of Your Filter".

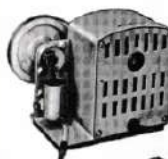


## Scattergood Filters Co.

MILLER 7, MISSOURI

## METAFRAME FOR Hobbyists

WHO APPRECIATE THE FINEST



1st  
in  
HOBBYISTS' SALES

Discriminating hobbyists rely on the famous METAFRAME quality and craftsmanship which for 39 years made METAFRAME a household word, respected and admired by all.

Strict quality controls assure trouble-free service by all METAFRAME products. The METAFRAME aquarium cement is suitable for fresh and salt water usage.

Only the finest material goes into all METAFRAME products, sold by better pet shops across the country. Look for the METAFRAME name and be sure of the finest.

Metal Frame Aquarium Co.

87 Eddy St., Newark, N. J.

I found this picture: one Surgeonfish was upright in the upper corner of the tank and was being savagely bitten and belabored with blows of the tail by the other. The attacked fish had badly ripped fins and both sides of the body showed numerous serious injuries where the spines of the attacker had slashed into him. I had to put the poor creature out of its misery. I could not figure out the reason for this sudden hatred. They were not yet sexually mature. The "murderer" met his end with an attack of *Ichthyophonus* almost three years later.

Lastly I must mention *Zebresoma xanthurum*. I am thankful to Hans Schmidt of Tropicarium in Frankfurt for this lovely creature. It is mainly found in the Red Sea, and is sometimes found in the waters around Ceylon. The overall color is a velvet blue, contrasted by a tail of gleaming golden yellow. The pectoral fins are also partly yellow. At first the fish accepted all foods hesitantly, making up for lost time after three weeks of captivity. With this species I could make the interesting observation that all fishes which are blue or violet in color are frequently attacked. As Dr. Abel notified me, this species is usually found at the steep drops of coral reefs which are distant from the shore. Here they occur singly or in pairs among the coral growths. In the late afternoon they congregate in large schools, however, moving over the coral formations by the hundreds. Obviously they are not in search of food. It might be remarked that the blue of their bodies appears almost black in the daytime, while in the afternoon their color becomes a less ostentatious azure blue. *Zebresoma xanthurum* is relatively easy to keep and also very hardy.

In general it can be said that the keeping of the Surgeonfishes described here can be readily recommended for the somewhat advanced hobbyist. One can really get much pleasure watching the colors and movements of these lovely creatures.

Please Mention T. F. H. When Writing to Advertisers

### GUARANTEE YOUR SUCCESS IN THE SALT WATER HOBBY use . . .

#### RILA MARINE MIX



- Contains the 19 major trace elements of natural sea water.
- Economical and easy to use.
- A 100% chemical formulation guaranteeing uniformity and purity.
- The ideal media for marine fish, sea horses, and marine invertebrates from all the oceans of the world.

Write today for complete Product Information, price list, and free Salt Water Care & Maintenance Bulletin.

RILA PRODUCTS • P.O. BOX 114 • TEANECK, N. J.



**SOCIETY NEWS**

Clubs and individuals interested in membership in The International Federation of Aquarium Societies should contact Mr. William I. Lawrence, Membership Chairman, 214 E. 29th Street, Wilmington 2, Delaware.

**American Guppy Association . . .** At the convention of The International Federation of Aquarium Societies held in Milwaukee earlier this year, T.I.F.A.S. delegates voted to adopt the American Guppy Association standard and point system for use in judging Guppies in T.I.F.A.S. competition everywhere.

Since the majority of the world's breeders of fancy Guppies are members of T.I.F.A.S. or the A.G.A., serious Guppy specialists now have, in the words of Lawrence Konig, Executive Secretary of the A.G.A., "... the first true international standard and point system ever set on any tropical fish favored by the largest group of aquarists in the world."

The international recognition thus accorded the A.G.A. standard fulfills the fondest hopes of the organizers of the A.G.A., who have been working since the group's inception in 1957 to stimulate interest in big-tailed Guppies and to make good breeding stock available to interested groups in established aquarium societies.

At the international Guppy show held in conjunction with the T.I.F.A.S. Convention, A.G.A. members scored almost a complete sweep of honors in the nine classes of entries. Names and addresses of the winners can be obtained from Frank Samp, 504 65th Street, Milwaukee 14, Wisconsin. Judges at the Guppy show were

William Sternke, Lindsey Huffer, Stan Schubel, and Larry Konig.

**Des Moines, Iowa . . .** The Greater Iowa Aquarium Association will hold its fifth annual tropical fish show September 18 through 22, and manufacturers are invited to contribute merchandise for distribution at the show; all merchandise donated will be credited in the brochure made up for the show.

Send all donations or inquiries to Bob Johnson, 3904 Berver Ave., Des Moines, Iowa.

**Wichita, Kansas . . .** The Aquarium Society of Wichita will hold its seventh annual tropical fish show on September 7 and 8 at the Coca Cola Building, Harry Street and George Washington Blvd., Wichita.

**Indianapolis, Indiana . . .** September 8 is the date set for the first annual tropical fish show of the Aquarium Hobby Club of Indianapolis. Entries will be in the following classes: Characins, Cichlids, Bettas, Barbs, Panchax, Scavengers, Oddballs, Saltwater, Mollies, Swordtails, Guppies (seven divisions) and Other Livebearers. Trophies and ribbons will be awarded for each class.

Please mention T.F.H. when writing to advertisers

*Too Way Yong & Sons*

**Importers & Exporters of  
Fancy Tropical Fishes,  
Wild Birds & Animals  
Shipments to Any Part of the  
World**

1063, Yio Chu Kang Road  
Singapore 19

Cable Address:  
"CATFISH" SINGAPORE

**Tropical Fish and Aquatic Plants**

DEALERS AND JOBBERS ONLY



*Leporinus fasciatus*

- |                      |                     |                      |
|----------------------|---------------------|----------------------|
| Neolebina ansorgei   | Lyretail Molly      | Rashora heteromorpha |
| Cardinal Tetra       | Albino Molly        | African Frog         |
| Discus (all sizes)   | Albino Swordtail    | African Shark        |
| Black Angel          | Golden Ramirezi     | New Leopard Danio    |
| Oscar                | Plesiosomus         | Electric Catfish     |
| Clown Loach          | Otocinclus          | African Sucker Cat   |
| Bumblebee            | Distichodus affinis | Corydoras            |
| Imported Kribensis   | Red-Tail Shark      | Thailand Algae Eater |
| New African Red Barb | Pearlscale Goldfish | Neon Tetra           |
| Scat                 | Celestial Goldfish  |                      |

Please use your business stationery  
in writing for current list.



*Aquatic Fisheries, Inc.*

1600 Pelham Parkway South  
New York 61, New York  
Cable: Aquafish  
TYrene 2-6161 Area Code 212

QUALITY — VARIETY — SERVICE