

FEBRUARY, 1967

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# Pet Fish

monthly



# KB TROPICAL FISH KB

TROPICAL FISH IN STOCK JANUARY 1987

REGULAR STOCKS ARRIVING WEEKLY

<b>CUPPIES</b>		<b>LIVEBEARERS</b>	
Delta guppies (Lebistes reticulatus)	8/6 pr.	PLATIES	
Delta guppies, males only (Lebistes reticulatus)	7/6 ea.	Sunset platy variatus (Xiphophorus variatus)	15/- pr.
<b>MOGLIES</b>		Moon (Xiphophorus maculatus)	3/- ea.
Lyrreid mollie (Molliesia species)	10/6 ea.	Black (Xiphophorus maculatus)	3/- ea.
Lyrreid mollie (Molliesia species)	3/- ea.	Yellow wagtail (Xiphophorus maculatus)	3/- ea.
Black mollie (Molliesia schenepi)	3/- ea.	Red (Xiphophorus maculatus)	3/- ea.
<b>WORDTAILS</b>		Red wagtail (Xiphophorus maculatus)	3/- ea.
Red (Xiphophorus birchii)	3/- ea.	Blue (Xiphophorus maculatus)	3/- ea.
Red wagtail (Xiphophorus helleri)	4/6 ea.	Red-ox. black variatus (Xiphophorus maculatus)	7/6 ea.
Green (Xiphophorus helleri)	3/- ea.		
Hi-bred (Xiphophorus maculatus/helleri)	3/- ea.		
<b>CHARACINS</b>		<b>EGGLAYERS</b>	
Neon tetra (Hyphessobrycon innex)	3/6 ea.	<b>DWARF CICHLIDS</b>	
Lemon tetra (Hyphessobrycon pulchripinnis)	(Six for 17/6)	Dwarf rainbow cichlid (Pajhastochromis kribiaensis)	8/6 ea.
Cardinal tetra (Cheimodan axelrodi)	3/- ea.	Rama (Apistogramma ramirezi)	6/6 ea.
Red-eye tetra (Moenkhausia sanctae filomenae)	6/6 ea.	Apistogramma agassizii	7/6 ea.
Green neon (Hyphessobrycon costella)	3/6 ea.	Apistogramma nesi	7/6 ea.
Gold lama tetra (Hemigrammus armstrongi)	7/6 ea.	<b>CICHLIDS</b>	
Roseus (Hyphessobrycon rosaceus)	5/6 ea.	Blue discus (Symphysodon aequifasciata haraldi)	23 pr.
Red-fin tetra (Hemigrammus caudovittatus)	3/6 ea.	Sheephead acara (Aequidens curvicaudus)	7/6 ea.
Serpae (Hyphessobrycon serpaes)	3/6 ea.	Jack Dempsey (Cichlasoma bimaculatum)	4/6 ea.
Glowlight (Hemigrammus gracilis)	3/6 ea.	Oscar (Astronotus ocellatus)	4/6 ea.
Black widow (Gymnocorymbus ternetzi)	3/6 ea.	Vail angels (Parachanna simaka)	6/- ea.
Penguin (Thayeria boehlkei)	3/6 ea.	Sid. angels (Parachanna simaka)	3/- ea.
X-Ray fish (Pristella nattereri)	3/6 ea.	Black angels (Parachanna simaka)	6/6 ea.
Beacora (Hemigrammus ocellifer)	3/- ea.	Loce angels (Parachanna simaka)	3/6 ea.
Silver hatchets (Gasteropelecus sternicla)	6/6 ea.	<b>LABRINTHS</b>	
Red-tail characin (Chalcinus maculipinnatus)	85/- ea.	Siamese fighter, male (Betta splendens)	10/- ea.
Metyonia (Metyonia schreineri)	3/- ea.	Siamese fighter, female (Betta splendens)	4/- ea.
Bloodfin (Aphyocharax rubropinnis)	12/- ea.	Three-spot gourami (Trichogaster trichopterus)	2/6 ea.
Pencil fish (Nannostomus anomalus)	4/- ea.	Moonlight gourami (Trichogaster microlepis)	12/6 ea.
Splash tetra (Capoia aimata)	8/6 ea.	Pearl gourami (Trichogaster leali)	3/6 ea.
Plains fish (Hyphessobrycon flammeus)	2/6 ea.	Dwarf gourami (Colisa lalia)	10/- pr.
<b>DANIOS</b>		Albino paradise fish (Macropodus opercularis)	4/6 ea.
Zebra (Brachydanio rerio)	2/6 ea.	Honey gourami (Colisa chuna)	3/- ea.
Giant (Danio malabaricus)	2/6 ea.	Ocelline gourami (Trichogaster ocellus)	3/6 ea.
<b>SHARKS</b>		<b>CATFISH &amp; GDACHES</b>	
Silver (Balantiocheilus melanopterus)	19/6 & 27/6 ea.	Spotted cat (Candidia melanostictus)	7/6 ea.
Red-tail black (Laboe bicolor)	6/- ea.	Congo glass cat (Istiopoma debile)	7/6 ea.
<b>RASBORAS</b>		Leopard cat (Corydoras julii)	8/6 ea.
Harlequin (Rasbora heteromorpha)	3/6 ea.	Myrist tangary	5/6 ea.
Scorptails (Rasbora trilineata)	3/6 ea.	Bronze cat (Corydoras senes)	5/6 ea.
Firetail rasbora (Rasbora borapensis)	4/6 ea.	Glass cat (Kribia senes)	8/6 ea.
Elegans (Rasbora elegans)	4/6 ea.	Dwarf sucking cat (Osteichthys aequipinnatus)	7/6 ea.
<b>TOOTHCARPS</b>		Looking loach (Gymnocheilus aymonieri)	4/6 ea.
Rivulus schillii (new)	19/6 pr.	Dwarf danio (Gambusia holbrooki)	7/6 ea.
Playfin (Pachypanchax glayfaini)	15/- pr.	Kuhli loach (Acanthopoma senecius)	2/6 ea.
Peruvian long fin (Pterolebias peruviana)	29/- pr.	<b>VARIOUS OTHERS</b>	
Aphrasemoni gardneri	16/- pr.	Zacco platypus	27/6 ea.
Devi (Aplocheilichthys macrophthalmus)	10/6 pr.	American flag (Jordanella floridae)	4/6 ea.
Lamp eyes (Aplocheilichthys macrophthalmus)	7/6 ea.	Figure 8 puffer (Tetraodon species)	10/- ea.
<b>BARRS</b>		Loach (Gambusia holbrooki)	12/6 ea.
Hall banded (Capoeta semifasciata)	5/6 ea.	White clouds (Mochizukius argenteus)	10/- ea.
Cherry (Capoeta titzei)	3/6 ea.	Bumble bees (Brachypterus xanthopterus)	3/6 ea.
Cherry, adult (Capoeta titzei)	3/6 ea.	Spry eels (Macropodus chinensis)	8/6 ea.
Roxy (Puntius conchonus)	3/6 ea.		
Golden (Puntius sachs)	3/- ea.		
Ticto (Barbus ticto)	3/6 ea.		
Tiger (Capoeta tetrazona)	3/- ea.		
Tinfoil (Barbus schwanenfeldi)	7/6-25/- ea.		
Nigger (Puntius nigrofasciatus)	3/- ea.		

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## Comments and Quotes

### £2,100 cooler for fish ● Berlin's Aquarium ● Glass bowl—for whales

#### Too Hot in Liverpool

WE have all heard about the troubles that fish-keepers in some parts of the world have in keeping their aquaria cool enough for tropicals. Some of us may even shed the odd cold tear for them in their difficulty as we potter about in a British February stoking up the fish house boiler or watching tank thermometers carefully as the ice thickens on the window panes. But, do we read it right?—yes!—things are getting too hot for fish tanks in Liverpool's Museum Aquarium, and they've been considering installing refrigeration equipment to cope with the problem.

It is the coldwater marine tanks in particular that have been the source of worry, since their temperatures have been climbing to nearly 70°F in the comfortably warm conditions of the Museum. Mr Tom Hume, director, has told the Liverpool Libraries, Museums and Arts Committee that after a year's working it has become obvious that refrigeration of both the cold freshwater and marine aquaria will be necessary if the fishes are to be kept healthy.

Cod, skate, plaice, dogfish and trout are among the species that are so common as to be essential exhibits but which cannot be shown because the high temperatures do not suit them. Cost of the necessary equipment and installation work totals about £2,100, and the Committee has asked the city's finance department to unfreeze some cash to cool the cod.

#### Glass Bowl for Whales

A SYDNEY company has recently signed a contract to build the largest glass bowl in the world—for whales. At Tweed Heads, the owner of the Tweed Heads sea aquarium, Mr J. Evans, signed the £32,000 contract.

Three-quarters of the sides of the 80 ft. by 40 ft. raised pool will be specially processed glass 1½ in. thick. The pool is expected to be ready for use before Easter.

Mr Evans said it will be the home of a variety of whales known as false killer whales which grow to about 25 ft.: 'When the whales are trained it will be a "theatre of the sea".'

#### World's Largest Aquarium

WHICH is the world's largest public aquarium? The answer probably depends on the particular set of features by which 'large' is assessed. A writer in the *MUSEUM NEWS* is in no doubt that Berlin's Aquarium takes the title and justifies it with this account.

'One of Berlin's most popular institutions is The Aquarium, which is visited by some half a million visitors yearly. With its fantastic population of more than 10,000 inhabitants of more than 1,300 different types, the Berlin Aquarium is the largest in the world.

'The Aquarium, which also houses a terrarium and insectarium, displays a fascinating variety of animals—from sponges, worms, starfish, sea



Some pet fish! This black sea bass is believed to be the largest bass ever caught in American waters. A diver at Marineland of the Pacific in Portuguese Bend, California, where it now lives, has made friends with all 6 ft. 10 in. of it. It weighs more than 500 pounds and is thought to be about 40 years old.

urchins, shrimps, crabs, lobsters, insects, spiders, scorpions, molluscs to freshwater and seawater fish, amphibians, lizards, snakes, tor-

toises and crocodilians. Among these are some whose very existence one had previously never suspected and which, within Europe, can only be

seen in Berlin.

The Aquarium, with its 300 tanks of all sizes, is a plain, functional three-floored building on the site of the Berlin Zoo. After the destruction of the old Aquarium, which was built some fifty years ago, it was rebuilt in 1952 featuring the latest equipment for keeping and exhibiting its vast population.

In the halls of the first floor, the freshwater and seawater specimens are kept in brightly illuminated tanks, lining the walls of the darkened passages. Centrepiece feature is the display of the many colourful smaller tropical fish so popular with private aquarium keepers. But more interesting in shape and colour are the freshwater fish featured in the larger tanks. To mention only one or two: the garfish, with its elongated body and long, beak-like snout; and the small colourful but voracious piranha from South America.

New acquisitions are two young arapaimas, the largest freshwater fish in the world. Quite peaceful and interesting creatures are the electric eels and the electric catfish equipped so that they can track their prey through a radar-like technique and numb them by electric shocks.

There you are—largest aquarium in the world and largest freshwater fish in the world, all in the same piece. Any other claimants?

## PETFISH MONTHLY LETTERS

### Water and Low-Voltage Electricity

IT was with interest that I read the recent correspondence (PETFISH MONTHLY, November) regarding elimination of hydra by electrolysis. It seems to me that a number of basic facts should be borne in mind.

In the normal fish tank we might expect to find in solution the ionic species hydrogen ( $H^+$ ), sodium ( $Na^+$ ), magnesium ( $Mg^{2+}$ ), hydroxyl ( $OH^-$ ), chloride ( $Cl^-$ ), sulphate ( $SO_4^{2-}$ ) and carbonate ( $CO_3^{2-}$ ), among others. On applying a low D.C. voltage to electrodes immersed in the tank, the positive (+) ions are attracted to the cathode (negative electrode) and the negative (-) ions to the anode (positive electrode). There, the ions are neutralised, and may (a) be liberated as gases, (b) be

precipitated as solids, (c) interact with the electrodes, (d) interact with the solvent (water).

In the fish tank, hydrogen gas ( $H_2$ ) will be liberated at the cathode while the magnesium and sodium will return to solution, but, at the anode, all three anions ( $Cl^-$ ,  $SO_4^{2-}$ ,  $CO_3^{2-}$ ) will react with a copper electrode, liberating the highly poisonous copper ( $Cu^{2+}$ ) ions into solution, and precipitating a coating of mixed copper salts on the electrode—the green coating referred to by W. Barker. (With an inert electrode we would expect oxygen gas to be given off.)

I would therefore suggest that it is the copper as much as anything which is responsible for the death of hydra and snails. I feel this to be more in line with the observed evidence. Death is apparently progressive—first hydra are killed, then snails and finally fish (D. Cook). This suggests a slow build-up of some poisonous factor, since it apparently stops its progress when the current is switched off. The physiological effects of low voltage current are not cumulative, but virtually instantaneous, dependent on voltage rather than time. If this hypothesis is correct, it would be infinitely easier to introduce a little copper sulphate into the tank, rather

than messing about with batteries etc. to the same effect.

One way of testing the theory would be to use totally inert electrodes, such as platinum. Care would have to be taken to ensure that only inert metal was exposed to the water (e.g. by using a platinum wire fused into a glass tube as a connection to the electrode, the joint being effected by fusing the wire to the electrode). It would also be interesting to observe the effects of using low voltage A.C. (~ 6 volts or so), which effectively prevents electrolysis of dissolved salts taking place, instead of D.C.

It should be emphasised that the above theory of electrolysis is grossly over-simplified, but is quite adequate for our purposes. Would someone with the facilities care to experiment?

*Glasgow, W.5*

RONALD J. REID  
*Scottish Aquarium Society*

**Mr Reid has been sent our aquarium aerator, as writer of the prize letter this month.**

### Watch those Sales!

WITH reference to the letter from one of your correspondents, Bill Armitage of Liverpool (*PET-FISH MONTHLY*, December), I feel that a word of warning must be given to readers contemplating advertising good guppies for sale. The selling of livestock from unlicensed premises would be a contravention of the law, and could involve the seller in considerable trouble with authorities like the Inland Revenue and the local rating authorities, as the site of the fish house could then be classed as business premises.

I would also like to point out that the Fancy Guppy Association is not a trading organisation, but is devoted to the breeding, study and competitive showing of fancy guppies. We are quite happy to leave the commercial side to our many friends in the aquatic trade.

While I agree that some would-be guppy breeders are a long way from an established F.G.A. section, they can still become members of the Association and in due course can probably form a section within their own areas.

ROY BERESFORD  
*Secretary, Fancy Guppy Association*

### Hendon's Convention

AS you know, we recently held another successful Congress. We had obtained the services of Dr Backhaus, curator of the Exotarium at Frankfurt Zoo, Germany. Unfortunately, at the last moment, he was unable to attend owing to the death of his mother. We moved into top gear to arrange an alternative programme. We had three speakers—Mr Roy Skipper, our president, on breeding discus, Mr Alan Stevens, our vice-chairman, on breeding angels (with a superb 8 mm. coloured film to highlight his lecture—a film Mr Stevens took himself) and finally, an ex-chairman of the society, Mr Bob Calrow, spoke to us on the hobby in general with coloured transparencies to support his talk.

I would like to take this opportunity, through the medium of your magazine, to thank all those aquarists who attended, for without their support the show could not go on. I would also like to apologise for the absence of Dr Backhaus and I can only hope that our fellow aquarists were not too disappointed. And I should like

AJ

## Prize Letters

**TO the writer of the letter judged by the Editor to be specially worthy among readers' letters published in each month's issue, *PET-FISH MONTHLY* will award a prize of a well-known make of aquarium aerator (as pictured here).**



***PETFISH MONTHLY* will be glad to have your experiences, comments, suggestions etc. in letters on any matter associated with fish-keeping. Write to the Editor, *PETFISH MONTHLY*, 554 Garratt Lane, London, S.W.17.**

to thank all those aquarists and societies who wrote to us saying that they enjoyed the programme.

KEITH PURBRICK  
*Secretary, Hendon & D. A.S.*

### Earthworms Galore

WE all know that the best live food for bringing many fishes into breeding form and for general feeding is earthworms. Finding them is very often a problem, as it was for us. I have several cichlids including a young Jack Dempsey of 6 inches who will eat nothing but earthworms—which makes earthworms a nightmare to my husband and myself.

We live on one of the new estates and our garden consists of about 3 inches of top soil and the rest is solid clay. Apart from not being able to grow anything other than shrubs, finding earthworms was like trying to find a goldmine. My husband and I have spent hours of back-breaking digging with very few results. I have even gone as far as offering my nieces sixpence for every dozen worms found when they have been spending holidays with us, but very few sixpences were earned. The other week I found the solution, which I hope will help other aquarists with the same problem.

Earthworms, I thought, seem to like living amongst roots of grass etc. At the end of our garden we have a heap where we throw our clumps of grass, weeds and grass cuttings. So I had a look there. I was amazed to see so many worms in one spot—and the ideal type, pink, plump and tender in sizes to suit any sized fish, tiny worms to ones three or four inches long. Because of that old heap of weeds we can now go into the garden and collect a hundred earthworms in 20 minutes. So earthworms are no longer a nightmare to us and we

## LETTERS

*Continued from page 343*

have found ourselves a constant supply of the best live food you can get.

Cranley, Sussex

MRS J. H. PARTRIDGE

### Hobbyist and Trader Relations

IT was enough to make me weep. The letter from the chairman of Hounslow & D. A.S. in the December issue of *PETFISH MONTHLY*. For 3 years I have been trying to build up a good trade in the tropical fish business and have found that it is a very competitive market. Unlike some of the large and well-known retail shops, I do not claim to have the 'largest' or 'best' selection of fish in the country but I make it my policy to buy what I think are interesting fish at prices that the average person can afford and I always try to have at least 100 different varieties in stock.

I will stick my neck right out and state that never under any circumstances is a fish sold if there is the slightest suspicion that there is anything wrong with it. I would also state that even if it takes half an hour to catch a particularly slippery character and necessitates disarranging a furnished tank every customer gets the particular fish that they want.

I take the view that every customer is also entitled to as much patience and courtesy that I can give them. Fish customers are notorious chatterboxes and they will often obtain a lifetime's information from you in exchange for the purchase of a one-and-sixpenny guppy.

This may sound like a case of blowing one's own trumpet but after reading some of the things that were said about some retail shops I would bend over backwards to assure Hounslow and other clubs that all shops are not the same. I do not doubt that what was said was true both on the side of the potential club customers and also on the experiences of the unfortunate traders. However, if, as Mr Thorne suggests, everyone will forget the past unpleasant occurrences and will give the traders another try, I am sure that goodwill will be restored all round. I, for one, am available at any time to arrange with club secretaries for their members and their wives and children to call at my shop where they will be given the friendly welcome that they deserve.

*Flores & Fauna,*  
19 Finchley Lane, Hendon, N.W.4

(MRS) ROSINA M. DAVIES

### Guppies are Tough

AS President Johnson said some time ago (and I think these words of his can be applied to fish)—'Come, let us reason together'. And the reason I think these words can be applied generally to fish and specifically to guppies is that, as I have read in an English magazine devoted to them, the 'split fins' controversy seems to be giving too much importance to several factors such as fouled water, lack of light, acidity, crowding, lack of live foods, with which I disagree although this may, in turn, cast a poor light upon yours truly as a fishkeeper and breeder.

I received six deltatails from a friend in the U.S., which were soon joined by some gold and three-quarter black ones, not to mention rasboras, platys, small

swordtails, kuhli loaches, glassfish, a small catfish or two, zebra danios and small adult tetras all in, believe it or not, a five gallon tank with aeration but no filtration whatsoever. At first I kept the tank in as good a shape as possible despite the overcrowding but soon I had to neglect it because of other matters taking my time.

Well, believe me, although when I came to look at the tank again only six of the original fishes remained in it I was even presented with some babies born in it—baby guppies—of course!

I think the debate over the split fins must be further delved into.

*Agusilla, Puerto Rico*

CARLOS F. REICHERD

*We do, of course, believe your account Mr Reichard, but not without a few shudders!—EDITOR.*

### Angel Breeding

HAVING bred many thousands of angels (and reared most of them) I was interested to read the article by Mr D. McInerney (*PETFISH MONTHLY*, January) on breeding this fish. I agree with all that he writes except on two points.

The first concerns the type of water. I never used rainwater, only tap water and with no apparent harmful results. The second and more important point is the matter of first foods for angel fry.

I considered it to be dangerous to introduce Infusoria for the fry because of the harmful consequences of giving a slight excess. My angel fry were always given freshly hatched brine shrimp or micro worm as first food and grew at a very fast rate.

May I take this opportunity to say how much I enjoy *PETFISH MONTHLY*. I have taken it from the first issue. Long may it reign.

*Cheshington, Surrey*

B. J. BELL

### Stone A.S. Summer Show

IT has been decided to hold our third Open Table Show earlier this year, on Sunday, 18th June. We had endeavoured to establish a permanent date (mid-October each year) but found that, whilst attendance and entries were excellent, the day was so short that people were more than anxious to get away quickly in order to avoid fog and other motoring hazards that are frequent at that time of the year.

This created problems of debenching; those that had not won any awards saw no reason why they couldn't take their fish and leave, which in turn had a snowball effect on other exhibitors. This notwithstanding a fixed debenching time!

We feel that the longer (warmer!) day in June, with the opportunity for the children to play outside (a recreation ground is next door), will take some of the pressure off the Mums and the Show Committee and enable a fuller programme to be presented without cramping the long-distance exhibitors' own arrangements.

Perhaps these observations might be of use to other organisers, in particular the question of premature debenching, without the host society appearing, or wishing, to be too officious.

K. J. HARVEY  
Show secretary,  
Stone A.S.

# A Decorative Large Aquarium with Fitted Rockwork

By F. N. GHADIALLY, M.D., Ph.D., D.Sc.(Lond.)



**M**Y chance to build a tank of the Monaco type came when I was about to build a new house. The aquarium was designed as an integral part of the house and both the house and it were built at about the same time.

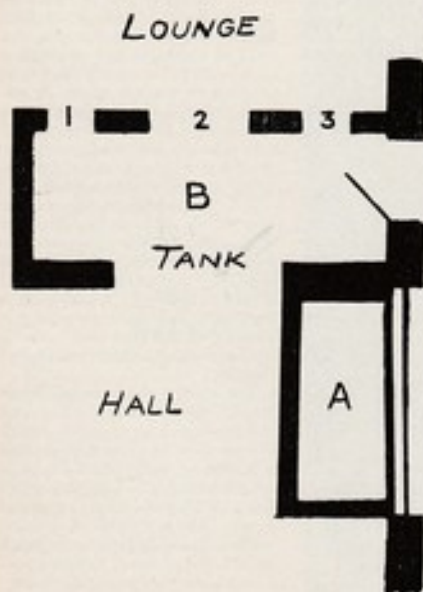
A rectangular stone enclosure measuring 11ft. by 4 ft. by 8ft. 6 in. high houses the tank, the 4 ft. 6 in. front of which fits into an aperture in the stone wall facing the front entrance in the hall of the house. The margins of the aperture are formed by a timber frame covered with mosaics. The tank (described in the January issue of *PETFISH MONTHLY*) is supported on brick piers which rest directly on the concrete floor of the stone enclosure. Since large aquaria filled with water and rockwork are heavy objects it is essential to provide a very rigid support capable of taking such a load. Any movement occurring in the support at a later date is almost certain to cause leaks or cracking of the glass.

The wall of the stone enclosure behind the aquarium faces the lounge and has apertures which accommodate a remote-controlled television set and two Hi-Fi stereo speakers. Also fitted on the lounge side of this wall is a projection screen. The amplifiers and other electrical and electronic equipment which drive these speakers are situated elsewhere in the lounge and do not concern us.



The front of the aquarium described in the article, as seen from the stairs in the hall. Note the stone wall of the enclosure in which the tank is set, the mosaic surround to the tank and the house plants growing in the planing area to the right.

In the plan sketched on this page the walls of the entrance hall area are shown with the positions of the planing region (A) and the tank enclosure (B). Openings 1 and 3 into the tank enclosure are fitted with speakers and a television set occupies opening 2. A door (right) gives access to the enclosure from the garden. The aquarium is fitted in the position marked 'Tank' with its front viewed from the hall.



During the design stages I had grave doubts about the advisability of housing the electronic equipment together with the large fish tank in the enclosure. It seemed to me that the loud volumes of sound emerging from the system might upset the fish and the high humidity might play havoc with the electronic equipment.

However, these systems have been in operation now for some four years and it seems that all such worries were totally unfounded. The fish seem to be unmoved by the music and the enclosure with the speakers and television set is not dripping with water or covered with mould as I had feared.

The stone enclosure is entered by a door which opens on to the garden. Feeding the fish and servicing the tank is carried out at the back of the aquarium reached through this door.

To one side of the wall and in front of one end of the stone enclosure is a planing area. This is in fact a sunken rectangular trough in the timber floor of the hall and is lined by asphalt. It is filled with pebbles, on and in which stand many potted plants. One of these with a creeping habit has been trained over the stone wall of the tank enclosure and now forms an attractive surround to the front of the aquarium. This plant is called *Ribes cereum rhomboides*, a popular indoor plant that can be purchased for a few shillings. It is very easily grown and given reasonable treatment can produce stems of 10 to 12 ft. in length. The planing area receives light from a large glass panel forming the back wall to the area and one side of the hall.

The concept of the stone enclosure with its adjacent planing area has proved highly successful. It is both decorative and functional. It provides a setting for the fish tank, and readers who are Hi-Fi enthusiasts will have already realised that we have here one form of a



theoretically ideal speaker enclosure (the 'infinite baffle' type). The quality of music reproduction is remarkable and has been favourably commented on by friends and experts in the field.

### Interior of the Tank

Let us now turn to the interior of the tank and examine the special problems involved in setting up a large aquarium, for the approach is somewhat different from that employed in equipping a conventional 2 ft. by 1 ft. by 1 ft. tank.

The first point we have to note is that most aquarium plants under ordinary conditions grow to a height of approx. 8 or 10 inches. If such plants are planted at the bottom of a tank 2 ft. deep then a foot or more of the top half of our tank will be virtually plantless. This unacceptable situation can be remedied by using special plants (e.g. giant hygrophylla) that grow tall, or by planting the common shorter plants on raised platforms created by banking up the gravel with rockwork, or by using both procedures.

The second point concerns the viewing distance of a tank. The problem here is similar to that of viewing any feature, such as a painting. We tend to view a large painting or a large tank from a greater distance than a small painting or a small tank. A large tank, like a large painting, must impress us from a fair distance—a distance at which, unfortunately, most of our little inch or inch and a half characins will be barely visible. Thus a large tank needs not only larger plants but also a fair number of large fishes.

Here, of course, the aquarist's personal preferences step in. For me the answer is provided by large angels, for to me the angel is the supreme aquarium fish. It does not follow, however, that small fishes have no place in such a set-up. All I am saying is that to create an impact from a distance we should have some large fishes. When this distant view has been taken in, the observer will quite naturally move forward. Then in my aquarium medium-sized fishes such as colourful livebearers and barbs come into view, and finally when the observer moves really close to the aquarium shoals of cardinals, glowlights and other small fishes provide interest and material for endless conversation. In fact a fair amount of time and persuasion is needed to make visitors leave the hall and proceed to the lounge!

### Rockwork for the Large Tank

Reference has been made several times to the rockwork. I think it is quite impossible to create a large attractive aquatic scene without the use of some sort of natural or artificial rockwork. In a small aquarium one or two small pieces of rock may be adequate but in a large tank one has to resort to some form of artificially created rockwork, particularly when it is intended to screen the entire back wall of the tank as in my tank described in this article.

Many aquarists are deterred from trying their hand at making this type of rockwork in the quite often mistaken belief that they have no artistic inclinations. It is, of course, true that some inclination in this direction and a study of the visual arts are a help, but it is quite wrong for any individual not to give himself a chance to see what he can do. I have on more than one occasion

persuaded such diffident aquarists to 'have a go' and they have been pleasantly surprised with the results of even their first efforts.

The materials required are cheap and easily obtained, and the technique is extremely simple. Let us now examine a simple way in which one can build an artificial rockface to hide the back wall of, say, a 4 ft. by 15 in. by 15 in. high aquarium.

First we want to know the size of the rockwork screen we intend to build. Allowing for the thickness of angle iron, glass and glazing compound at each end, and for the fact that a tight fit is neither needed nor desirable, it will be apparent that a finished screen about 22 in. by 15 in. high will be adequate. The next stage is to make a light frame of 1 in. by 1 in. wood that encloses the required area.

This frame can be knocked together in a few minutes, for it does not have to be very strong or accurate. It is laid on some flat working surface (such as a sheet of plywood) which is first covered with one or two layers of newspaper. Next a mixture of 1 part of Portland cement and 3 parts of fine sand is made with sufficient water added to make an easily workable plastic mixture. Keep the mix on the dry side to begin with, for it is quite easy to add a little water as and when needed during the course of the work. If the mixture is too wet it becomes impossible to model with it.

Handfuls of the mixture are taken and placed in the frame. Each handful is carefully placed and worked so as to fill all the corners of the frame and also so that the adjacent handfuls fuse together to form a compact whole. Some people prefer to work with a trowel, but I prefer to use a gloved hand for just as in modelling with clay I find that the feel of the material helps me to create the form I want. Concrete mixture is strongly alkaline and has a corrosive action on the hands and nails. Although no permanent damage is done by the occasional handling of wet concrete such an experience can be quite painful, so a thin rubber glove should be worn.

When the wooden frame is just over three-quarters filled with the mixture modelling of the 'rock face' begins. Do not smooth down the entire mass; leave the surface in a fairly uneven state. It is at this stage that the artistic part of the exercise begins. The aim now is to build up and cut away material so that the finished surface looks like a natural rock face in miniature. Here observation and study of natural rock faces as seen in quarries and cliffsides is helpful. One fact, however, must constantly be kept in mind. Fine details, such as finely scored lines etc., are useless. They may look quite nice on the work table but when the work is placed in the tank fine details will become covered by slime and algae and disappear from sight. Try to create fairly large rising and falling masses, for it is only this sort of sculptured effect that will come through in the final set-up.

As the building up in one section and cutting down in another is going on one must not lose sight of the mechanical and structural requirements. Cutting away large areas so that the thickness of the concrete is drastically reduced will create a weak product. However, at one or two carefully chosen points we can do just this with great advantage. Similarly, building up must not be too enthusiastically done. For instance, the maximum thickness need not go beyond 1½ to 2 in. at any point. Here again, one can occasionally break this rule and let

rockwork jut out to, say, as much as 2 in. if this is needed to create the required effect. The aim should be to create the maximum relief within the very restricted limits of the total thickness one is forced to work in.

The surface of the rising and falling rock masses should not be smoothed off or a pasty, unnatural appearance will result. Leave a fairly rough texture, for this will look much more attractive in the final set-up. Some people like sharp edges to the protruding sections of the rockwork but others argue that these can hurt the fishes. There is, of course, some truth in this but on the whole I think fishes are more sensible than aquarists seem to imagine. I have frequently used rock faces with pretty sharp, even dangerous, edges but I cannot recall losing any fish as a result of this.

An important point is the creation of strata in our rockwork. These can be 'drawn in' by a small sharp piece of wood or even the edge of a screwdriver. If you want to do this properly you should obtain some box-wood modelling tools from an artist shop. They come in various shapes and sizes, cost only a few shillings and are a great help in creating strata lines. Here again I must stress the fact that strata lines must be cut deep,

wide and bold (almost unnaturally so) or they will quickly disappear when covered with slime or algae. I have often picked up natural rock with beautiful strata lines, but a few weeks after placing in the tank both the attractive colour and the fine lines have disappeared leaving behind a rather peasea lump of stone.

When the modelling is completed the work is covered with a damp piece of cloth and the whole covered with a sheet of polythene. Concrete must not be allowed to dry out quickly. It should be kept damp as long as possible, at least for 2 or 3 days, otherwise a weak product will result. At the end of this period the wooden form can be easily removed, particularly if it has been oiled before use. The newspaper, too, should peel off easily from the back but some times it may require rubbing off with a flat piece of sandstone or a wire brush. Freshly made concrete rockwork placed in a tank will kill the fishes. I shall tell you how such artificial rockwork can be made perfectly safe later on, but let us next examine some other methods one can employ to create a rock screen.

*To be concluded next month*

## What's New?

### Books to Note

JUST published is a new edition of C. Van Duijn's *DISEASES OF FISHES*, a work that has been out of print for several years. The new edition costs 47s 6d and is published by Biffle Books Ltd. Also in a new edition is Colin D. Roe's *A MANUAL OF AQUARIUM PLANTS* (produced and published by Shirley Aquatics Ltd., 27s 6d). Some amendments and additions to the previous printing have been made and the book is now bound in a hard cover and has a colour dust jacket.

G. F. Hervey and J. Hems' *FRESHWATER TROPICAL AQUARIUM FISHES*, first published in 1963, has appeared again as a reprinting. This book describes and illustrates a very large number of the common and

less-common aquarium fishes, and with its eight plates in colour it is remarkable that its price is only 15s (Spring Books).

Additions to the Aquarium Paperbacks series (Studio Vista, 10s 6d) are *PLANNING AND DECORATING THE AQUARIUM* by Wilfried Weigel and *FOOD FOR THE AQUARIUM AND VIVARIUM* by Willy Jocher. The former title deals comprehensively with a subject seldom included in textbooks on aquarium-keeping and for anyone wondering whether an aquarium can be made into an attractive feature in the modern home it has many practical suggestions and good ideas.

IN their advertisement in December's issue the publisher's announcement of the new edition of *ALL ABOUT TROPICAL FISH* (George G. Harrap and Co. Ltd.) gave the incorrect price of 84s. This should be 85s.

### Tubifex Keeper

SOON to appear on the market is a special plastic container for keeping *Tubifex* worms in a fresh and lively state. This can be used where there is a source of running water, and can for example be suspended in the flushing cistern of the lavatory. It is

German in origin and is being distributed here by South Coast Aquatic Nurseries Ltd. (6s).

### pH Testing by Hykro

IN 1958 for July we mentioned the new Hykro pH Indicator, supplies of which have not been at the dealers until now. The pH test paper is in a roll long enough for 100 tests, supplied in a plastic container that also gives the reference scale of colours obtainable with the test paper in the range pH 6 to 8. Price of this simple pH test kit is 3s 6d.

### Special Offer

TO encourage aquarists to buy and try their new Kingfish Nutrition Flakes on their fishes Aquatic Hobby Ltd. are offering a cash reduction on the purchase price on some items of aquarium equipment and two book titles (details are being advertised in this issue). Lids from Kingfish food containers have to be collected to gain the advantage of this reduction, which is being offered for a limited period only.



For the  
Community  
Aquarium

Photo: L. J. JOHNSON

# The Sucking Loach

(*Gyrinocheilus  
aymonieri*)

**T**ROUBLED with algae? Despondent about the green growth over plants and glass? Then make haste to acquire one or two sucking loaches. These fish are really invaluable members of a community tank. Their low-placed mouth with its bony plates and well-developed lips that form a sucking disc enable them to clean up algae in a most efficient manner either by grazing delicately from plant leaves or glass or by scraping off the more firmly attached particles from rocks and stones.

Not only are these Thailand fish useful, but they are really very pleasing to look at and most interesting structurally. Their elongated shape is a light brownish yellow, shading to white underneath, marked with various dark blotches along their length and carrying a lateral line from the eye to the caudal. Since the sucking loach's existence depends upon its ability to obtain its food through the sucking action of its mouth, it cannot interrupt this activity to carry on the function of normal fish respiration, i.e. taking water in through the mouth and exhaling it through the gills. So there has developed in it, above the gill cover, an extra opening that admits water to the gill-chamber.

Another variation in this fish is its lack of a swim bladder. It has thus no buoyancy to enable it to come to rest in the middle water of the tank. This is counteracted by its proportionately large fins that are used for propulsion, and its sucker mouth that enables it to remain stationary in mid-water or moving water.

Like any species, *Gyrinocheilus aymonieri* has its 'rogues' or individualists. Bigger ones have been known to develop a passion for shifting quantities of gravel into hollows and hillocks at the back of a tank and one belonging to the writer literally developed an attachment to an angel fish and used this fish's flat side as a means of getting from point A to point B. Normally, however, the sucking loach is a very peaceful member of the community, growing to between 3 and 4 in. in a 2-3 ft. tank, where it is happiest if there is good aeration or very heavy plant growth.

If the supply of algae cannot keep pace with the appetite of your sucking loach, feed it with chopped lettuce or spinach, though it will also eat dried food that may have fallen to the bottom.

## MARINE FORUM



*I want to keep marine tropicals. Would it be advisable to 'have a go' with a coldwater marine aquarium first? What is the smallest size of tank you would recommend for a beginner?*

It is very difficult to say whether or not you should start with cold-water marines before progressing to the tropical side. It is undoubtedly an advantage to have some aquatic knowledge before starting on to tropical marines, but whether this be with ordinary tropicals or the simpler native marines will probably depend upon the facilities at your disposal. Indeed many members who have started into the marine field have set up a small native marine tank and, because of their success with it and the ease of obtaining fauna for it, have decided to remain 'coldwater'.

The smallest size of tank we recommend is 15 gallons (24 in. by 15 in. by 12 in.), and although this does not preclude the use of smaller sizes, the larger the tank, the easier it is to maintain.

*Are there available any molluscs that can be kept in a marine tropical*

# Your Marine Aquarium

## Queries Answered

*task with the commoner kinds of fishes?*

As far as we can ascertain, the only invertebrates generally suitable for keeping in a marine tropical tank are the sea anemones, although even some of these are not suitable for inclusion in the same tanks as some of the smaller, more delicate species of fish.

Of the true tropical marine molluscs, certain small conch are available from time to time, and these make excellent scavengers.

A point of warning here—all invertebrates, however 'clean', should undergo a period of quarantine as would normally be carried out with fish. Two of our members recently lost complete tankfuls of marine tropicals because anemones carrying parasites were introduced into their set-ups.

*A friend has told me that the flex to aquarium heaters can contaminate sea water and said that only the tube of a combined heater-thermostat should be in contact with the water. Is this correct?*

The flex to most of the proprietary brands of heater on the market today is covered with polythene or other plastic, which is quite suitable for use in your marine tank. Only if your heater has a rubber lead will you encounter any difficulty, as rubber perishes upon constant contact with sea water.

Your combined heater-thermostat if of the submersible type, can be completely immersed, but if it is one of the non-submersible variety then your friend is correct in stating that only the tube of the instrument should be immersed. It is advisable in this case to slightly angle the instrument so that the heater element is not directly above the thermostatic part. If you are not too sure of the type of your instru-

**ment, we suggest checking with your nearest dealer.**

**Queries on marine aquarium topics from readers of PET-FISH MONTHLY are answered here by the Technical Panel of the Marine Study Aquatic Society of Great Britain by special arrangement.**

*Can undergravel filters be used in marine tanks? So many authorities suggest the use of a thin layer of gravel only that this would seem to preclude the use of the undergravel filters with marines.*

The use of sub-gravel filters in marine aquaria has been widely discussed by many experienced authorities without their reaching agreement. However, most of our successful marine tanks do not have sub-gravel filters and only a very thin layer of coral or silver sand as a base medium (about  $\frac{1}{8}$ - $\frac{1}{2}$  in.). Any heavier layer than this can leave an area for bacterial action under the surface layer. The use of sub-gravel filters with fine sand would also seem impractical as besides the sand matting down and clogging the filters the majority of these types of filter work on bacterial decomposition of the sediments and the aim with marine aquaria is to reduce the bacterial population to a minimum.

*Membership of the Marine Study Aquatic Society of Great Britain is open to anyone interested in marine fish-keeping. Enquiries about membership should be sent to the general secretary, Mr T. Hall, 25 Casfield Gardens, London, N.W.6.*

# Planning to Breed Goldfish This Year?

By R. D. ESSON



- 
- The aims of the goldfish breeder
  - The importance of culling
  - Treatment of goldfish in winter
  - Preparation for spring
- 

I BELIEVE that the approach to goldfish breeding should be that of trying to improve on the quality of the fish in relation to the parents used. I continually read letters in fish magazines where the same question is asked over and over again: 'I have a pond in my garden with some goldfish in it. How do I set about breeding them?'. Invariably the answer given is a short essay on how the fish will breed in the pond's shallows on water weed. The weed is removed to tanks. The fry are raised on Infusoria, and so on. While it is possible to raise a few fish in this way, the chance of any real success is remote.

Breeding goldfish is work, giving to those who undertake it many hours of enjoyment, it is true, but still work. Unless this is understood from the outset there is no point in anyone considering taking up this fascinating part of the hobby. Far easier to buy any replacement from the petshops or goldfish breeder. There is also one other thing to be accepted by a goldfish breeder, that while any fishkeeper should treat fish with the care and respect that is the right of every living creature, it is silly to attribute to them human intelligence.

When attempting to breed goldfish varieties it is

necessary to cull them vigorously. This means destroying any fish that will not make the grade, and will involve the killing of many fry and later on a few young fish. Unless you can undertake this, think again. Many potential strains are ruined by the breeder's inability to kill the rubbish. It is absolutely wrong to tip unwanted fish into a pond or waterway. Apart from the fact that they probably will not survive, over many years there has evolved a balance between the fishes native to this country, and the indiscriminate introduction of other species of fish can have disastrous results.

It is proper and better to kill all fish that are culled out. This can be done either by dashing them against a hard surface, or by putting a teaspoon of Dettol in half a gallon of water and leaving them in this solution for an hour.

Winter is the time to plan next year's spawnings, to decide what you will attempt to breed and how many fish it is your intention to raise. Now is the time to look back on last year and see the mistakes that were made and the improvements that can be implemented.

The way to set about breeding any type of goldfish is the same, to condition the adults with good nourishing

foods and by keeping them in clean living conditions. There are many types of food on which to feed goldfish, for being omnivorous they will eat practically anything—meat, liver, heart, Bemax, dog biscuit, rabbit pellet food, worms, *Daphnia*, *Tubifex*, potato, and cabbage—you feed it, they'll eat it. The main thing to remember is to give as much variety as possible.

### Live Foods?

I know there is a school of thought that advises against the feeding of live foods which come from water (*Daphnia*, *Tubifex*, fly larvae etc.) because of the risk of introducing a disease or parasitic complaint. This is very true. Over the years I have introduced quite a few doses of gill fluke with *Daphnia* and lost complete spawnings as a result. On the other hand, if I did not use this food I would not be able to raise the number of goldfish that I do. It is a question of weighing the risk and making a decision. Sources of live food which have a bad reputation for causing disease I leave well alone.

Most goldfish breeders now accept that the failures in many of their spawnings are caused by the female not being fed correctly during the previous autumn. It is thought that she makes the foundation of her eggs during the autumn and over the hibernation period. That is the winter resting time and fish must have this rest if you want good spawnings the following spring.

It is noticeable that after a hard winter the spawnings which take place the following season tend to be larger and more fertile than those after a mild winter. It would seem that this is the natural order of things, in that during a hard winter more fish would die and the large spawnings that follow are Nature's way of setting the balance right. It is a fact that goldfish kept warm throughout the winter are either late in spawning or produce small amounts of fry the next season.

Goldfish, therefore, should be allowed to go cold—yes, all of them, moors, veiltails, celestials, the lot. But this must be done with understanding and common sense. Calling fishes 'cold-blooded' leads to many erroneous beliefs, especially the one that cold water does not worry them. Fishes are poikilothermic. Basically this means that they are at the same temperature as their surrounding water. In fact they are usually a few degrees higher because of their body actions, digestion, respiration, movement etc.

### Winter Treatment

Metallic fish can tolerate a low temperature better than nacreous or matt ones. This is because the guanine under the scales acts like an overcoat keeping in the body heat. Common goldfish, shubunkins and all the single-tails can tolerate much lower temperatures than the twintails, and for longer periods.

I leave twintails out in covered ponds until about the first week in January and then bring them into the fish house, where they are kept at a temperature of 45–55°F (7–13°C) and fed very sparingly. The water is circulated around the fish containers for 4 to 6 hours every day, and this is half the secret of keeping the fish cold, moving the water. The singletails would only be brought

in if the winter became hard, if we had a sustained period of frost or snow.

All this is governed by the type of winter we have; if it became a hard winter the fish would be taken in earlier, if it remained mild they would be left out longer. It is a matter of common sense. I must make it clear that all the twintails are taken in, but only those singletails I wish to breed with. The others are left in the ponds no matter what.

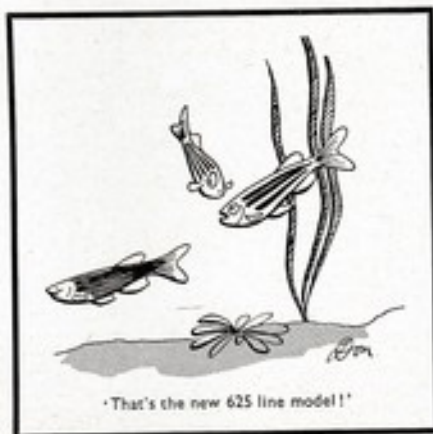
Some goldfish breeders part the sexes and others do not. I prefer to part them, working on the theory that absence makes the heart grow fonder!

### Disinfecting Bath

It is a good policy to give fish taken in from the pond a disinfecting bath to get rid of any gill or skin flukes they may have on them. Many fish die every spring from these pests. The fish are at a low ebb after the winter and the flukes gain a head start when the water begins to warm up. There are several treatments recommended.

(1) A 1% solution of potassium permanganate. Use 5 c.c. of this for every gallon of water. Treat no more than ten inches of fish for each gallon for one hour, using a fresh amount of water and permanganate for each batch of fish to be treated. (2) One gallon of ordinary paraffin. Catch up a few fishes in a net and lower them into the paraffin for about ten seconds. (3) 1 c.c. of acetic acid in one gallon of water. Immerse the fish for five minutes at 50°F (10°C) or for three minutes at 60°F (15°C); the warmer the water, the quicker the acid acts.

Any one of these treatments will do the job. Tanks of fresh water should be prepared to take the treated fish. It is a good idea to put in some black salt, 1 ounce to every two gallons. This gives the fish some form of protection until it grows a new mucous coat to replace the one that has been removed by the treatment.



•That's the new 625 line model!•

## BREEDER'S NOTEBOOK

By JACK COOPER  
and JOHN COOPER

(Joint show secretaries,  
Mid-Herts Aquarist Society)



# The Mouth-Breeding Lake Nyassa Cichlid

(*Pseudotropheus trewavasae*)



Photographs on this page show the authors' pair of fish whose spawning is described. Top of page, male fish; left, female

THE pair of Lake Nyassa cichlids whose spawning is described here had been kept together for 3 months in a tank 48 in. by 12 in. by 12 in. In length the fish are about 4 inches. The male is electric blue with a red dorsal fin, the female showing a mottled tan, brown with some black.

Water used in the aquarium was a mixture of equal volumes of tap water and rainwater in which four teaspoonsful of sea salt had been dissolved; reaction was pH 7.1 and hardness 230 parts per million. Temperature was 78°F (25°C). On the base of the tank was a

thick layer of gravel in which was planted an Amazon sword plant in the centre and some *Vallisneria* at each end (these were not disturbed by the fish). Two 4 in. flower pots were placed on their sides on the gravel, towards the tank's ends, with their open ends facing towards the centre and slightly inclined to the front. A 40 watt fluorescent tube was kept on 10 hours daily in the room, but it was not situated over the tank.

The fish were given mainly *Tubifex* worms, supplemented with scraped meat and some *Daphnia*. On 5th September last year the

female was first seen to refuse food. The gravel had been disturbed, although there were no definite depressions. The male was removed from the tank. The female remained in one of the flower pots, her lower jaw only slightly distended, and she refused food for 32 days.

On the evening of the thirty-first day (6th October) one young fish appeared and 16 more appeared the next day. The female completely ignored the young fry and accepted her first food. The fry showed colour and were about  $\frac{1}{2}$  in. long, very active and at once taking brine shrimp and sifted *Daphnia*. They were removed to another tank on 11th October, without losses occurring subsequently.

# Care and Breeding of the Neon Tetra

(*Hyphessobrycon innesi* Myers)

By J. LEE

**B**REEDING these beautiful little fish in my early years of fish-keeping became that much of a hazard that, after a year or two of very hard work trying to get them to spawn and after the expenditure of nearly £15 on purchasing good breeding stock (in those days they were very high-priced fish, to the tune of 30s to £2 each), I eventually gave up for quite a while, thinking it was nearly an impossibility to get them to breed. I had tried them in all sized angle-iron tanks through a 14 in. by 10 in., by 10 in., 18 in. by 12 in., by 12 in. to a 24 in. by 12 in., by 12 in. tank.

One weekend at home, resting in my fish house, I decided to re-think the whole problem, to see where I'd gone wrong. I had checked my temperature, pH conditions, blacking out and even position of the tank in the fish house, but after a couple of hours or so I was still no further to solving my problem. Eventually I got the feeling that I must spawn these lovely fish, about which at the time everybody was raving, so I settled down to the serious business of a series of different experiments, and to my way of thinking unorthodox methods first.

I decided this time to keep off angle-iron tanks and to try all-glass ones. I used a round battery tank, which incidentally was not of very clear glass, thoroughly disinfected for use. The tank was prepared with soft rain water that had stood in a pot of peat moss and the spawning medium used was a small clump of willow roots. The fish were put in it at night (temperature 74°F, 23°C) and the tank was covered right over with thick brown paper and the fish left to it. After three days they spawned all over the willow roots. When I took the paper away and, as always, crossed my fingers for luck, a very unusual sight greeted me. I saw it was a good spawning with between 200 and 300 eggs, but they were all white. I thought that there might be a chance of just a few eggs hatching, so I left the tank covered over for a week, checking at regular intervals for fry, but I had to accept defeat. Nothing appeared at all!

Now more determined than ever, I decided to try another all-glass vessel, which I got from a pet shop. I had the idea whilst looking in the window and watching six small terrapins scuffling around inside. I went in and the dealer said the tanks were 9s each, so I purchased two while I was at it. These tanks were very small, exactly 10 in. long, 7 in. wide and 5½ in. deep, with rounded

corners and a glass thickness of ¼ in. My wife laughed at this and said the fish would never breed in it since they would not be able to turn round.

From Woolworths I bought a small tin of black enamel paint and painted the bottom and two sides of the tank outside, and part of the front, but left a little slot at the front 4 in. by 2 in. clear so that I could peep in when uncovering. When it had dried out it gave the interior a black look. After disinfecting the tank, I prepared the water, which was soft acid rainwater that had been stored in a tank with peat moss at the bottom for several months. The water was filtered until it was sparkling crystal clear. I must emphasise this point. In my experience the water for neon tetras must be sparkling clear. Every precaution was taken to prevent bacteria and dim light and acidity are both anti-bacterial measures.

I filled the tank to a depth of about 5 in., making a very small addition of rock sea salts. The water was allowed to settle for a few days and then tested for pH, which was 6.5. This time as a spawning medium I selected a very fine fern-like plant, *Festucalia*, which will I believe grow on rocks. This had been placed in a solution of alum (strength one tablespoon to a gallon of water) and left for five minutes and then rinsed very thoroughly. The temperature was slightly below 73°F (23°C).

Now I was ready. I took the breeders out. The female was showing egg fullness. At this point a word of warning. When taking the breeders out from the tank the change-over into soft water must be done very gradually over a period, with a small amount of water added each time to the jar or container; on several attempts in the early days I found that transferring them over quickly proved fatal each time. When breeding cardinal tetras, on the other hand, I found they could stand this quick change-over. The pair of neons had been conditioned on small *Daphnia*, Grindal worms, micro worms and small ghost larvae. This time I was lucky. The spawning took place in a couple of days.

The eggs of neons are adhesive and will remain on the plants. When spawning is complete the parents should be removed. The tank is blacked out from any light, and it is important that the eggs should be in complete darkness; then they will hatch in about 36 to 48 hours. The fry are indeed one of the smallest known in



the aquarist world. As they are so small and their mouths and stomachs are so tiny, they should be fed very sparingly as uneaten food will soon perish and start unwanted harvests of bacteria and general pollution. The most amazing thing I noticed about neons was that the newly born fry hang at the top of the tank at an angle of about 45 degrees, looking quite listless and very transparent. Make sure there is a good top on the tank as the faintest draught will wipe the lot out.

Neons at a fortnight old get a faint colour of pale pink, developing further to an intense red on the lower part of the body, followed by a bluish-green and an electric-blue line. After that, in about 2 months, you are able to see the colours well. From the time the fry

appear up to the end of the first month they can be fed on Infusoria, brine shrimp and micro worms. They are soon able to take sifted or fine *Daphnia* and Grindal worms and, as a few more weeks go by, white worms and *Tubifex*. They will also accept small morsels of scraped liver and meat.

This little characin has given me great pleasure over the years and even up to this present day I think it is generally still a great favourite in this country. Any keen aquarist who achieves the feat of spawning the neon tetra can pat himself on the back and say 'Well done, it's been worth the trouble'. For the spawning of the neon tetra in my fish house over the last 15 years is indeed one of my treasured memories.



## Guppy Comment

By  
BILL ARMITAGE

RECENTLY my advice was sought by a friend who wished to stock a community tank. The tank was well set up, well planted, water clear, temperature right, in fact everything was in perfect order ready to house the selected fish. After having suggested several varieties of fish, I decided to give the guppy a plug, and advised him to buy six males. My friend's reaction to this suggestion was amazing. While he seemed quite pleased with my other selection he didn't want to know about guppies. This attitude puzzled me until we visited the pet shop to buy the fish I had suggested. His reasons then became very apparent, for the guppies on display were very poor specimens.

Upon enquiry the dealer informed me that although he would prefer to sell guppies of a much higher standard, he was unable to obtain good guppies. Now it is easily understood that a breeder wants to sell his surplus fish, but in my estimation such poor fish should never have been bred. The breeder would have been well advised to have destroyed these poor specimens, together with their parents, and make a fresh start with better stock. The result of this procedure would be success all round. The breeder would get more satisfaction from producing better fish and his financial returns would be far greater. The dealer would be happy in the knowledge that he was selling the customer what he wanted. The hobby would rejoice in the fact that good guppies in the pet shops would lead to the recruitment of new members to its ranks. What a pleasant thought, if all guppy breeders were to join me in this campaign.

Each section of the Fancy Guppy Association holds what they choose to call an annual open show. Actually these shows are wrongly named, as they are only open

to members of the F.G.A. Surely it would be more beneficial to all concerned if the shows were declared really and truly open? Many aquarists who are not members of the F.G.A. exhibit their guppies at their local club shows. If they were invited to show their guppies at a F.G.A. show the sense of achievement would be greater and some may be encouraged to become members.

There is food for thought in the fact that for every fish keeper who is a member of an aquarist society there are 20 who are not. One wonders why this state of affairs exists. Is it because the societies have little to offer the man with only one community tank or is it because most societies appear to be closed shops? It certainly isn't true that they have little to offer, as many a pleasant and enlightening afternoon or evening can be spent at their meetings. That is the reason why they were formed in the first place. It may be true that a number of societies appear to be closed shops to the outsider, but this is only because a lot of club members are inclined to look down their noses at the person who doesn't want to breed fish, but is quite happy with his single community tank. Surely this is not the right attitude to take? Every club should welcome these people as members, and share with them what can be an interesting part of the hobby.

Why not drop me a line on guppy matters that you want to bring to the notice of other readers interested in this speciality? The Editor of PFM has offered to allocate space to guppy matters so let's have your views and news in letters or short articles.



by ARPEE

THE correspondence column of PETFISH MONTHLY is a lively and entertaining section of the magazine, attracting the attention of correspondents from as far away as Goteborg and Dar es Salaam. From the Isle of Wight, however, there blows a wind which I find rather chilling. In the December issue Mr Walder suggested concerted breeders' action in an effort to divine the mysteries of breeding the 'shy' fish, such as the sharks. The lengths to which he proposes to go are rather frightening: the mass collection of data one visualises as being part of this scheme will inevitably end up on punched cards, and instead of having a hobby we shall find ourselves becoming just another bit of the vast production line which life is turning into.

There are few enough mysteries left these days, for me, at any rate, to warrant subjecting some of our most baffling and fascinating problems to the merciless attack of massed and sorted data. For many aquarists much of the pleasure of the hobby lies in the unknown, and it is the gradual unravelling of its wrappings that keeps the enthusiast enthusiastic. Who, in his senses, downs a rare old Port or a fine Brandy in one lunatic gulp? Mr Walder's proposals savour of the abhorrent "instant" this or "instant" that which are being flung at the wretched consumer from all directions by certain manufacturers, and I hope that large-scale "instant" fish breeding will never be fostered from within the hobby—at least, not as long as there is such a thing as the guppy to delight us.

Another aspect of this which may have escaped Mr Walder in his initial enthusiasm is the possible wastage of our valuable overseas Embassy staffs. If ever George Brown issued instructions to Commercial Attachés to gather information on the breeding habits of flying foxes, half of them would be clapped into the most noisome of foreign jails overnight, and many more would vanish quite unobtrusively, but irrevocably. This would never do. Let us therefore press on in our blundering but highly enjoyable way and leave the computers to be programmed to the white spot or cancer problems. They are extremely nasty matters which deserve that sort of treatment.

In expressing these views, I do not, of course, suggest that breeders should keep their secrets to themselves. In any case most of those who matter are only too willing to pass on their experiences to others, and there is hardly a better way of doing this than through the medium of the aquatic press. There are, too, the numerous specialist groups up and down the country which one does well to join for the enjoyment of their excellent companionship, if nothing else.

*Aphyocypris pooni* (the venus fish) was featured in the August issue of PFM, and I have been on the lookout for it ever since, as the White Cloud Mountain minnow has been a favourite of mine for a long time, and I was very interested in seeing just how different the two species are. My dealer received a small consignment the other day, and we did a shuttle service between the *pooni* and minnow tanks in a rather fruitless search for the clues. I must admit that we were both a bit baffled, but I bought a trio of what looked excellent fish and decanted them into a fairly small tank.

After re-reading the article in the August issue the difference was immediately apparent from the features of the dorsal fins—the minnow has red on the dorsal top, and the *pooni* has red on the dorsal bottom. To me, the *pooni* fish look rather more pointed than the minnow around the mouth, and certainly the overall colour is lighter and more even; this sounds a scant difference for a shilling or two more per fish, but like the Mountain minnow, the *pooni* strikes me as being yet another eminently desirable tenant for our tanks, and no dealer will ever have any difficulty in selling it. As it gets better known and more widely bred and imported, no doubt its price will align itself with that of the minnow. My trio has already spawned, and if there are any interesting features I will mention them in some future notes.

For those in doubt whether *pooni* is sufficiently different from the minnow to bother about, I should record that my seven year old daughter, who loves anything red, can pick out my trio who are now sharing with a tankful of minnows; she describes them as the 'red minnows'. Indeed, they display more red normally than the White Cloud shows even under emotion.



So many aquarists bemoan the lack of live food in the middle of winter, that I suspect that little imagination is being used to supplement the ever-available diet of dry food and *Tubifex*. White worms are certainly excellent value, and thrive on a bread and milk diet. Hard herring roe is also an easily obtained variation, and keeps well in the refrigerator. It should be defrosted under the hot tap before being fed to your fish, and a little goes a very long way. I have noticed that most of the smaller characins go mad over it, but that angels treat it with disdain, particularly the larger ones. One wishes sometimes that they showed equal indifference to their own spawn.

It is not realised half enough that micro worms are as eagerly sought after by adults as by young fish, so if you have some to spare, try it in your collections of smaller fish. Neons and cardinals just fight for it, and it is amusing to see harlequins snapping around for such diminutive tit-bits. I wonder whether these likes and dislikes are fairly general to a species, or whether certain strains prefer this or that particular food?

I have found that White Clouds prefer white worm to

Continued on page 358

Young green tench are suitable fish for the coldwater community



## A Coldwater Community Tank

FROM reading aquarium literature the impression is very easily gained that the community aquarium is something that is the concern only of the tropical aquarist. Very few coldwater community tanks are displayed at shows and they appear to be a rarity in the homes of fish-keepers.

I have kept coldwater communities successfully in tank sizes from 18 inches to 36 inches. Apart from the considerations that the coldwater species will not tolerate being kept together in the numbers that tropical communities usually have and that the variety of types and range of colours is much more restricted, such tanks are most interesting to keep and can be equally as decorative as tropical ones. They can be kept in situations where electricity is not available and can be specially recommended to those people who express an interest in fish-keeping but for various reasons of their own fight shy of using electrical aquarium appliances.

A 30 in. or 36 in. by 12 in. aquarium (15 in. high) is a good size to use, because of the extra fish it will accommodate and because if overhead lighting in a tank canopy is used the heating effect on the water is less pronounced with a larger tank. My best results have been with tanks in day-lighted positions and having only a sheet of glass as cover. Although I have not tried this, it seems likely that fluorescent lighting would be specially advantageous for the coldwater aquarium because of the low heat output from fluorescent tubes.

The coldwater aquarium with a glass cover can be placed in front of a window, but the side nearest the window should be obscured by an opaque background placed behind it or it should be painted over on the outside. Algae should not then become a major problem. Under these conditions the coldwater plants will do well, and don't imagine that there is no selection of these to give that sought-after underwater garden effect. Sagittaria, Canadian pondweed, hornwort, *Ladwigia* and milfoil (*Myriophyllum*) grow without any troubles

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By T. ROLAN

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and offer between them a variety of shades of green and red and of leaf shapes.

Water starwort is another plant that is most attractive in clumps, forming surface 'stars' of leaves as well as submerged ones, and it is the regret of many a tropical aquarium-keeper who knows this plant that it won't survive in warmed water. In a large tank you can even have a small water lily (potted), although this is unlikely to do well for more than a single season under aquarium conditions. In fact almost any pond plant of the submerged kinds can be tried in the tank, but with the ones mentioned you can be sure of maintained growth and success.

In coldwater fish-keeping the goldfish is bound to come first to mind, but in my opinion the goldfish varieties are best excluded from the coldwater community. I like to see them kept on their own and it is in fact recognised to be one of the more difficult feats in aquarium-keeping to maintain a presentable furnished tank for goldfish.

One fact to be kept in mind about coldwater fishes generally is that if the aquarium is to remain a healthy one all the precautions recommended to be taken with fishes newly acquired must be carefully carried out. Keep them and observe them in unplanted tanks for several weeks before putting them in the community tank, to be sure that they are not carrying parasites and are otherwise free from disease.

What kinds of coldwater fishes are available? Quite a few, you will find, if you watch the dealers' lists throughout the year, although availability of some fish tends to be seasonal. Early in the year the attractive little bitterling is usually to be had, along with the freshwater



A group of small golden orfe in a furnished coldwater aquarium

dogfish and American sun bass. The last-named (several different species are on the lists) can be placed in the community when small but become aggressive as they increase in size and may then have to be removed. The North American catfish is another fish that is usually available and a couple of the small ones can be obtained to start the tank collection.

In the spring and early summer small carp (bronze, mirror and Crucian) are often offered for sale, along with small silver and golden cefe, green and golden tench and golden rudd. Don't be put off by the small size of the fish, for this is a distinct advantage for the community tank. With proper care you will find that the rate of

growth of some can later be a source of regret for you when you have to remove them to a pond because they have outgrown their aquarium.

Because of the restricted number of fish that can safely be kept (one inch of body length to every 24 square inches of water surface is a guide giving a margin of safety), and because a pair or trio of any one kind should be kept, it is obvious that a large selection of the types available is not practicable within one tank. Thus a community of three or four kinds is adequate for a 30 in. or 35 in. tank, and unless you are a restless type who must have variety and ever more variety you should find this gives interest enough.

## Personal Comment

*Continued from page 356*

*Tubifex*, and *Nannotomus trifasciatus* nearly always rejects *Tubifex* when white worm is present, and has to be pretty hungry to eat *Tubifex* at all. It is fairly certain that most fish will eat the earthworm if you reduce it to small enough bits, but as the ground may be a bit frozen from now on greater efforts will be required than hitherto to collect it.

Culture media for micro worms are very varied, but the least troublesome I have come across is "instant" porridge and cold milk, mixed to a thin paste. Micro worms absolutely thrive in this, and it justifies the existence of instant porridge, for which I can think of no other legitimate use. I will hastily add, in deference to our Scots readers, that ordinary oatmeal takes much longer to prepare, but in any case I very rarely leave any for the fish. Earthworms last for a long time in a box of peaty soil, and seem to require little of the heavy feeding so necessary for other live fish foods.

I have made some caustic comments in this column about the use of artificial plants in aquaria, and in particular have campaigned against divers and light-houses. However, in conversation a week or so ago with one of the 'greats', I heard the other side of the flower story, which I will gladly relate. The argument was that not all of us can grow natural plants, in whose stead the artificial ones should be used, until real ones supplant them. In other words, you arrange a number of synthetics in your tank, and plant real ones in clumps in between, removing the former when (and if!) the natural ones begin to push on. For those with 'fungus fingers', who can never grow plants at all, the synthetics are left in permanently, and redispersed from time to time, for change of effect. This seems a very fair situation to me, as it allows fish lovers who aren't gardeners to enjoy the hobby, too. It is certainly true that there is a splendid range of artificial plants available, which are both striking in form as well as being tastefully made. They are reminiscent of marine growths in some cases, and look a little strange with characins disporting amongst them, but they could never be condemned as bad taste. This, then, leaves us with those other ceramics, for which I still await some justification!

## Coloured Plants for the Aquarium

### *Cryptocoryne Beckettii*

By C. D. ROE

THIS species of *Cryptocoryne* has several forms, and appears to be extremely variable according to the locality in which it is found. There are two main divisions. First we have the originally described form, *C. Beckettii* Thwaites ex. Trimen from Ceylon, and which because of errors in American literature was known in the hobby as *C. cordata*. This plant, according to its growth, varies from light green with green or pinkish underside to rich reddish bronze with dark purple underside.

In 1958 I imported an apparently new species from Ceylon. This had rich dark reddish-brown foliage, beautifully marmorated on the upper surface and dark reddish purple on the under surface. During cultivation this plant changed its colour completely and to begin with produced greenish foliage. As the plants became established the leaves turned first to olive brown and later to the original beautiful shade. Grown emersed it produced dark-green foliage with purple underside, and the plant readily flowered in the spring. The inflorescence indicated that it was a form of *C. Beckettii*, but grown side by side with the original form the foliage of his plant was always completely different from the original *Beckettii*,



Different shades and forms of leaf are shown when the plant is grown out of water (left) and immersed (right)

irrespective of conditions under which it was grown.

This is one of the instances where in this very variable genus two completely unlike *Cryptocoryne* plants have to be united under one species. This narrow form of *C. Beckettii* is

one of the most attractive and easy to grow medium size cryptocorynes and is usually in plentiful supply at a low price. Normal maximum height is 4 to 5 inches but under optimum conditions it may obtain a height in excess of 9 inches.

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## Transatlantic TOPICS

EVERYBODY but everybody seems to sell fish in the States and this includes the large department stores, so it follows that would be purchasers are enticed to buy from every side: gimmicks, free gifts, cut price deals, all are used to get the dollars from pocket to cash register. One large store in the Middle West had prices of fish so ridiculously low that a

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By JIM KELLY

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local dealer was prompted to ask where the profit came from? With typical 'Hoosier' humour the salesman replied: 'From the sale of

plastic bags and the rubber bands!' Remarks like that won't guarantee a store manager's job but he deserves an 'E' for effort.

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Ask most fishkeepers about climbing perch (*Anabas testudineus*) and it's ten to one they will say the fish that walks on its fins. A keen hobbyist in Chicago nearly jumped down my throat when I said this and went to great pains to tell me they walk by

means of their gill covers. The movement is a series of short jerks during which the fish lies on one side then the other. He ended his informative chat with a practical demonstration. No, he didn't attempt the movement himself but took me through to his fish basement where he had a tank of climbers. After watching them perform I feel sure they would stop any show courageous enough to bench them in their Any Other Variety Class.

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The Californian Fish and Game Commission have sparked off a rumpus that has ricocheted from the Pacific to the Atlantic coastline: this group of officials administer a law that requires a permit before certain creatures can be imported or even transported within the Californian State boundaries. They draw up the list of 'prohibits'. Now, all that sounds simple enough; they began by naming the piranha and despite the angry protestations this aroused from aquarists they continued: danio, barbs, rasbora, loaches, like Topsy the list grew and grew and to top it all finished up with, of all creatures, the goldfish! Recently, the cuckoo bird was added to their collection of 'animals non grata!' I loved Al Klee's reply to this latest move! 'I have news for the Commission; the cuckoos are already in!'.

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Though considered a must by the majority of aquarium beginner's publications, catfish have never captured the imagination of large groups of aquarists, yet they are a fascinating group that deserves more followers. One member of the cat 'tribe' to be wary of, though, is the stonecat (*Noturus flavus*). Nicknamed Mad Tom by U.S.A. fishkeepers, this catfish has a poison gland situated at the base of the pectoral fin; a prick from this can inflict a very painful wound. If you are now worried about that 'unidentified' catfish in your collection let me hasten to add it can be distinguished from the bullheads and other cats by the fact that its adipose fin is almost continuous with its tail fin. Though most Mad Toms found in the U.S. rarely exceed 3 inches in length, this fish can grow to nearly a foot.



### Myrio for Breeding

*Myriophyllum* is often suggested for use in spawning tropicals but I cannot get this plant to grow in my aquarium. As soon as it is planted the leaves drop off or are pulled off by the fish and only the stalks are left.

There are quite a few varieties of *Myriophyllum* available and not all of them are suitable for the higher temperatures in a tropical tank. Try to obtain *Myriophyllum hippuroides* or, better still, *Myriophyllum brasiliense*. A problem connected with their growth is that, although they require good light, the quantity must be firmly regulated as many forms of algae are attracted to their fronds and will smother the plant if not carefully removed. Another hazard is the adherence to their leaves of floating particles of mulm in the water. They quickly develop a 'dusty' look and the film of particles will eventually cut off all light from their branches and cause the plant to rot. However, the right species in well-filtered water and good light will grow strongly and develop into a very attractive and useful aquarium plant.

### Aquarium Removals

*I am soon moving house and wish to transport my tank of tropical fish in the safest possible way. Can you please advise me on this?*

The easiest way to transport fishes in quantity is in large polythene bags such as those obtainable at many laundrettes. Local aquarist shops may also be able to supply these. Use as many bags as possible so that the fishes are in no way crowded. The bags should be rinsed out well and water from the tank siphoned in to a depth of about eight inches. Once the fishes are

placed inside, the top of the bag should be gathered together with one hand while the neck of the bag is run between the thumb and forefinger of the other hand as far down as possible so that the bag is bulging tightly with air. The neck can then be fastened with a knot or by means of a thick rubber band wound tightly around it. The aim is to have as little water in the bag as is compatible with the fishes' comfort and a great deal of air. The bags can then be placed inside a cardboard box well padded with newspaper and will serve as transport containers for up to 12 hours. Most of the remainder of the tank water, if it is not wished to discard it, can travel in such a bag and the tank itself, containing the plants, gravel and a small quantity of water, can be sealed with polythene also during the removal.

### Pond Fish

*Up to late in December my pond fish have at times been very active. They look as though they would take food, but as the books say they do not require feeding in winter I am uncertain what to do.*

Until sufficiently prolonged cold spells occur to cause the water temperature to fall to the values at which the fish remain quiescent on the bottom it is likely that they will be seen swimming around. In a very mild winter in the south it is possible for them to keep active throughout the period, although this is unusual. This is what makes the decision of whether to feed or not a tricky one; you can be guided by their response to a very small amount of floating food, but do not feed often and avoid any possibility of giving excess food. If the fish are used to taking worms of any kind it might be safer to offer these rather than dried foods.

# Foods for use with

By T. R. HALL

Marine Study Aquatic Society of Great Britain

# Marine Fishes

**T**O the newcomer to marine fishkeeping, the feeding of marines may seem to present some nasty problems not encountered by the freshwater aquarist. In the first instance, marines are notorious for refusing to feed at first and often some peculiar tricks have to be resorted to in order to get them interested in foods. Then, the freshwater aquarist has at his disposal a vast array of dried foods whereas we marine enthusiasts have, as far as I am aware, only TetraMarin and the new freeze-dried brine shrimp available to us. Even these are of little use if the marines, like my coldwater ones, will not touch any form of dried food. What then is left to us? Surprisingly enough, the range is very wide.

There are two main types—'live' foods and, what I call for want of a better term, 'dead' food. This latter consists of chopped shrimp (fresh, not preserved or potted), pieces of fish flesh (from the family's tea) and so on. However, we cannot arrange our shopping list for the fishes' benefit every day, and so other forms of food must be acquired.

This brings us to live foods, which again I divide into two categories—those readily obtainable from shops and those captured or cultured personally by the aquarist. Of the latter variety some will immediately spring to mind. Aquarists living near the sea are, of course, in the very happy position of having a vast, varied and self-perpetuating culture of live foods virtually on their doorstep.

Mussels are welcomed by most marine fishes, and, whilst the flesh is a little tough, many fishes are capable of tearing suitable chunks out of them. I personally open the shell wide and drop it in, leaving it there until the fishes have had enough. Mussels are, however, rather difficult to keep alive for any length of time, owing to the difficulty of feeding them. They will die without the aquarist being aware of it until the shells suddenly gape open, and then they emit the most evil stench and almost instantaneously pollute the water. The best method I have found of storing them for a couple of days is to put them dry into the freezing compartment of the refrigerator (when the wife is not looking, of course). Cockles and clams may be treated in the same manner.

Winkles and whelks are much easier to maintain alive, particularly in a tank well coated with algae. For feeding to the fishes, the shell should be crushed, the flesh removed and dropped in the tank. Care must be taken with this method that all excess of food is removed unless the tank water is strongly filtered. Gobies are

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**The menu for marine fishes is not as restricted as might appear on first consideration. Some long-established aquarium foods can be adapted for use in the marine tank and a little ingenuity can provide other acceptable ones**

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particularly fond of winkle flesh, as demonstrated by a non-aquarist friend of mine who insisted that he was catching four-inch 'guppies' on the Jersey coast using 'sea snails'!

Shrimp flesh is another excellent food, except that from the fish-keeper's point of view it is rather uncomfortable and messy. Fresh shrimp flesh is very sticky, glutinous and unpleasant. However, the fishes do not find it so, and shrimps are easily maintained in aquaria. The shrimp will eat mainly the same foods as the fishes, and should be killed in the time-honoured manner of throwing them hard on the floor. The shell is then stripped off and pieces of the flesh dropped in the tank. The same warning as regards removal of excess given for winkles also applies here. Removal is best performed by the 'dip-tube' method. Crabs may be treated in the same manner, although killing them may be a little more difficult.

We will now leave the sea shore and consider those live foods available to the inland aquarist. Earthworm makes a fine food, but the preparation is so tedious and messy that I am disinclined to use it. All the mud must be removed from the worm's intestine before use, and all excess of flesh must be removed from the tank afterwards.

Of the foods available to be cultured at home, brine shrimp has the most obvious marine application. In spite of their preference for water of a higher salinity, the brine shrimp will hatch, live and even breed happily in normal sea water. They are not bothered by the water being stagnant or rather polluted. They should be raised, for most fishes to eat, to adult size (approximately 1-2 inch) by feeding with Infusoria culture. This is accomplished in about 15 days. It is advisable to turn off any filter while giving brine shrimp to your fishes, as they are not terribly strong swimmers. Those remain-

ing uneaten may be left swimming in the tank until consumed.

White worm is a very convenient food, readily accepted by most fishes, although gobies sometimes appear to have difficulty digesting it. I have, in fact, seen white worms go in one end only to reappear at the other end a few minutes later—still alive! After a few seconds in marine water the worms become noticeably thinner. This is a result of the osmosis between the body fluids and the denser water outside. The lighter body fluids seep out through the skin, thus virtually dehydrating the worm, although it will continue to live for a considerable time.

Of the three foods generally available at an aquarist shop, only two are of any use to the marine fishkeeper. Tubifex worms are virtually useless. They die almost as soon as they come into contact with salt water, will pollute water rapidly, and are extremely difficult to remove from a tank. *Daphnia* will live for a fair time in salt water, and remain quite active. Most marine fish

seem prepared to eat *Daphnia*, which is not altogether surprising as the water fleas are distantly related to crabs. However, great care must be taken with the use of *Daphnia*, as it is almost impossible to locate once it has died. The filter, should, of course, be switched off while *Daphnia* is fed or the majority of it will be wasted.

Far more surprisingly, an excellent food is glass-worm. These larvae seem to be almost as at home in salt water as in fresh, except that in sea water they are rather over-buoyant and have great difficulty in getting below the surface. However, they are avidly accepted by fishes capable of feeding at or near the surface. It is a great pity that this food is only available in the winter months, as it is a fine food and generally gives the fish a good chase for its money.

From the foregoing it can be seen that feeding of marine fishes is by no means the bugbear that it at first appears. A combination of a few of the above foods should keep any marine fish in really good condition for a long time.

## Spawning the Cloudy Damsel

(*Dascyllus carneus*)

HOW does the old axiom go? . . . 'first obtain a pair'—well, the first two cloudy damsels I purchased turned out to be just this, whether by dealer's choice or beginner's luck I shall probably never know.

For their initial period of quarantine they were placed in a 12 in. by 15 in. by 8 in. all-glass 5 gallon battery jar filled with Meersalt artificial formula seawater to a density of 1.021. Filtration of their tank was accomplished by means of a Junior Filterfast outside filter containing just a ½ inch layer of carbon and some nylon floss. There was also an airstone running a slow stream of fine bubbles in the tank.

The bottom of the tank contained a minimal layer of silver sand, on top of which were two plastic-type artificial ferns and a large red concrete rock. Temperature varied between 69 and 75°F but at most readings seemed to be about 72°F (22°C).

The fish when first purchased arrived in a double polythene bag containing about two pints of water, and to acclimatise them to the awaiting tank took quite a while, with gradual dilution of their water, which was 1.025.

After the fish had settled down and as no signs of disease were present I decided to move them to a larger tank that I had just acquired, but taking a long look at them decided to leave this transference for a couple of days as their coloration had changed completely since they first arrived. The male was a basic grey and black colour with a large white spot immediately below the anterior part of his dorsal fin, which had turned black. The female on the other hand was basically black and white striped.

The only foods they had been given were Tetramarin,

freeze-dried brine shrimp and live young brine shrimp.

They had always seemed very shy, using the cement rock to hide behind at the first sign of an approach to the tank, but on this particular occasion the male seemed much more 'forward' and lively than before, actually feeding as the food was being put into the tank instead of waiting for me to step back and watch. (Here I am assuming that the male was the more colorful of the two.)

By GERALD JENNINGS

They spent most of that evening clearing the side of the cement rock in typical cichlid fashion and again reverted to hiding on sight of any shadows. At 12.20 a.m. the next morning I left them to it and retired for some sleep, leaving the light on over their tank (as I do with all my marine tanks at night; the lights are turned off during the day). In the morning, imagine my surprise to find an area about 1 inch in diameter covered with opal-white eggs each about the size of an ion-exchange resin globule. At this point, however, duty called and I left for work and so could not observe them further. When I returned home that evening, of the eggs there was not a trace. Of the parents—well, they had literally torn the fins off each other. I checked the conditions; nothing had changed. The pH was still 8.4.

I have now moved the parents to their predestined tank and heavily dosed them with Dissolve in the hopes that they may recover. Who knows, the next time I may be more successful.





AT the quarterly meeting of the **ASSOCIATION OF YORKSHIRE A.S.** Mr F. S. Harris (York) accepted the vacant position of secretary until the next annual general meeting. It was announced at this meeting that there are four vacant places (two double cabins) for the trip by YORK & D. A.S. to the aquarists of DEN HAGUE, HOLLAND from 22nd March to 26th March. These are offered to members of any Society who would care to join. The trip will cost approximately £18 and this will include using the ship as a hotel (with meals) while in Rotterdam. Places will be given to the first to apply and further details can be obtained from Mr F. S. Harris, The White House, Upper Poppleton, York.

The next meeting of AYAS will be at 3.0 p.m. on the 18th February at the Church Institute, Albion Place, Leeds.

**CALLING CLUB SECRETARIES.** The success of the **BRESTOL T.F.C.'s** three-day open show in 1966 has prompted the club to hold another this year on 22nd-24th June. It would be appreciated if club secretaries would forward their addresses to Mr W. Holland, 416 Whitehall Road, St. George, Bristol 5 to enable the full show schedule to be circulated to all parties.

THE NEW committee of the **CLAPHAM AQUARISTS SOCIETY**, elected at their recent annual general meeting, is as follows: chairman, Mr A. Kemp; secretary, Mr A. D. Dornier (111 Hopton Road, Streatham Common, London, S.W.16); treasurer, Mrs M. J. Denbow; show secretary, Mr A. G. Hart; committee members, Mr B. J. Bell, Mr J. Rankin, Mr C. Felleman, Mr L. Gannier and Master B. Denbow. A new office, that of public relations officer, fell to Mr F. G. Glynn (64 Beclands Road, Tooting, London, S.W.17). The aim of the new committee is to provide ever-better entertainment and items of interest for club meetings, that take place every second

Tuesday in the month at St. Peter's Church Hall, Clapham Manor Street, London, S.W.4. Films and lectures have already been arranged and it is hoped to hold more inter-club shows. There will also be a table show for the junior group, which is growing in number. A new idea is to provide members with a 'between-meetings aid for problem fish' service. Members in trouble with their fish can call the secretary (STR 4195) or the P.J.O. (BAL 0485) and obtain immediate help and advice.

AT the annual general meeting of the **TOTTENHAM & D. A.S.**, an entirely new committee was elected for the coming year under the chairmanship of Mr K. Nutt, the well known B class judge. Club trophies were awarded to Mr B. Barker (home furnished aquaria), Mr S. Mooney (points cup), Mr D. Nutt (breeders egg-layers), Mr K. Nutt (breeders livebearers). It is hoped that any slight end-of-season apathy will be dispelled by the programme of lectures, slide and film shows, table and inter-club shows arranged by the new committee to keep members fully occupied and to interest new members.

It is also proposed to hold the annual open show, that had to be postponed in October of last year because the venue became unavailable, on 4th March at the Territorial Army H.Q., Priory Road, Hornsey, London, N.8, when it is hoped all friends past and present will be there to give their support. Details can be obtained from the secretary, Mr H. Barnes, 71 Mattison Road, Harringey, London, N.4.

**CLIMAX** to their social year for **HOUNSLOW & D. A.S.** was the annual dinner and dance at which over 100 members and guests were present. Mr Bob Nelhams, the entertainment officer, well deserved the congratulations he received. The hall looked most festive and a particular feature of the decor was the table decorations made by Mrs Laura Luff. These were quite delightful and raised a very useful sum for club funds when they were subsequently auctioned.

At the A.G.M. held previously, officers elected were: chairman, Mr John Thorne; secretary, Mr Derek Woodward (16 Ellerdine Road, Hounslow, Middlesex); show secre-

tary, Mr Ray Scurry; treasurer, Mrs Sylvia Gillard; press secretary, Mr Barry Abbott; librarian, Mr Bob Cook; public relations officer, Mrs Ing Carter; entertainments officer, Mr Bob Nelhams; floor members, Mr Eric Sheppard, Mr Alec Hastings. Annual show sub-committee: Mr Peter Cairns; Mr Bert Pratt; Mr Eddie Parry.

The society are holding their first convention on Saturday, 25th February at the Marlborough School, London Road, Isleworth at 8.00 p.m. The guest speaker will be that very able speaker, Mr Jim Kelly, talking on fish-keeping in the U.S.A. The entrance fee will be 2s 6d and all hobbyists are very cordially invited and may be assured of a first-class evening. Another date to be noted is their All Pools Dance on Saturday, 1st April. This is being held at the Feltham Assembly Hall. Tickets (6s 6d) can be obtained from the social secretary, Mr Bob Nelhams, 15 Hayling Avenue, Feltham, Middlesex and parties from other societies will be especially welcome.

**RESULTS** of the **BRADFORD & D. A.S.** table show competition for the year were announced at the annual dinner and the A. E. Thornley Memorial trophy for 1966 was awarded to Mrs M. Firth with 36 points. Mr D. Parkin came second with 14 points; 3, Mr P. Moorhouse (13 pts); 4, Mr D. Carr (11 pts); 5, Mr H. Greenwood (10 pts). Results of the home aquaria competition have also now been announced. 1, Mr P. Moorhouse (82 pts); 2, Mr K. Russell and Mr J. Barford (80 pts each); 3, Mr H. Fletcher (79 pts); 4, Mr C. Holdsworth (78 pts); 5, Mr J. Holden (76 pts); 6, Mr W. Batey (75 pts).

**AIREBOROUGH & D. A.S.** award list for 1966 carries a distinctly international flavour with their decision to award prize cards to the following:

Best exchange bulletin: 1, Fish Tales (Greater Iowa Aquarium Assoc. of Des Moines); 2, Colorado Aquarist (Colorado A.S. of Denver, U.S.A.); 3, Aqua News (Minnesota A.S.). Best editor (male): 1, Mr Jim Woodson (Central Virginia Society); 2, Mr Larry Arnold (Greater Iowa A.S.); 3, Mr Dallas Knight (Minnesota A.S.). Best editor (female): 1, Mrs R. Hutchinson (Harbor A.S.); 2, Mrs L. V. Bradley (San Antonio A.S.); 3, Mrs T. Mann (Broward County A.S.). Best regular

writer (male): 1, Mr B. Davis (Greater Iowa A.S.); 2, Mr Nichols (San Antonio Aquatic Research); 3, Mr Larson (Minnesota A.S.). Best regular writer (female): 1, Mrs Edith Bushfield (Davenport A.S.); 2, Mrs Ella Pittman (Colorado A.S.); 3, Miss Ngarie Phillips (Newcastle A.S.).

Newest home winners are: Home aquarium competition: 1, Mr Ken Evans; 2, Mr Peter Joyce; 3, Mr Bruce Lancaster. Table Shows Awards: Specified class: 1, Mrs Barbara Helm; 2, Mr Eddie Walker; 3, Mr Ray Hampson. A.O.V. class: 1, Mr Ray Hampson; 2, Mrs Joyce Dickinson; 3, Mrs Barbara Helm. Novice class: 1, Mr Peter Joyce; 2, Mr John Winsley; 3, Mr Peter Iveson. Junior class: 1, Mr Paul Kirby; 2, Mr Peter Dickinson; 3, Master Campbell. Corresponding members competition: Photographic competition: 1 and 2, Mr Dale Turecka (U.S.A.); 3, Mr C. Colson (Punnett). Article competition: 1, Mr Boston; 2, Mr Alan Town; 3, Mrs Hilda Derris.

29 members of the society ignored the wet, blustery weather to attend the annual general meeting, when the following officers were elected: chairman, Mr R. Hampson; secretary, Mrs B. M. Helm; treasurer, Mr Iveson; committee members, Mr Burnap, Mrs Burnap, Mrs Dickinson, Miss J. Helm, Master P. Kirby, Mr Lancaster; auditors, Mr Hallas and Mr Midwood. The result of a ballot taken for the Member of the Year trophy was that it was retained for the second year running by Mr R. Hampson. At the meeting, a very interesting tape recording sent by one of the club's corresponding members, Sgt R. S. Holmes stationed in Cyprus, was heard. The tape was left running for the rest of the meeting so that it could be sent back to Sgt Holmes.

**THE NORTH WEST LONDON GROUP OF AQUARISTS SOCIETIES** held one of their five annual meetings recently. The hosts were HAMPSTEAD A.S. and the results of the competition for barbs, corydoras, loaches and platys were:

Barbs: 1, Mr F. Caffell (Independent); 2, Mr T. Glass (Willesden); 3, Mr S. Tarrant (Willesden). Corydoras: 1, Mr S. Tarrant (Willesden); 2, Mr J. Keeley (Willesden); 3, Mr Terry Hall (Hampstead). Loaches: 1, Mr B. Street (Riverside); 2, Mr J. Kettle (Independent); 3, Mr T. Hall (Hampstead). Platys: 1, Mr G. Pocock (Riverside); 2, Mr F. Caffell (Independent); 3, Mr J. Keeley (Willesden).

Best fish in show was an albino tiger barb owned by Mr. Caffell. The show was judged by Mr. A. G. E. Jessopp of the F.B.A.S. and whilst the judging was going on the audience were entertained by a

slide show given by Hampstead member, Mr H. Hatridge.

AT the annual general meeting of the **FEDERATION OF BRITISH AQUATIC SOCIETIES** on 4th December last, the offices of chairman, treasurer, assistant general secretary and five council positions came up for election. Mr A. G. Jessopp was re-elected chairman, Mr R. Dove elected treasurer, Mr R. Eason re-elected assistant general secretary, Mr T. W. Glass and Mr D. W. Ellis re-elected council members, while Mr Jeffs, Mr J. Linsale and Mr Armstrong replaced Mr E. L. Arthur, Mr Donnelly and Mr A. H. Gale. A query arose concerning the validity of the affiliation of the London Section of the Marine Study Aquatic Society, but the position was clarified by their delegate Mr T. Hall.

There followed a general assembly of the Federation at which a diploma was presented to Mr R. Whittington for his excellent shubunkin that had won many first awards during the season.

The table show for any species of egg-layer was won by Mr J. Stillwell of Poetsmouth with a sun bass. Second and third places were awarded to Mr T. Glass for a pencil fish and a *Fundulus*, and Mr Jeffs came fourth.

Meetings will be held during the year on 4th March, 3rd June, 2nd September and 2nd December.

**WEDNESBURY A.S.** does not forget the importance of including talks for the novice and 'one-tank man' in their programme. A recent talk by founder member Mr B. Woolaston on tank 'balance' was full of sound advice gleaned from his experience as a practical aquarist and covered plants, water, fish and feeding.

The table show was for barbs. Judged by Mr and Mrs R. Cook, results were: class A: 1, Mr W. Downing; 2 and 3, Mr G. Rothin. Class B: 1, Mr A. Wood; 2, Mr W. Spittle; 3, Mr W. Mountford. Best fish in show award went to Mr W. Downing.

**MERSEYSIDE A.S.** enthusiasts have continued to support local open shows with great vigour during the last few months and achieved a good deal of success. At Stockport,

Mr Fred Mulla obtained two firsts (large cichlids, swordtails) and a second (labyrinth); and Mr Bob Moorcroft was awarded two firsts (large characins, labyrinth), a second (danios) and a third (swordtails). Mr Ken Parkes was awarded best in show and two firsts (large barbs, loaches) and a second (medium characins). At Heywood, Mr Mulla obtained a first (swordtail) and a second (catfish) while Mr Parkes achieved best in show, a first (large barbs) and a second (loaches). At Blackpool, the following resulted: Mr Mulla, second (swordtails); Mr Moorcroft, second (a.o.v. characins). Mr John Robinson, third (a.o.v. characins); Mr Ken Parkes, first (a.o.v. barb); Mr Mulla, first (a.o.v. cichlids); Mr Parkes, third (loaches). At Macclesfield Mr J. Newman gained a second (top minnows); Mr Mulla a first (sharks), a second (large characins) and a third (large cichlids); Mr Parkes two firsts (large barbs, loaches) and two thirds (loaches, a.o.v. flying fox).

The second open table show held by **STONE A.S.** drew a large crowd of visitors and proved a great success. During the judging a colour slide lecture on killifish and fish-house layouts for these fishes, given by two B.K.A. members Mr Paul Stokes and Mr Harry Williams, gave much interest and pleasure. So, indeed, did the lighter side of the entertainment, the raffle and refreshments organised by the ladies. 23 raffle prizes were there to be won, the star item being a professionally decorated cake with the round badge of the society iced down to the minutest detail. Owing to the last-minute indisposition of the president's wife, the awards were presented by Mrs Joan Cartledge, the chairman's wife. The Joule Cup for the best fish in show went to the club's show secretary, Mr K. J. Harvey for an exceptionally fine *Cyprinodon whitei*—as Mr Leadley the club's vice-chairman puts it 'a fit reward for any "poor ole hon. show sec."'. Detailed results are:

Plants a.o.v.: 1 and 2, Mr C. Barlow (Stone); 3, Mr K. J. Harvey (Stone); 4, Mr J. Brough (Stone). Breeders live-bearers, tropical: 1 and 2, Mr and Mrs Deves (Atherstone); 3, Mr L. Hand (Tamworth); 4, Mr F. E. Woodall (B.K.A.). Breeders egg-layers, tropical: 1, Mr T. Payne (Stone); 2, Mr L. McCourt (Gorton & Uppals); 3, Mr L. Douce (Atherstone); 4, Mr K. J. Harvey (Stone). Pairs live-bearers: 1, Mr

and Mrs. Delves (Atherstone); 2, Mr. R. Scully (Coventry); 3, Mr. R. Howell (North Staffs); 4, Mr. P. Hodgkinson (Gorton & Openshaw). Pairs egg-layers: 1, Mrs. O. Fox (Rugby); 2, Mr. A. W. Spencer (Atherstone); 3, Mr. E. Price (Gorton & Openshaw); 4, Mr. F. Underwood (Leamington). Guppies: 1, Mr. F. J. Saunders (Nottingham & D. A.S.); 2, Mr. P. Reynolds (Swillington); 3, Mr. H. Darveport (Mansfield); 4, Mr. L. Hand (Tamworth). Piracy: 1, Mr. G. Hodgkinson (Gorton & Openshaw); 2, Mr. F. Underwood (Leamington); 3, Mrs. O. Fox (Rugby); 4, Mr. L. Bull (Atherstone). Swordtails: 1, Mr. L. Bull (Atherstone); 2, Mr. R. Scully (Coventry); 3, Mr. and Mrs. Delves (Atherstone); 4, Mr. K. Smiles (Swillington). Mollies: 1 and 2, Mr. G. Rothin (Wednesbury); 3, Mr. K. Smiles (Swillington); 4, Mr. and Mrs. Delves (Atherstone). Rabbits: 1, Mr. G. Stott (North Staffs); 2, Mr. T. Payne (Stone); 3, Mr. A. W. Spencer (Atherstone); 4, Mr. J. Brough (Stone). Danio minnows, rainbows: 1, Mr. A. Peak (North Staffs); 2, Mr. P. Reynolds (Swillington); 3, Mr. J. Brough (Stone); 4, Mr. W. J. Ash (Leek). Tooth-carp: 1, Mr. K. J. Harvey (Stone); 2, Mr. L. Douce (Atherstone); 3, Mr. T. Payne (Stone); 4, Mr. W. D. Parsons (B.K.A.). Fighters: 1, Mr. P. Reynolds (Swillington); 2, Mr. E. G. Leadley (Stone); 3 and 4, Mr. A. W. Spencer (Atherstone). A.o.v. anabantids: 1, Mr. F. E. Woodall (B.K.A.); 2, Mr. P. Hodgkinson (Gorton & Openshaw); 3, Mr. G. Rothin (Wednesbury); 4, Mr. and Mrs. Hay (Coventry). Barbs, under 3 in.: 1, Mr. L. McCourt (Gorton & Openshaw); 2, Mr. and Mrs. Hay (Coventry); 3, Mr. G. Hodgkinson (Gorton & Openshaw); 4, Mrs. O. Fox (Rugby). Barbs, over 3 in.: 1, Mr. A. Peak (North Staffs); 2, Mr. K. J. Harvey (Stone); 3 and 4, Mr. B. Taylor (Tipton). Cichlids, dwarf: 1, Mr. E. Leggett (Coventry); 2, Mr. J. Logan (Gorton & Openshaw); 3, Mr. P. Reynolds (Swillington); 4, Mr. D. Turner (Mansfield). Cichlids, large: 1, Mr. L. Hand (Tamworth); 2, Mr. H. Cope (Wednesbury); 3, Mr. K. J. Harvey (Stone); 4, Mr. F. Clowes (Leek). Characins, under 3 in.: 1 and 2, Mr. W. Knight (Stone); 3, Mr. D. Highfield (Wednesbury); 4, Mr. A. Peak (North Staffs). Characins, over 3 in.: 1, Mr. E. Price (Gorton & Openshaw); 2, Mr. T. Dobson (Leamington); 3, Mr. F. Underwood (Leamington); 4, Mr. G. Shesby (Coventry). Labeos and sharks: 1, Mr. L. Hand (Tamworth); 2, Mr. D. Highfield (Wednesbury); 3, Mr. L. Brough (Stone); 4, Mr. K. J. Harvey (Stone). Corydoras catfish: 1, Mrs. O. Fox (Rugby); 2, Mr. G. Shesby (Coventry); 3, Mr. E. Leggett (Coventry); 4, Mr. K. Smiles (Swillington). A.o.v. catfish: 1, Mr. J. Lee (North Staffs); 2, Mr. L. McCourt (Gorton & Openshaw); 3, Mr. T. Dobson (Leamington); 4, Mr. E. G. Leadley (Stone). Loaches: 1, Mr. G. Rothin (Wednesbury); 2 and 3, Mr. D. Highfield (Wednesbury); 4, Mrs. O. Fox (Rugby). A.o.v. tropical: 1, Mr. D. Highfield (Wednesbury); 2, Mrs. O. Fox (Rugby); 3, Mr. P. Reynolds (Swillington); 4, Mr. G. Hodgkinson (Gorton & Openshaw).

MR Ron Tench, secretary of WARRINGTON A.S., reports on some of the many activities of his club. In August, Mr Jim Kelly in his incomparable way held members of his audience enthralled for over two hours with talk and slides about his tour of America. 'Local enthusiasts know when they are on a winner and 49 turned up for an excellent evening's entertainment. Well done Jim!' writes Mr Tench. Round about this time displays were

put on for two local factories at their annual horticultural shows. The second display, for Thames Board, consisted of eight tanks and the society used this opportunity to hold its annual furnished aquaria competition. Representatives of the firm paid tributes to the display and, in addition to the presentation of society trophies, unexpectedly provided prizes supplied by the firm. Results were: 1, Mr P. Norris and Mr K. Daniels; 2, Mr and Mrs B. Worrall; 3, Mr and Mrs G. Hall. So many members were involved in the hard effort needed to put on these two displays to a high standard that the committee of the society has decided to award letters of commendation to all participants and

these will be presented at a club meeting.

A survey of attendance figures at meetings shows a continual increase up to an average of 38 per meeting this year. A large and dynamic committee helps to explain the continued increase in numbers. Anyone interested can always be put in the picture by contacting the secretary at 288 Manchester Road, Warrington; Telephone 31633.

**Huddersfield Tropical Fish Society** would like all club secretaries to note that they propose to hold their open shows on the second Sunday in March and the second Sunday in September each year.

## In Brief . . .

. . . At the ERITH & D. A.S. the following officers were elected: chairman, Mr R. Christou; vice-chairman, Mr A. J. Elliott; secretary, Mrs S. Roberts (55 Rowan Road, Bexleyheath, Kent); treasurer, Mr G. Lodge; committee, Mr A. Harding, Mr B. Coe, Mr R. Roberts, Mr Huckle. Meetings are held on the first and third Wednesday in each month at the Congregational Hall (near the Clock Tower), Bexleyheath, Kent. New members can be assured of a warm welcome and should contact the secretary for further details.

. . . MRS D. GUIBELL is secretary of the newly formed RAINWORTH & D. A.S. Enquiries should be addressed to her at 21 Third Avenue, Rainworth, Mansfield, Notts.

. . . ANOTHER newly formed group that has already had its first full meeting is the RUNNYMEDE A.S. Meetings are to be held on the second and fourth Tuesday in each month and further details can be obtained from the secretary, Mr P. Cairns, 1 Muncaster Road, Ashford, Middlesex.

. . . AT the A.G.M. of the HENDON & D. A.S., Mr Henry White was elected chairman; Mr Keith Purbrick (3 Holme Way, Stanmore, Middlesex) became secretary and Mr Joe Gorman remains show secretary.

. . . A NEW club has now been formed at Colchester—THE NEW COLCHESTER & D. A.S. Meetings are held on the first and third Wednesday of each month and those wishing to join should contact Mr K. Morris, 120 Collingwood Road, Colchester, Essex.

. . . CHANGE of secretary for KNUTSFORD & D. A.S. New secretary is Mr G. Young, 47 Overfields, Knutsford, Cheshire.

. . . PROSPECTIVE members and visitors are warmly welcomed to the meetings of the WESTON-SUPER-MARE TROPICAL FISH CLUB held on the fourth Monday of each month, 8.0 p.m., at the Victoria Bowling Club. The club's new committee is: chairman, Mr M. Locke; vice-chairman, Mr D. Plumley; treasurer, Mr D. Latty; secretary, Mr R. Bale (18 Litton, Dunster Crescent, Weston-super-Mare, Somerset); committee member, Mr D. Read; junior committee member, Mr R. Hayes; show secretary, Mr J. Staite.

. . . LYTHAM A.S. table show for labeos, killies and a.o.v. coldwater fishes attracted a good entry and Mr Keith Townsend swept the board in the killiefish section. Mr Townsend specialises in killiefish and showed first-class examples. Other results were: Labeos: 1, Mr Keith Willett; 2, Mr W. C. Mathews; 3, Mr P. Dent. A.o.v. coldwater: 1, Master Colin Langridge; 2, Mr Danny Kealey; 3, Miss Shirley J. Mathews. Best fish in the show: Mr K. Townsend.

## Change at Hendon Convention

THROUGH the foresight of HENDON A.S. members, what might have been a disastrous end to their 1966 Convention was turned instead into a most entertaining evening. To their great disappointment, a cable from the advertised speaker, Dr D. Backhaus, curator of the Exotarium in Frankfurt, explained that owing to the death of a close relative he would be unable to attend. After

extending condolences to Dr Backhaus, the officers had to complete in 2 days a programme that had been partly prepared for such an eventuality. The result won the hearty congratulations of all who saw it.

Some interesting comments have also reached us from another Hendon member, Mr John Morrice, on the trip to Ghent that he organised and that was joined by Hendon members Betty and Jack Robertshaw, Henry White, Pat O'Connor and Joe Gorman. While there, club members were taken on a conducted tour of the fish house of Messrs Carels and

Wanti. Purchases were made of angels, the breeding pairs being of a remarkable size and undamaged finnage with tanks of angels in varying stages of development; some excellent half-beaks and young albino tiger barbs were also purchased. One interesting fact was that Mr Carel's pride was a shoal of marigold platys that he had only recently acquired at considerable cost, and he was extremely disappointed to learn that one of the visitors had several hundred of these and that they were fairly common in this country!

## Blackpool's 'Tropical World'

A MERMAID took pride of place at the sixteenth Annual Open Show of the BLACKPOOL & FYLDE A.S. held at the Solarium, Harrogate, on the South Promenade. Introduced by the president, Mr Clifford Cross, the mermaid, Miss Julie Owen (Miss Blackpool), presented the trophies to the winners and resisted all offers to grace their home tanks. Receiving radio, T.V., press and the hobby magazine publicity, the show was an outstanding success with the number of entries received for a one-day show. A five-tier tubular steel structure running the 60 ft. length down the centre of the north wing gave a solid support at eye level for judging and viewing the 531 entries. This did not include the two stands of the Fancy Guppy Association, who had been invited to join the show and were well supported with a record turn out by their members. The setting of the show was further complemented by the display of birds, suspended in wicker cages from the glass roof, and the plants that were growing up the walls and girders. The whole effect made up a 'tropical world'.

Best fish in show, a dwarf gourami, won for owner Mr J. Smith (Blackpool) the Blackpool Tower Co. trophy. The Frock trophy, for the best fish shown by a member other than best fish trophy winner, went to Mr C. Jones. The Newton trophy for the member gaining most awards was won by Mr C. Jones. Lewis's (Russell) trophy for the club gaining most points was won by the home team.

**Furnished aquaria.** Members furnished tropical aquaria: 1, Mr J. Taylor (Councillor

Cross trophy, 78 pts); 2, Mr N. Hadley (72 pts); 3, Mr R. Lintier (70 pts). Open individual coldwater furnished aquaria: 1, Mr G. N. Hadley (Blackpool & Fylde A.S. silver challenge trophy, 75 pts); Blackpool & Fylde A.S.; 2, Mr B. R. Simmons (50 pts); Blackpool & Fylde A.S.). Open individual tropical furnished aquaria: 1, Mr J. Taylor (Blackpool Corporation silver challenge trophy, 78 pts); Blackpool & Fylde A.S.; 2, Mr P. Reynolds (74 pts; Swillington). The Fletcher trophy for the best aquaria by a member other than the trophy winner: Mr G. N. Hadley.

**Coldwater fish.** Jackson trophy: Mr A. Phillipson (East Lancs). Common goldfish: 1, Mr J. Brown (Mizenden, 70 pts); 2, Master J. Boardman (Leigh, 64 pts); 3, Mr S. Walsh (Blackburn, 55 pts). Shubunkins: 1, Mr B. Phillipson (East Lancs, 26 pts); 2, Mr B. Ogden (Ormskirk, 68 pts); 1, Mr S. Walsh (Blackburn, 65 pts). Fancy goldfish: 1 and 2, Mr A. Phillipson (East Lancs, 36 and 34 pts); 3, Mr S. Walsh (Blackburn, 30 pts). A.O.V. coldwater: 1, Mr B. R. Simmons (Blackpool, 74 pts); 2, Mr Hill (I.A.S., 74 pts); 3, Mr N. H. Newman (Dudley, 60 pts).

**Livebearers.** Blackpool & Fylde A.S. trophy: Mr G. Hodgkinson (Gorton). Swordtails: 1, Mr R. Wagstaff (Mansfield, 75 pts); 2, Mr F. Mulla (Mersey, 73 pts); 3, Mr J. Bennett (Huddersfield, 72 pts). Platys: 1, Mr G. Hodgkinson (Gorton, 77 pts); 2, Mr A. Moss (Accrington, 73 pts); 3, Miss L. Shore (Oram, 71 pts). Molies: 1, Mr H. Hughes (T.A.B., 76 pts); 2, Mr R. Wagstaff (Mansfield, 74 pts); 3, Mr Butterworth (Valley, 72 pts). Guppies: 1, Mr H. Hughes (T.A.B., 76 pts); 2, Mrs R. Wolstenroft (Heywood, 74 pts); 3, Mr R. Wolstenroft (Heywood, 72 pts). A.O.V. livebearers: 1 and 2, Mr P. Reynolds (Swillington, 75 and 73 pts); 3, Mr J. Logan (Gorton, 70 pts).

**Characins.** Robinson trophy: Miss A. Wilkinson (Halifax). Size up to bleeding heart: 1, Mr E. McKay (Oram, 76 pts); 2, Mr R. Brothwood (Leigh, 74 pts); 3, Mr E. McKay (Oram, 72 pts). A.O.V. characins: 1, Miss A. Wilkinson (Halifax, 83 pts); 2, Mr R. Moorcroft (Mersey, 80 pts); 3, Mr J. Robinson (Mersey, 78 pts).

**Labyrinth.** Blackpool & Fylde A.S. trophy: 1, Mr J. Smith (Blackpool, 87 pts); 2, Mr C. Jones (Blackpool, 86 pts); 3, Mr R. Hill (Heywood, 78 pts).

**Fishers.** Hadley trophy: 1, Mr P. Reynolds (Swillington, 74 pts); 2, Mr T. Davies (Heywood, 74 pts); 3, Master D. Taylor (Blackpool, 69 pts).

**Minnows and barbs.** Partington trophy: Mr K. Parkes (Mersey). Minnows: 1, Mr E. McKay (Oram, 76 pts); 2, Mr J. Boardman (Leigh, 73 pts); 3, Mr D. Thomalla (Airedale, 70 pts). Labors and sharks: 1 and 2, Mr F. Gregory (Oram, 58 and 57 pts); 3, Mr J. Loughbottom (Mizenden, 54 pts). Barbs up to 2 1/2 in.: 1, Mr K. Wilberham (Oram, 73 pts); 2, Mr C. Jones (Blackpool, 70 pts); 3, Mr W. Parkes (T.A.B., 68 pts). A.O.V. barbs: 1, Mr K. Parkes (Mersey, 80 pts); 2, Mr R. Whalley (Leigh, 80 pts); 3, Mr R. Wilkinson (Halifax, 78 pts).

**Killifishes.** Childs trophy: 1 and 2, Mr W. Emmott (Swillington, 75 and 72 pts); 3, Mr L. Marshall (Oldham, 74 pts).

**Cichlids.** Eborington trophy: Mr D. Turner (Mansfield). Dwarf: 1, Mr D. Turner; 2, Mr C. Jones. Angles: 1, Miss Smith (Gorton, 74 pts); 2, Mr F. Karpinski (Blackpool, 73 pts); 3, Mr E. Jackson (Belle Vue, 70 pts). A.O.V. cichlids: 1, Mr F. Mulla (Mersey, 75 pts); 2, Miss B. Johnson (Stockport, 73 pts); 3, Mr E. Jackson (Belle Vue, 70 pts).

**Catfish and loaches.** Catfish special prize: 1, Mr G. Hodgkinson (Gorton, 70 pts); 2, Mr K. Wilberham (Oram, 77 pts); 3, Mr J. Vickery (Dudley, 72 pts). Loaches special prize: 1, Mr J. Vickery (Dudley, 76 pts); 2, Mr W. Taylor (Oram, 75 pts); 3, Mr K. Parkes (Mersey, 74 pts).

**A.O.V. tropical and marine.** Lyndene trophy: Mr L. McCourt (Gorton, 84 pts). A.O.V. tropicals: 1, Mr L. McCourt (Gorton, 84 pts); 2, Mr G. Howard (Blackpool, 84 pts); 3, Mr P. Reynolds (Swillington, 83 pts). A.O.V. marine: No entries.

**Pairs.** Pairs trophy: Mr E. Price (Gorton). Livebearers: 1, Mr A. Moss (Accrington, 78 pts); 2, Mr J. Roberts (Barnley, 75 pts); 3, Mr E. Allan (Gorton, 73 pts). Egg-layers: 1 and 2, Mr E. Price (Gorton, 80 and 79 pts); 3, Mr D. Thomalla (Airedale, 77 pts).

**Breeders.** Fylde Cinema Rose Bowl: Mr J. Smith (Blackpool). Coldwater: 1, Mr P. Karpinski (Blackpool, 66 pts). Livebearers: 1, Mr H. Page (Oram, 76 pts); 2, Mr C. Jones (Blackpool, 70 pts). Egg-layers: 1, Mr J. Smith (Blackpool, 87 pts); 2, Mr S. Earnshaw (Chapelcoats, 85 pts); 3, Mr K. Wilberham (Oram, 82 pts).

**Schools and schoolchildren's classes.** School's furnished aquaria tropical or cold: Silver challenge trophy: 1, Tyndley (Blackpool, 74 pts); 2, Hutton Grammar School (Preston, 71 pts); 3, St. George's (Blackpool, 66 pts). Schoolchildren's individual furnished aquaria: Challenge shield: 1, Master K. Guise (Blackpool, 75 pts); 2, Master D. Taylor (Blackpool, 69 pts); 3, Master G. Simmons (Blackpool, 60 pts).

... **THURROCK A.C.** elected Mr S. Hendle their secretary for the coming year. Prospective new members should contact him at 47 Fulbrook Lane, South Ockendon, Essex.

... **BRISTOL TROPICAL FISH CLUB** has recently elected the following officers: chairman, Mr B. Clarke; vice-chairman, Mr M. Taylor; secretary, Mr W. Holland (416 Whitehall Road, St. George, Bristol, 5); treasurer, Mr L. Littleton; assistant secretary, Mr E. Davies; reports secretary, Mr P. Wright; programme officer, Mr G. Stone; auditors, Mr E. Newman, Mr G. Furber; librarian, Mrs P. Wright. Meetings are held on the third Tuesday of every month, 7.30 p.m., at the Ship Inn, Redcliffe Hill, Bristol 3, and new members will be made most welcome.

... **WORTHING TROPICAL FISH CLUB** is to change its meeting place to the Royal George Inn, Market Street, Worthing, where it is hoped the surroundings will create a more informal atmosphere. At its recent A.G.M. the following officers were elected: chairman, Mr A. Riley; secretary, Mr P. C. Waring (1 Kings Court, Aglais Road, Worthing); treasurer, Miss M. Scott; committee, Mr W. English, Mr E. Cox, Mr R. Isles, Mr D. Deacon, Miss I. Orpwood. Meetings will still be held on the third Thursday of each month.

### Dates for Your Diary

25th February. **HOUNSLOW A.S.** Convention. 8.00 p.m. at Marlborough School, London Road, Isleworth. Mr Jim Kelly will be speaking on Fish-keeping in the U.S.A. Everybody welcome. Admission 2s 6d.

4th March. **TOTTENHAM & D. A.S.** Annual Open Show (postponed from October 1966). Territorial Army H.Q., Priory Road, Hornsey, London, N.8. Details from Mr H. Barnes, 71 Mattison Road, Harringey, London, N.4.

4th March. **FEDERATION OF BRITISH AQUATIC SOCIETIES** Assembly.

5th March. **FEDERATION OF SCOTTISH AQUARISTS SOCIETIES** March Convention. Templehall Secondary School, Kirkcaldy, when **KIRKCALDY A.S.** will be the host society.

12th March. **HUDDERSFIELD TROPICAL FISH SOCIETY** Fourth Open Show.

30th April. **ASSOCIATION OF YORKSHIRE AQUARIST SOCIETIES** Open Show (please note change of date from that reported in PFM, January issue). The Railway Institute, Anlaby Road, Hull. Benching 1-2.15 p.m. Judging 2.30 p.m.

27th May. **READING & D. A.S.** are staging the 1967 **THREE COUNTIES AQUARIST SHOW** at The S.G.B. Social Club, Gas Lane, Reading. Benching from noon, Friday 26th May. Show schedules from Mr C. Masters, 16 Morcombe Avenue, Caversham, Reading, Berks.

3rd June. **FEDERATION OF BRITISH AQUATIC SOCIETIES** Assembly.

3rd and 4th June. International Tropical Fish Exhibition organised by the **FANCY GUPPY ASSOCIATION**, Manchester.

13th June. **LYTHAM A.S.** first Open Show at the Lowther Pavilion, Lytham.

22nd, 23rd and 24th June. **BRISTOL T.F.C.** Open Show. Club secretaries are asked to forward addresses to Mr W. Holland at 416 Whitehall Road, St. George, Bristol 5 so that full show schedules can be circulated to all.

2nd September. **FEDERATION OF BRITISH AQUATIC SOCIETIES** Assembly.

10th September. **HUDDERSFIELD TROPICAL FISH SOCIETY** Fifth Open Show.

15th October. **STONE A.S.** Open Show (provisional).

2nd December. **FEDERATION OF BRITISH AQUATIC SOCIETIES** Assembly.

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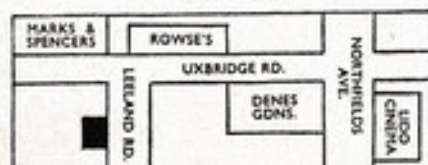
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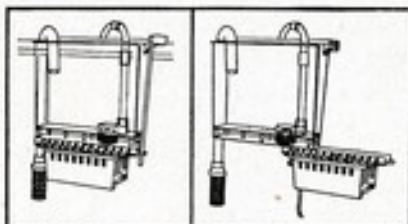
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