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# PetFish

Monthly 3s

Vol. 4 No. 9

January 1970

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Editor: Anthony Evans

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## Comments and Quotes

- Genius in the fish world ● Twenty-one-year olds in the hobby ● Why do they do it? ● Aqua-scaping north and south

### Super-Intelligent Fish

ONCE again fish are in the news as the medium used in research that may ultimately have far-reaching effects on man. Work by David E. Brasler of the University of California, Los Angeles, and of M. E. Bitterman of the Bryn Mawr College, Pennsylvania, has produced super-intelligent fish as a result of brain tissue experiments. The work was designed to resolve the problem of whether the size of a brain affects the degree of intelligence exhibited by the owner, so it was necessary to add more nerve cells to a 'standard size' brain to see.

Researchers removed from one group of *Tilapia macrocephala* fry, just after they had left the egg, the optic tectum (the part that corresponds to the cerebral cortex in man where the thinking processes take place), which they then grafted into the corresponding area in the brain of a second group of fry. Ten of the 'receiving' fish matured and efforts were made to teach them to choose between alternatives where rewards were given for the correct choice. Usually fish, unlike rats, cannot be taught to become selective in this type of experiment, but four of the 'receiving' fish did grasp the rules; of these four, two improved continually, two learnt quite well and then progress stopped.

A post-mortem examination of the fish showed that only in the four 'clever' fish had the brain graft taken, and of these, in the two exceptional fish the optic tectum had become much larger and in one brain an entirely new tectal structure seemed to have developed. The two

fish who had not done so well had a much smaller increase in brain tissue.

So the fish had acquired some of the learning ability normally shown by the rat after this brain transplant; correspondingly, rats are known to lose this ability to learn if part of their brain is removed. Keen fish owners, particularly those with pet cichlids such as oscars, might resent the wording in the SUNDAY TIMES report of this research that 'rats become as stupid as fish if part of their brain is removed', but the prospect of a tankful of super-intelligent fish might seem to some a rather daunting prospect. It is one thing to stare with intelligence at an underwater scene and quite another to have the inhabitants staring intelligently out!

### Senior Societies

THE close of 1969 marked the achievement of seniority by a number of aquarists' societies. Cambridge, Hendon and Surrey are three who have completed 21 years of active existence, and PETFISH MONTHLY offers members and officers of these groups congratulations and best wishes for their continued expansion and success. The period in which these 21-year-olds had their birth was one of postwar boom expansion for the hobby, a phase that turned out subsequently to be a period of unhealthily rapid development, after which many new clubs and aquatic businesses folded up. That so many societies did survive the upheavals of the time tells a lot about the spirit within the groups that kept them going.

Congratulations are also due to a real oldster in the hobby—Bristol A.S., who had their fortieth birthday in 1969. Quite major changes in the hobby have occurred in the period spanning the Bristol Society's existence, of course, but although one of these changes is the forward march taken by tropical fishkeeping the coldwater sphere of the hobby is one with which the name of Bristol A.S. is still very much linked.

This seems to suggest, and there is evidence from at least one other senior society to support this, that the influence of the interests of original and long-standing members on the development of a group is a very strong and important one. So, for new societies in 1970, the message should be—start off in the way you would like your venture to continue and there will be editorial congratulations for you too in PFM in 1991!

## Why Do They Do It?

MONTH in, month out, year in, year out—the cries are the same. These quotes are from editorials in three aquarium club bulletins that we received within a few days of each other:

'I have been criticised . . . but my critics have never written a single line for the journal—if my holding the editorial chair is not to my critics' liking may I suggest that they nominate someone else for the post, pre-

ferably themselves, I'll be only too pleased to stand down!'

'Surely you cannot expect an editor to write reports of meetings, pass on every bit of news from the Committee, edit, plan, check, duplicate and despatch the newsletter and then sit down and write a thesis about breeding tetras, for example.'

'It is quite a while since I made a desperate plea for copy for the — but surely with some 150 members someone can help with an article or a letter to the editor once in a while? One or two members have written for us and I am most grateful but I find it hard work to fill the pages month after month and a small stockpile of articles from members would help no end—so get those pens out and start writing!'

Why do they do it, we ask ourselves? Surely the answer can only be that they love the work—certain it is that the oft-repeated threats and offers to hand over the job are made in the full knowledge that there's no queue of aspirants to take their place!

## Aqua-scaping North and South

STRANGE the way in which geography can be associated with trends in people's activities, even in relatively new developments, so that we can in Britain speak for example of what goes on 'in the north' as contrasted with 'in the south'. Differences in fishkeeping between north and

south, particularly on the show scene, can only mean that there is insufficient exchange and cross-fertilisation of ideas between aquarists north and south. In such a small land mass this is a pity.

These thoughts arose from an interesting talk we had with Mr J. M. Skinner, the Federation of Northern Aquarium Societies judge who officiated at THE AQUARIUM SHOW in London. Mr Skinner has noticed a very marked difference in techniques of furnishing aquaria used by societies north and south. In general he finds that in the north heavily banked gravel, large rock or wood masses and dense planting are favoured to an extent that make furnished tanks in the south at first appear quite bare.

In fact, he was of the opinion that the creation of extra swimming space for the fishes in the more open approach of the southern aquascapers is a good thing, and that their northern counterparts are tending to overdo the furnishing somewhat. Obviously it's the overall pleasing effect that is being aimed at in aquascaping so there can be no precisely laid-down rule about too much and too little. Anyone care to formulate some practical guide lines on this?

On the further aspect of aquascaping on the grand scale, we like the vigorous approach of Mr P. Ogston, whose letter on the subject appears in this issue. How about a society for '70 gallons plus' men? We are not aware of differences between north and south from this viewpoint, anyway.

## Readers' Queries Answered



### Are White Worms Safe?

It has recently been brought to our notice by a member of the nursing profession seeing the eggs of a culture of white worms (*Enchytraeus albidus*) that these eggs are lethal if they enter the stomach of a human being, where they hatch and then proceed to eat their

way out. Can you confirm or deny this, as it is causing some worry amongst a number of aquarists in this district?

We know of no evidence to suggest that in any way the *Enchytraeus* worms can be parasitic to man, nor are there any reasonable grounds to

suspect such an event. The group to which the worms belong is a large one and does not include worms of parasitic habit. The worms are extremely common in wet areas of soil in Britain and if there were any possibility of parasitism occurring it would be of high incidence in the population at large, let alone among aquarists; the latter section has, of course, used *Enchytraeus* as fish food without troubles for 40 or 50 years. Your informant should be challenged to produce evidence for the statements made: it is likely that a medical report of another quite different species of parasitic worm in a quite different geographical situation has been the source of this inaccurate story.

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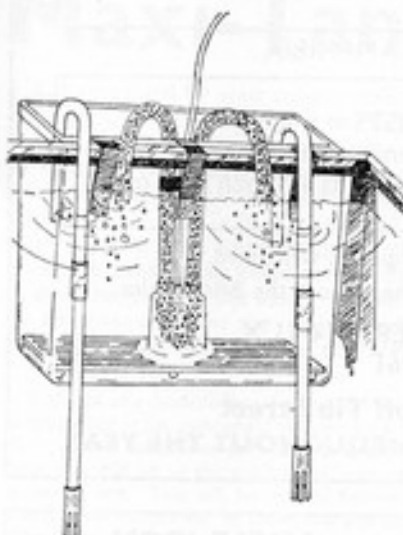
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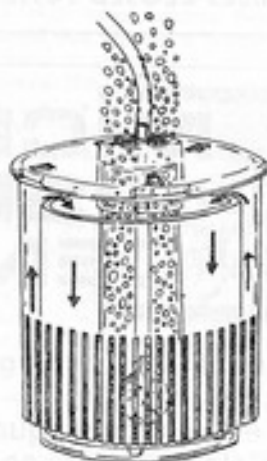
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### The Aquarium Show '69

**T**HANK you for a good Show. Everyone concerned with the Show appeared to me to be doing his or her best to make it a success. Keep up the good work. It is only with the backing of the clubs that the Show can go from good to better each year.

R. FORDER  
Uxbridge & D. A.S.

**I** PERSONALLY would like to thank you for the Show in general. This is the only London-based National Show and I feel that southern clubs should give as much support as possible to make it a success.

Hemel Hempstead, Herts.

A. C. TUFFS

*The total number of aquarium societies affiliated to the F.B.A.S. is over 100. At The AQUARIUM SHOWS '68 and '69, apart from specialist groups a total of 24 societies participated over the two years and 10 of these entered both in 1968 and in 1969. A meeting has been called by the F.B.A.S. at Conway Hall, Red Lion Square, Holborn, London W.C.1, at 2.30 p.m. on Saturday 17th January for delegates from societies to discuss the competitive sections of The AQUARIUM SHOW 1970 (29th October-1st November).*

### Chilled Guppies

**O**N the subject of procedure when a thermostat fails (Guppy World, PFM, September) I personally would bring the temperature back up gradually. However, as the fish are the first consideration, I would first of all fill a few jars with water from the stricken tank and place the fish in them. I would then float the jars in another tank (of normal temperature) until I had replaced the faulty 'stat, and got the tank back to normal temperature. I would not have a light burning over the tank which contained the floating jars, so as not to distress the fish further.

I would bring the temperature back to normal slowly because of the plants, as I believe that they, too, are susceptible to big temperature changes and may suffer if the change is too fast.

Bradford 7, Yorks.

J. P. CHORLEY

### British Clubs are Envied

**W**E think your magazine is the greatest! The quality of your articles and pictures, along with the choice and variety, is really impressive. The sections on Club News and reports are read completely. We are envious of the number of films and slides which are available for club programmes. We don't seem to have that many over here. Here's wishing you the best on your magazine.

MR AND MRS RICHARD HEINRICH  
Milwaukee, U.S.A. Cistana Aquarium Club

### Spares Available

**I**N the Letters column of the December issue of PFM Mrs M. J. Watkin from Newcastle, Staffs., wrote that the net on a brine shrimp hatcher she had purchased had perished and her inquiries had revealed that spares were unobtainable. Since then PFM has contacted Mr Joe

Grassby, Glen Fisheries, Moberley, Cheshire, who tells us that replacements are available from him (price, including postage, 1s).

### Long-lived Goldfish

**I** HAVE made enquiries from the Coventry Aquarist (Mr E. J. Small) concerning the anticipated life span of a goldfish which has been kept in a small oblong goldfish tank for the whole of its life.

I have a goldfish which is at least 24 years old and has been fed entirely upon your dried daphnia and kept in an indoor tank as above. Mr Small has never heard of such a long-lived specimen in such a small tank. I thought that this might be of interest to you.

Coventry

MRS M. TUDOR

*The above is a letter received by Armitage Brothers Ltd and is published in view of its interest.*

### Wooden (Sea) Horse

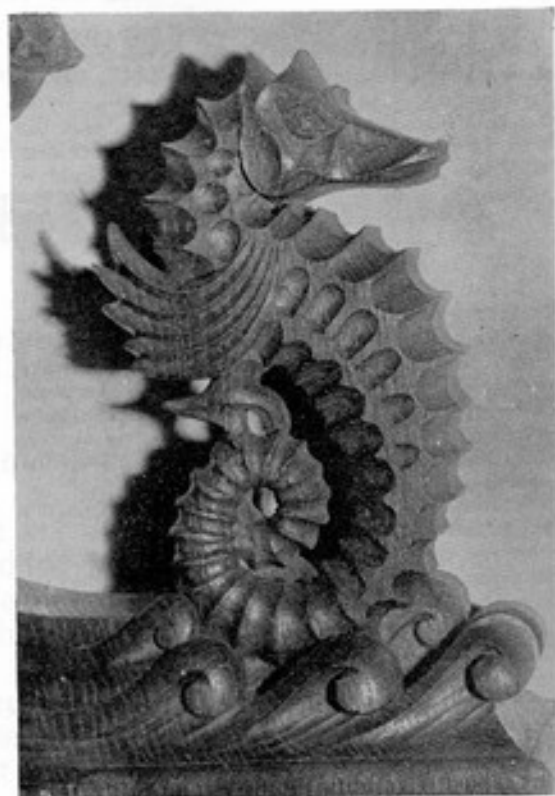


Photo: R. D. BARRETT-LENNARD

This fine carving of a sea horse decorates a pew end in a fourteenth century church at Danbury, Essex. Even the rolling waters have been represented by the woodcarver

# You Can Have Plants in with this Cichlid

The Flag Cichlid (*Aequidens curviceps*)



This male flag cichlid (one of the breeding pair of fish used to make the photographs with this article) is just over 2 in. long (5.5 cm.)

By RUDOLPH ZUKAL

Photographs by the author

Translation by F. MARSH

GERMAN aquarists call this fish *Tüpfelbuntbarsch*, which translated literally means 'brightly spotted perch', and it is indeed one of the most beautiful of the cichlids, imported into Europe from the central Amazon and its tributaries for the first time in 1909 and then again in 1955. It is one of the smaller species of the cichlid genus *Aequidens* and many fanciers of dwarf cichlids were really delighted when the flag cichlid again came into the possession of aquarists after the last war. The male in the picture is just over 2 in. in size. They do become somewhat larger, up to just under 3 in., but no bigger, and although many authors give a maximum growth size that is larger than 3 in., I am certain they are wrong about this.

In the Amazon basin the flag cichlid lives in the narrower streams, where the water is still or slowly flowing. For the fish to show its true colouring, the tank requires a good light; during breeding the fish, particularly the larger males, are beautifully coloured. The colouring often varies so that sometimes the fish might seem to be an entirely different species!

Despite the synonym 'acara' for this species, which may alarm the aquarist a little, one is in fact dealing with a very quiet, peace-loving fish that is perfectly suitable for a community tank. It does not burrow in the bottom of the tank nor does it spoil the plants. Indeed, it is a rather shy fish, and if there are hiding places in the aquarium

Settling close to the stone's cleaned surface, the female lays her eggs while the male stands by to fertilise them as soon as she moves away



lost their fear and did not allow themselves to be disturbed.

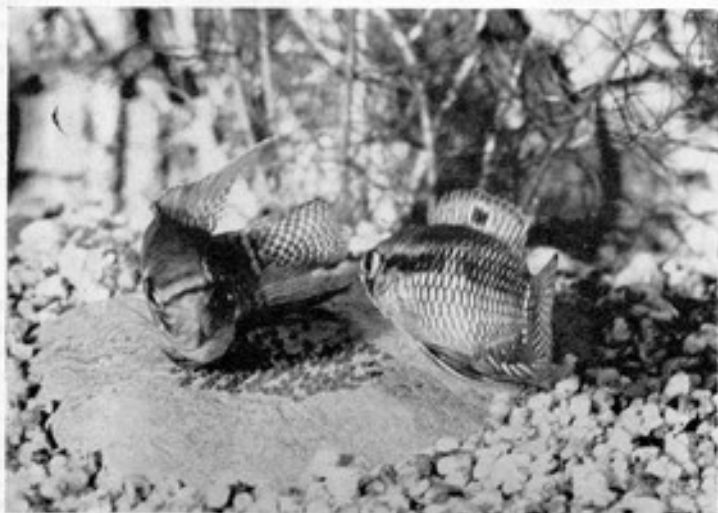
As the male continued to remain aloof, he was butted by the female. This behaviour seemed somewhat unusual to me because up till then the activity in the *Aequidens* species that I had observed had been on the part of the male. With this pair it was completely reversed, and the male followed only hesitatingly as the female swam from one stone to the other to find a suitable place to spawn. When she had chosen the stone, the male still appearing anxious and shy, she cleaned the stone carefully with her jaws and removed every grain of sand, while the male took no part in the cleaning process.

When the stone was finally cleaned to the

female's liking, the fish began to swim around each other. The female then tried a first spawning movement and finally settled on the stone and laid her eggs. These were immediately fertilised by the male. Again the fish rotated around each other and changed positions so that the female could lay more eggs, while the male waited to one side until the female had swum away and left the way clear for him to begin fertilising the eggs again.

After about 60 hours the fry emerged from the eggs. They were free-swimming after 6-7 days and at once accepted *Cyclops* nauplii.

One word of warning—the parents do not always watch over and tend the brood as they are reputed to do.



The male is now fertilising the eggs as he swims closely over them. Several lots of eggs were laid, female and male reversing positions after each oviposition



# GUPPY

## World

**W**INTER is still the best time of the year to start the production of some good guppies. Not only do the darker nights seem to give us more time for our fishkeeping but the water in our taps is more stable. In the spring and summer, rains cause excess of minerals to be flushed into the reservoirs, and in periods of drought excessive silting can also play havoc with the supply.

But even in winter one must still take care. Many breeders write to me complaining that though they have been regularly topping up their aquaria with water straight from the tap, suddenly this same supply has proved toxic to their guppies. Why?

The answer to that was learned in the bitter school of personal experience. If you care to investigate you will usually find that the local water authority have been tinkering with the supply and, to protect our health, have heavily dosed the local mains with chemical.

Moral is to keep a wary eye open for any roadworks in the vicinity of your home, especially any that involve the opening of the water supply. If you do spot any, or if the wife tells you that the water has been 'turned off' that day, do not use any water straight from the tap for your fish. Let it lie fallow for a couple of days first.

Don't blame your local water board! They rightly consider our health a first priority, and not that of any tropical fish in the neighbourhood!

• • •

Visitors to The AQUARIUM SHOW in London the month before last had the chance of viewing some of today's guppies and chat with their owners on the F.G.A. stand, aptly called 'The Greatest Show On

Earth'. Such was the enthusiasm of these specialists that they enrolled no less than 29 new members from the visitors, many of whom were immediately fixed up with 'starter' stock.

All societies, whether specialist or not, can benefit in this way from participation in the Show—what a wonderful opportunity it provides for a club to show the man in the street what it has to offer.

Taking part as a club also gives those members normally not engaged in the all-year round job of running

### By PETER UNWIN

the society a chance to do something for the club, and enrolment of new members is surely the answer to any suggestion of a falling off in membership?

• • •

Speedy publication is of the essence when any fish standards are created. However, with the Fancy Guppy Association handbook, featuring the recently adopted new outlines, it seems that speediness has had to play second fiddle to the thoroughness displayed by the enthusiasts responsible for the booklet.

Sam Croft, chairman of the Birmingham Section of the F.G.A. and also chairman of the F.G.A. Handbooks Committee, told me: 'We refuse to be hurried into producing a booklet that could suffer as a consequence. When these standards are published we want them to be as good and as accurate as we can make them.' Expected publication date is 1st March I'm told.

Guppy World has often recommended the use of ox heart as a good food for guppies and many of our readers who have taken this advice have agreed. Now scientific evidence has been provided by a series of extensive tests carried out on guppies by Dr Larr, Dr Johns and Dr Robins in California. These scientists showed that when heart was fed to the fish on alternate days their life span was increased by up to 50%.

Over a period of 120 days, other experiments with different diets also gave some interesting figures about the size of the broods produced and the ratio in each of males and females. Here are just a few of the figures:

Diet	Fry in brood		
	Number	Males	Females
Earth-worm	178	87	91
Ox heart	143	64	79
Brine shrimp (frozen)	76	37	39
Bread	6	5	1

For those readers who previously missed our instructions for preparing the heart, here they are once more. Obtain a small ox heart from your butcher and cut it into pieces, removing as much of the arteries and hard tissue as you can. If you have a food mixer then thoroughly mix the remainder of the heart until it has the texture of thick porridge. Pour it out on to a cold, flat surface and make up into small patties. Place these in plastic bags and freeze them. If you do not own a mixer or blender then get your butcher to run the heart through his mincer after you have removed the arteries etc.

Feeding the heart to guppies may make their excrement appear white but this is nothing to be concerned about. Regular siphoning will ensure that the water stays clean.

• • •

Isn't it surprising just how much enjoyment people can derive from other folk's mishaps? That is probably why, having had so many in my

Continued on page 394

THE AQUARIUM CATFISHES—14

(Family Ageneiosidae)

# One for the Specialist



This catfish (*Ageneiosus marmoratus*) from Guyana seems permanently to show a 'smile' of self-satisfaction. As far as smaller fishes are concerned it is the smile on the face of the tiger, however

Photo: BRAZ WALKER

THE South American continent exposes its siluriform or catfish families to all sorts of conditions, and they in turn have developed suitable equipment to survive in a highly competitive race for existence. Competition involves their own relatives as well as completely dissimilar and unrelated fishes, and some species or even families seem to have resorted to a combination of forms.

The family Ageneiosidae appear almost to have employed a composite, incorporating the cavernous gape of some of the flat-headed pimelodid catfishes, such as *Sorubim lima*, the shovel-nosed catfish, with the sedentary, low blood-pressure style of such auchenipterids as *Trachycorystes*, the driftwood catfishes. Despite their almost total reluctance toward any sort of daylight activity, the ageneiosids nevertheless give a unique and interesting glimpse at a strange way of predatory life.

They are also highly prized fishes for the collector whose aquaristic longevity has opened his eyes to the rewards of observing fishes that are only occasionally observable. There is little mystery about guppies and their actions, and their flamboyance has much appeal to many aquarists. To witness, however, the skilfully covert beast in his living routine even in the aquarium can put a couple of extra thumps in the heartbeat, which ordinary fishes cannot do.

Such a fish is *Ageneiosus marmoratus*. This fish has a permanent 'smile' attached to its monstrous lips, and the expression on its 'face' seems almost to indicate some self-satisfying piece of knowledge of which it is the sole possessor. From above, the breadth and roundness of the snout can be seen, and the head of the creature is so flattened that it almost appears to have been stepped upon.

---

By BRAZ WALKER

---

The mouth completely traverses the fish's head and a single, tiny maxillary barbel at each corner is the only indication of the tenuous equipment usually sported by catfishes.

The marbled appearance of the fish is referred to in the name *marmoratus*, and the colour is greyish brown beneath the darker marblings. Throat and belly are white, and as with most fishes the upper body surface is darker. Paired fins and dorsal are strongly spined and the over-size eyes seem to be constantly staring.

In light, although *Ageneiosus* may be in plain sight resting beside a rock or under a stump, only extreme disturbance will arouse action. With darkness or late twilight, however, a transformation takes place and the strange hunt begins.

Ageneiosids are poor swimmers in comparison with some of their swift, predatory cousins, and among the reasons for this is a rudimentary, apparently degenerate swim bladder, which is partially encapsulated in bone. The lateral processes of the modified vertebrae (which for the Weberian apparatus extend on each side, forming the bony encapsulation) almost entirely surround the bladder.

This is true of all ageneiosids, and while *Ageneiosus marmoratus* has an obliquely truncate caudal or tail fin, meaning that it appears as it would if it had originally been rounded and had been cut off at an angle, most others

have forked caudal fins. Although forked tails are more conducive to rapid, sustained swimming, none of the family members is likely to win any speed trials.

In every successful member of the animal kingdom, Nature provides compensation for every handicap. With *Ageneiosus* the compensation for any lack of speed and agility lies in the form of a proportionately tremendous mouth, stretching not only from side to side of the broad head but around the corners as well, almost to the eyes, which are positioned at lateral extremes on the head. Any fish or other food item unlucky enough to be engulfed is held by retrorse or backwards-projecting teeth that ensure a one-way trip for the victim.

The hunt takes place in darkness or late twilight, and consists of rather slow and deliberate movements through the open water for a start. If no success is had, the fish will often take a head-upward position in a corner of the aquarium, against a stump or upward projecting rock. Any movement of a fish above this position will cause the catfish to strike, and if the aim is true and the victim fits, the hunt may be over, depending on the size of the swallowed fish.

Because of the over-ballasted nature of *Ageneiosus*,

even after assuming the corner position in wait for prey, the caudal fin must necessarily keep moving for the fish to maintain its selected altitude from the bottom. It is somewhat reminiscent of human swimmers 'treading water', and if the fish is to be fed other than a supply of bite-sized fishes this is an excellent time for feeding. Large earthworms, chunks or strips of meat or other sizeable food items dropped so that they fall within his range will be taken, and since at ordinary feeding times other fishes will take all the food, this is fortunate.

In spite of the ability of *Ageneiosus* to swallow fishes perhaps half his own size, the lack of showmanship displayed by the creature and the somewhat more than normal amount of feeding trouble that may be required, for those whose interest in fishes is particularly stimulated by the unusual an unoccupied niche can be filled by such a wide-eyed and wide-mouthed individual. The creature's size is not excessive, and fishes too large to swallow are not molested. Temperature and water are rather widely tolerated, although space, aeration and cover are desirable.

Admittedly this is not a fish for everyone. Neither is the guppy or the goldfish!

## GUPPY WORLD

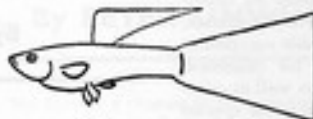
Continued from page 392

fishkeeping career, I seem to have given immense pleasure to many of my acquaintances (I nearly wrote 'my friends'). I have brightened up their lives again, let the sunshine into shady places and given them a talking point that should be worth a pint at least at the next guppy meeting.

What did I do to deserve their interest? Evoke the Devil? Fall off a ladder? Or just slip on that old micro culture I had meant to throw out? Sorry, nothing as amusing as that. My mistake was voicing my opinion and showing that even with my expertise I could claim that the fantail, *Fächer*, dovetail or what you will was not a genetical misfit, the odd fish in a brood, but a genuine strain that could be developed to take its place amongst the honoured.

But then, the ace I kept tucked up my sleeve was the fact that this opinion was not only mine but also

that of a well-known European geneticist I had the pleasure of meeting in London recently, who told me of his breeding experiments with this variety.



Dovetail guppy male

Does the ultimate size of the female guppy suffer if she is bred to a male when she is still a young fish? Experience seems to answer 'yes' and recommends that any female you plan to show at a later date should be kept away from the opposite sex for at least 3 months.

Those who would like to pursue the subject further can do no better than to read up some of the findings made with the guppies by our friend Dr Alex Comfort at University College London.

Fan heaters are being used more and more by guppy breeders to heat their fish rooms and are replacing the costly aquarium heaters and thermostats. Many brands of these hot-air blowers are on the market, but

readers of Guppy World might be interested in what the Consumers' Association had to recommend in their publication *WHICH?* recently.

Best buys were the Phillips Mini-Turbo HD 3206 and the Rima 405. The firm of John Lewis have just told the Association that their Jonelle, 2½ kW fan heater (it came on to the market after the *WHICH?* tests), is identical with the Rima 405 except that it has no thermostat. Its low price of about £6 15s makes it an attractive offer.

For those who still prefer to burn paraffin the report had this to say about oil heaters: the brand that gave the most output at the cheapest price was the Harper Beatrice 4012—but make sure you obtain one with a self-snuffing burner. If you don't like the rounded shape of this model, you could choose between the Harper Beatrice 800, the Rippingilles Sun-vector S, Aladdinette or the Valor Valiant de Luxe.

Please don't forget there are two grades of paraffin—premium and regular. The types of burners mentioned should use only the premium grade.

**Glazing a tank?** Sizes of glass, weights of glass, amounts of putty—all these are given at a glance in *FFM Aquarist's Diary 1970* as well as tank and pond capacities and ever so much more basic information (7s post free from *FFM* Office).

the loch to examine the identical spot where the initial finds had been made and were rewarded by uncovering two specimens of *Lepadogaster candollei* and a single *Diplecogaster bimaculatus* (the Connemara and two-spotted suckers), which at least showed that the 1967 records were not isolated phenomena.

On the seventh day we covered as much of the Camas Torsa site as was possible and, just before the tide turned, the first Connemara sucker was recorded. And another, and more . . . the two species named above were present in force.

The next day as we followed the tide down the beach we knew exactly where to seek them and were able to establish that far from being isolated finds these little fishes were the most abundant vertebrate of the extreme lower shore zone, outnumbering even the buttergunnel, which was dominant in the middle shore zone. Even more exciting was

the fact that there were many proofs that both species were breeding there, with numerous examples showing how determinedly the fishes guarded their egg clusters, being willing to risk certain capture rather than leave the eggs untended.

The blue-green, metallicly shining eggs were deposited in layers over the under surfaces of flat rocks, between closely placed boulders or between the vertical faces of boulders and the bedrock. Often one could not but wonder at the ingenuity of the clingfishes in inserting their eggs into such narrow cracks. Some clusters were well supplied with standing seawater or surface run-off, others were exposed to the atmosphere, though in cold, damp and very dark situations. Those fishes exposed as rocks were moved disregarded the light and danger.

One cluster of eggs was taken back to the camp, where a small tank had

been set up. Placed in seawater, the eggs hatched out in an hour or so as the temperature rose and dozens of tiny fry filled the tank, swimming around or becoming attached to the glass and sand. A number of the fry were retained and preserved as specimens, the remainder were returned to the sea.

Having firmly established that a breeding population is present in Loch Sunart, we paid a hurried visit to a beach on the north coast of the peninsula, where a search was made during the course of a single low tide: pipe-fish species, three- and fifteen-spined sticklebacks, eels, sea scorpions, two species of flatfish and three species of goby; no clingfishes!

We still hope to establish whether the species can be found further north and also whether they remain in the lower shore zone for a while after the conclusion of the breeding season.

## In Brief . . .

. . . A NEW Society in Sussex is the **BEXHILL A.S.** At its first meeting 20 prospective members elected: Mr P. Martin as chairman; Mr D. Spencer, vice-chairman; Mrs J. Shead, treasurer; Mr D. Jolliffe, secretary (17 Albany Road, Bexhill-on-Sea) and Mr Bates, Mr Mostyn and Mr Brett-Smith to the committee. Mr Barry Funnell of Hastings then gave a most enjoyable slide show and talk on the smaller tropical marines.

. . . CHANGE of secretary for **COLWYN BAY & D. A.S.** The new officer is Mr R. FF. Evans, 16 College Avenue, Rhos-on-Sea, Colwyn Bay, Denbs. The Society meets fortnightly on Mondays at the Beaumaris Hotel, Lawson Road, Colwyn Bay. New members are most welcome and aquarists visiting the area are invited to attend club meetings.

. . . **SWILLINGTON A.S.** members entering the club's home furnished aquaria competition to be held shortly greatly appreciated the talk by Mr G. Binks on the setting-up of a furnished tank. New fishkeepers also benefited from a discussion held on problems faced by the novice, illustrated with examples from aquarium magazines' query columns.

. . . **HASTINGS & BEXHILL A.S.** members are enjoying many activities at present. Meetings, that have included lectures by Mr Armstrong of Farnborough and by the chairman of the F.B.A.S., are held twice a month and are packed to capacity. The club was represented at the Hastings Autumn Show when members set up seven tanks, and the home aquaria competition was recently judged by Mr Boorn of Ashford and won by Mrs Greig (2, Mr G. Pryke; 3, Mr Greig).

. . . **MR T. DENIS SMITH** is the president of **BRENT A.S.** for the coming year, and Mr Laurie Pavitt and Mr Bernard Elliston the vice-presidents. Other officers elected at the A.G.M. were: chairman, Mr T. Butler; vice-chairman, Mr D. Howe; secretary, Mr R. Fox (22 Harvist Road, London, N.W.6); treasurer, Mr P. Shrimpton; show secretary, Mr J. Raymond; assistant, Mr D. Thomas; committee, Mr B. Fellows, Mr K. Lee, Mr R. Howe.; F.B.A.S. delegate, Mr T. D. Smith. The chairman congratulated members on their tremendous efforts during the past year, culminating in taking no less than eight awards at The Aquarium Show. New members will be warmly welcomed.

. . . THERE was an attendance of 20 at the first meeting of newly formed **HARROGATE & D. A.S.** (secretary, Mr A. P. Stothard, 5 Regent Avenue, Harrogate, Yorks.). The January meeting will be held at

7.30 p.m. on 13th January at Church House, 19 Victoria Avenue, Harrogate, and all will be welcome.

. . . **BARNESLEY T.F.S.** members found the talk by Mr J. Wike of Huddersfield on live foods and the rearing of fry really helpful. Mr Duncan's entries came first and third in the table show for killifish and a.v. female and an entry by Mr Holmes was second.

. . . A 'CHAIRLADY', Mrs P. Wright, is leading **YATE & D. A.S.** for the coming year. A lively and well attended A.G.M. also elected Mr P. Wright as secretary (assistants, Mr and Mrs R. Bennett); treasurer, Mr A. Snell and reporting secretary, Mr D. G. Smith (34 Fairlyn Drive, Kingswood, Bristol BS15 4PU). A shield was presented to the Society for winning the inter-club shows held with Bath and Stroud. Meetings are held on the first Monday of the month at the Horseshoe Inn, Downend, Bristol, and visitors, guests and new members are always welcome.

. . . **FISHKEEPERS** in the **WHITCHURCH**, Salop., area may like to know that there are plans to form a society in the area. Anyone interested in joining should contact Mr A. E. Claxton of The Pet Shop, 57 Green End, Whitchurch.

. . . **OFFICERS** elected at the **BETHNAL GREEN A.S. A.G.M.**



are: chairman, Mr J. Gower; secretary, Mr P. Arnould; treasurer, Mr J. Hayes; show secretary, Mr A. Davis; assistant, Mr J. Coombes; P.R.O., Mr A. Collins (11 Arrow-smith Road, Chigwell, Essex); committee, Mr P. Brindley, Mr T. Newman, Mr J. Adams, Mr F. Williams. The accent for the coming year is on recruiting new members, to which end the services of resident lecturer, Mr Frank Tomkins, who has been with the Society now for nearly 2 years, were highly praised. The Society meets every Tuesday evening at 7.45 at the Shoreditch Institute, 229 Bethnal Green Road, London, E.2, and further information will be given by Mr P. Arnould, 128 Amburst Road, Hackney, E.8.

... AT the annual general meeting and Convention of the **BRITISH AQUARIST STUDY SOCIETY** Dr G. Cust was elected president and thanked for the tremendous work he has put into the Society over the past few years. Other officers were re-elected for a further term. Mr Winston Taylor of Belle Vue Aquarium lectured on tropical marine coral fishes and illustrated his talk with an excellent film he had taken at Belle Vue, showing shots of marines spawning. Later, a Brains Trust was held and searching queries from the floor were answered by the panel of experts.

... **NEW FOREST A.S.** were able to avert disappointment when fog prevented the guest speaker arriving by having a reserve quiz programme available. This was presented by Mr D. Harding and much enjoyed. Prize cards for the triangular match with Salisbury and Bournemouth societies were given out. Although New Forest are in third place, it is only the end of the first round and members hope to change this situation.

... **BISHOPS CLEEVE A.S.** are delighted that Dr Herbert R. Axelrod has accepted their invitation to become co-patron of the Society with Prof. Dr Gunther Sterba. The Society have enjoyed recently a talk by Mr W. Harold Cotton on aquarium hygiene; several members joined members from three other societies to spend an enjoyable day at the B.A.F. in Manchester.

... **ALTERNATIVE** arrangements were quickly put into operation when the G.P.O. failed to deliver a hired slide show to **TONBRIDGE & D.A.S.** in time and at short notice Mr J. Bellingham and Mr I. Mathieson provided a show covering fish from a member's tanks, the club visit to London Zoo and a trip round an East African Game Park.

Two new names were added to the list of card winners this year at the table show—Mr L. Gosley and Mr A. Packham.

... **CWMBRAN A.S.** have been in operation for some 12 months and now that the critical summer period is over the Society looks forward to renewed interest from members and an increased membership. Secretary of the Society Mr J. E. Hankinson (1 Cardigan Court, Caerleon, Newport, Mon. NP6 1DH) thanks Newport and Cardiff societies for their help and support.

... **WHEN THE SURREY AQUARIST CIRCLE** celebrated its twenty-first anniversary in the autumn with a dinner at the Lincoln Arms Hotel, Weybridge, each menu carried a replica of the Circle's crest, hand-painted by one of the members. President Mr R. G. Mealand spoke of the happy fellowship sustained over the years and of many show successes, obtained mainly because of the Circle's policy in showing fish in pairs. The current chairman was presented with a unique and attractive badge of office, to be held by Mr Fowler, it was hoped, for many years to come.

... **GORTON & OPENSHAW A.S.** is in the process of re-organising to ensure maximum progress for the Society. The re-formed committee consists of: chairman, Mr Brian Thompson; secretary, Mr Glyn Mills (73 Ashdale Crescent, Droylsden, Manchester); treasurer, Mr A. Newsome; show secretary, Mr Hodgkinson; minute secretary, Mr A. Seabridge; P.R.O., Mr E. Price. The Society meet on the first and third Wednesday of the month at 8 p.m. at the Midland Hotel, Hyde Road, Gorton, Manchester 18 (near Belle Vue Lake entrance).

... **PLACINGS** in the monthly table show competition for **HORSFORTH A.S.** members: A.O.V.: C. Corns, 16 points; J. Dickinson, 11; J. Girdam, 9. Specified: J. Girdam, 12; Mr Barker, 6; C. Corns, 5. Juniors: J. Dugdale, 25; N. Holmes, 14; D. Shaw, 3. The first leg of the Society's inter-club competition with Keighley A.S. resulted in a win for Keighley with 46 points to 18.

... AT the request of the Committee of **COVENTRY POOL & AQUARIUM SOCIETY**, members put forward so many suggestions for the programme of events in 1970 that all that is needed now is a 19-month year! Club members Mr Ted Sheehy, Mr Bernard Bromfield and Mr Stephen Woodridge have been having much success with their entries at open shows.

... **BRIGHTON & SOUTHERN A.S.** have moved to a new venue. This is the Springfield Hotel, Springfield Road, Brighton. New members are always welcome and anyone interested in joining the Society should contact secretary Mr Bert Shelton, 45 Coventry Street, Brighton. Members have enjoyed an informative slide lecture by Mr Katritsky. The table show for egg-layers, breeding pairs, was very popular, with 25 pairs of fishes benched. Winner was Mr D. Soper with chequer barbs (2, Mr E. Cox; 3, Mr V. Aldis).

... **FROM** the B.A.F. this year **BRADFORD & D.A.S.** members took the following awards: Mr J. Hooper, first in Class 9 coldwater (sun bass); Mrs M. Firth, first in Class 13P (*A. agassizii*); Mr A. Firth, first in characins (emperor tetras); Mr J. Smith first and special a.o.v. livebearers (sunset platys); Mr D. Kennedy, third in a.o.v. tropicals (Carapo knife fish).

... **MEMBERS** of the Breeders' Section of **NOTTINGHAM & D.A.S.** are to compete for an annual award donated by Mrs Bulleyment in memory of Mr George Bulleyment, who was the Breeders' Section leader. At a spot check taken at a recent meeting of the section it was found that members had bred the following fishes in the previous 6 months: Mr Pykett, platys, firemouths, blue scaras, *P. kribensis* and orange chromides. Mr Lowe, *C. severum*, neons, orange chromides, blue scaras, *A. australe*, *Ricinus ornatus*. Mr Ellis, orange chromides, guppies, leeris, *P. kribensis*, mollies. Mr Kenney, blue scaras, angels, chequer barbs, rosy barbs, leeri gouramis, Mr Husk, guppies. Mr Hill, orandas, mollies. Mr Pearson, moors, scaled fantails.

... **THERE** were 97 entries for **MERSEYSIDE A.S.** fourth table show of 1969 and Mr Norman Petersen won the award for the best fish in the Show with his ruby barb. Junior members did exceptionally well at this show and were among the first three places in nine of the 15 classes.

... **JUNIOR** members of **LEAMINGTON & D.A.S.** have also been featuring in the news by being placed second and third in the Society's home aquarium competition. First award went to Mrs J. K. Smith, whose winning tank contained plenty of rocks and was planted with wisteria, *N. stricta* and sword plants. The fishes were all barbs of good size and colour.

# The AQUARIUM SHOW in London

'It will be a big week too for pet fish' wrote the DAILY MIRROR in advance of The AQUARIUM SHOW, and judging from the numbers of the general public who again joined the thousands of enthusiasts at the Show there should shortly be a big population explosion among the pet fish section of the community. Prospective hobbyists were able to see what fish to buy, what to keep them in, what to feed them on, what to cure them with and, on the competitive benches, what results to aim for.

The organising skill of show secretary Mr Harry Towell (F.B.A.S.) and the concerted efforts of senior stewards Mr Fred Campbell, Mr Dave Ellis, Mr Doug Holleyman, Mr Len Smith, and Mr Sid Tarrant coped smoothly with the competitive classes. Judges were Mr D. W. Ellis, Mr L. G. Emery, Mr D. Hancock, Mr J. M. Skinner and Mr F. Tomkins. A more spacious arrangement with increased seating facilities was achieved at this second AQUARIUM SHOW by PFM's show manager, Mr Cliff Harrison, who had the headache of ensuring that all the demands of display space were met without hindrance to the access of spectators.

Traders had new equipment on view, new fish for sale and new foods to try. Nishiki-koi, a pond exhibit, marine fishes and octopuses on the trade stands were among the 'spectaculars'.

Two of the specialist societies took advantage of the occasion to hold their own shows. The Fancy Guppy Association stand, which was gaily fitted out as a circus tent to house 'The Greatest Show on Earth', cleverly incorporated house space for the guppy show held on the Sunday and the sight of these magnificent fish as well as those in the permanent

planted tanks on the stand must have accounted for many of the 29 new members that the Society won. The British Killifish Association display of fishes occupied over 800 sq. ft. and included entries from Germany, the United States and even New Zealand for the International Killifish Show. This was judged by Mr Leif Christensen, chairman of the Copenhagen Killie Association, for whom it was an added pleasure to meet the members of the party from Germany, including Herr E. Roloff and Mr George Kattanach who arrived for the Show. The Goldfish Society of Great Britain traced the thousand-



The circus theme (above) and space vehicle (below) won second and third awards for Independent A.S. and Erith A.S. respectively in the tableaux section

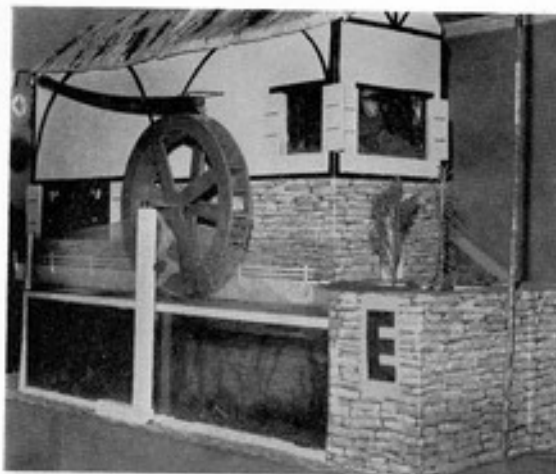




year history of their favourite 'red-coloured fish' over tanks containing examples of the many varieties into which the goldfish has developed, and a really comprehensive display of native coldwater fishes and invertebrates was mounted by the British Ichthyological Society. On view were stone loaches, crayfish, gudgeon, bullheads, minnows and the general public's favourite spine-chiller (judging from the ooh's and aah's)—the common eel.

The general verdict on the Society Tableaux was that the ingenuity and workmanship on display was even greater than that of 1968. Surprisingly, perhaps, only two clubs developed space-travel themes. Uxbridge boldly proclaimed, against a well-made rocket with an aquarium in its head—'The Uxbridge Club is out of this World', while Erith, whose exhibit obtained the third highest public vote, had built a space-vehicle replica with flashing lights all ready for the





Top: Reigate & Redhill A.S.  
Below: Hendon & D. A.S.

Top: Runnymede A.S.  
Below: Tottenham & D. A.S.

lift-off. The most popular theme this year was, in fact, the country scene. Portsmouth showed a thatched watermill on a hillside down which a stream ran, and on the Reigate & Redhill stand a thatched water-mill was seen in close-up, as it were (and guessing the source of the ever-flowing water that turned the large wheel became a popular pastime). Runnymede's tanks were blended into a painted country scene by the use of bark and grasses and Tottenham & D. A.S. had devised a tiered display with a stream running into a tank that initially housed a magnificent pike. (The pike's demise may

well have been aggravated by the public's kindness in filling his tank with coins collected for the spastics society.) Basingstoke's display was devised as a section of a stream, and beneath the rush-edged surface were housed a number of most realistically planted tanks containing a really impressive selection of coldwater fishes and crustaceans.

Ealing and Hemel Hempstead transformed the whole of their tableaux areas into huge 'tanks' with underwater scenes and model fishes swimming in 'mid-water' (the Hemel Hempstead fishes were mobile cut-outs of the club's symbol). Hounslow

used the surface of their stand to make a large pond above which three tanks were supported on piles. Two tableaux in which the tanks were most cunningly incorporated were designed by Hendon & D. A.S. and Independent A.S. Hendon built a finely executed stamp album in which tanks with different coloured backgrounds were inset and indeed wholly gave the effect of an open page of coloured stamps. Independent, who were voted second in the competition, had set three tanks against a circus back-cloth and had transformed them into the carriages of a travelling circus train with the authentic '90s flavour and containing zebras, leopards and tigers. The central tank was set up as a circus scene, with woollen tightrope and trapeze. The only domestic scene amongst the

Facing page: tableaux by Bracknell A.S. (first), Hemel Hempstead A.S., Hounslow & D. A.S., Southend, Leigh & D. A.S. and Basingstoke A.S.

## The AQUARIUM SHOW 1969

Tableaux was the mock-up fireplace, where the fire glowed warmly throughout the Show, designed by members of Southend, Leigh & D. A.S. The two tanks inset above the chimney piece must have given ideas to many of the onlookers.

The winning exhibit was entered by Bracknell A.S. and showed a scene incorporating all the characters from 'The Magic Roundabout'. Society members had made the models, including a very fine Dougal and magic roundabout itself, and excerpts from a record of 'The Magic Roundabout' were played as an accompaniment (with the permission of CBS Records). Children especially were delighted with the scene.

Although Mr Leif Christensen's inability to stay on in London to give a lecture at the Show was a great disappointment, those who joined Mr Jim Kelly's compered film shows on the Saturday and Sunday were soon under the spell of this favourite aquatic lecturer.

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Full results for the competitive classes were given in last month's issue of PFM (page 347). Dates of The AQUARIUM SHOW 1970 are already fixed: 29th October to 1st November.

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For the small fish—The Greatest Show on Earth. Colourful and informative exhibit by the Fancy Guppy Association



Uxbridge A.S. used the space-travel theme linked with a self-booster message



Left: Country scene with stream and water mill (by Portsmouth A.S.). Right: A monster aquarium with realistic large fish was the setting for Ealing & D. A.S. furnished tanks and pool

## AQUARIST IN GHANA

# Toothcarps Abundant

WHILST in the Franza River, which as I described in my last report is little more than a large stream, some thrusts with my scoop-net in the shallow water landed a few unusual fishes. The best method when using a scoop-net, I have found, is to push the scoop-net hard against plants and grasses at the edge of the stream, and then to do a 'war dance' in the plants, thus clouding the water for yards, mashing the plants and providing more proof of insanity for the watchers. A by-product of these goings-on is that fishes are caught, often in large numbers, and dumped in catch buckets before they can jump out.

This process yielded, at our first try, a 3-inch specimen of *Hepsetus odot*, one of the 'tigerfish'—a fierce group of predatory characins. *Hepsetus* is attractively marked around the eyes and has a dark blotch on the rear half of the body below the dorsal. It also has a well equipped set of jaws and a reputation for being very fragile. I have never kept one of these fish alive for more than a few hours, although that is possibly because all the specimens I have caught were very small (2-3 inches). To be quite honest, I was rather surprised to find *Hepsetus* in the Franza at all; I know it is widespread in Ghana but somehow I wouldn't have expected to find it in such a small stream as the Franza.

Other fishes our wine-pressing dance in the plants flushed out included snakeheads (*Paraphiocephalus obscurus*) of all sizes and degrees of bellicosity, and gobies. The commonest representative of the Gobiidae was *Eleotris lebretonis*, an attractively marked fish when adult, with reddish grids of lines on the fins. Out of the grasses in surprised hordes also came *Epiplatys choperi* and *E. dageti dageti*, a local subspecies of the 'fire-mouth pan-chax' from Liberia.

However, probably the commonest toothcarp was the fragile little lampeye *Aplocheilichthys roscaureli*. Like other procatopodines, these fish are found in huge shoals, or groups of shoals, near the surface—usually just outside the fastest moving stretches. In the patches where they occur, these little fish are incredibly abundant. I decided to catch 100 and see how they survived. Jeremy and I waded under the bridge where the Half-Assini road crosses the stream, and stood up to our armpits in water. To use the big scoop-net on the hordes of fishes all round us seemed very unsporting, so, with Jeremy holding a bucket, I scooped out 100 fish in 5 minutes using only a small aquarium hand-net!

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By DAVID BLAIR

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These lampeyes are pretty little fish, but not as sturdy as their relatives *A. macrophthalmus*, and probably have no future as an aquarium fish. I believe that one or two attempts to export them to Europe in the past were thwarted by the fish's habit of dying in transit. Anyway, I decided to have a go, and 2 weeks later I still had 80 or 90 survivors swimming in a basin in Tema and dispatching dried food with alarming ferocity—it may be a mercy for fish collectors that this species never exceeds 1½ inches. In the end I had to leave the lampeyes in Tema because my shipping boxes were full to overflowing.

Other fishes in the Franza include such as *Pelmatochromis (arnoldi or guentheri)* or both) and *Nannaethiops*. I also saw a *Chrysiichthys* with a distinct yellowish tinge, which sur-

prised me, and the inevitable clariids. We fished for something like 5 hours in the Franza that afternoon, and got a pretty good idea of the population.

The next morning, Mr Harrison, the manager of the Nzima coconut-oil factory, arranged for a car to drop us at a small stream about 10 miles from Nkroful on the Half-Assini road. This place was an aquarists' paradise, as well as a local washing place. Also, this was on a school holiday so all the local schoolchildren aged between 3 and 23 descended on us, and the ones at the front of the mob kept up a running commentary on our activities for the benefit of those further back.

We caught lampeyes, *Epiplatys*, *Alestes longipinnis*, snakeheads, clariids, *Eleotris lebretonis*, *Nannaethiops*, *Hemichromis*, *Pelmatochromis* and a few others. The most interesting specimens we caught were some small *Afronandus sheljuzhkoii*, a relative of the leaf-fish (*Polycentropus*) from Nigeria. This fish reaches a maximum size of probably about 3 inches, but no one is very certain because only a dozen or so have ever been kept by aquarists and most died very quickly. All the ones I caught were about half-an-inch long, but, unfortunately, they died in transit.

On my two previous visits to this part of Ghana I had caught *Lepidochirus adonis* in these streams, but this time—none at all. *Lepidochirus*, as mentioned in my last report, is a tiny, almost scaleless, tetra.

After our 2 days at the Esiam factory, we decided to return to Takoradi, but, with our huge load, this was easier said than done. Also the lower Ankobra ferry was out of order (probably a blessing) so we would have to go the long way round, over a bridge 20 miles away. We asked Mr Harrison if he had any lorries going to Takoradi the next day and he said he had: nevertheless we weren't expecting to be woken at 5 a.m. with the news that the lorry was waiting!

When we got back to Tema I had to sort out arrangements for sending the fishes we had collected to the British Killifish Association in London. I had to get health certificates for the fishes, a form from the Bank of Ghana and an export

licence. After that I checked with B.O.A.C. that I could send the fishes on such and such a date.

Since most of the fishes I was sending were killies, I could not pack many fish in each bag, but had to segregate males, one to each container. This is an easy job when

only two or three pairs are involved but when packing 100 or more males in a bag each, it is a bit time-consuming. I intended to send five boxes and expected to spend about 7 hours packing them, so I was up at 3 a.m. to start work. At 8 a.m. there were seven of us dashing around

confusing each other but, by 8.40, we had seven boxes packed and threw them into a car for a quick dash to the airport. Fortunately, everything went smoothly—I think if there had been any hitches I would have been guilty of assault and battery with a stapling machine!

## DECORATIVE AQUARIA INSTALLATIONS—4

# Pointers to Successful Installation

By H. J. GILBERT

I HOPE that the reader of this series of articles will not say 'But I am no do-it-yourself expert.' True they have been compiled with the idea that most aquarists are basically handy, artistic people; sometimes these qualities need a little encouraging. Have a go, call in expert help or advice if you must, but my guess is that when your friends say 'What a smashing set-up'—or words to that effect—it will be ample repayment for all your hours of worry. It may even disguise the fact that you have a number of indifferent fish in your aquarium!

A few points may be emphasised so that your final masterpiece may be achieved as easily as possible. Bear in mind the weight of a furnished aquarium and possible effect of any vibrations. Be accurate in measurements and the use of your spirit level; nothing looks worse or is so difficult to camouflage as the surface of the water in a tank that is not level. If you have any doubts about necessary structural alterations or the electrical installation call in professional advice.

Most electrical aquarium appliances are of two lead design: just a positive and negative line with no earth wire; even so it is a safety factor to incorporate the 13 amp type of sockets, which have shutters to close and shroud the live points as the plug is removed. Where possible it is best to provide infinitely variable lighting over your aquarium by the installation of a number of ordinary bulb holders wired in parallel. They do not all have to be in operation at once, so the aspect of your tank may be changed at will or if plant growth necessitates it. This is also the cheapest type of installation.

The type of lighting you decide to incorporate also has to be borne in mind when you work out the head room or mode of access to the tank for servicing. Servicing procedures always require a good overhead light and it is obviously not a good design if you have to have a detachable hood precariously balanced on the top of the tank whilst siphoning, etc., is going on. Daily feeding should be able to be carried out without dismantling your cabinet completely.

Cover glasses in any set-up are a must; they help heat conservation by reducing condensation, they protect the

light fittings and prevent fish jumping out of the tank. It is always worthwhile to carry out any heat-insulation that is possible round the tank in your set-up. Even where central heating is used remember there are times when heating may be off and your electrical internal heaters will have to bear the full load.

If your tank is in a wall or forms a room divider and you wish to view it from both sides the problems of setting it up may appear rather daunting. They need not be. Heater and aerator stones or filter inlets have to be at the tank's ends and concealed on the centre line of the tank by rocks and plants. With tall plants along the centre line and at the ends of the tank to form a screen, it is possible to provide extra swimming space for the fishes and a degree of perspective to each viewing face by making an open path diagonally from one corner to the opposite one.

Compost in the tank centre can be kept in position at a higher level by suitably inclining some small flat rocks. Although it takes longer for the tank to settle down and look natural it is as well in a set-up of this type to concentrate on using *Cryptocoryne* and other slow growing species of plants. If the rapid growing and light-loving plants are used the amount of light from both sides as well as overhead will make it practically impossible to keep the tank neat and tidy without an extraordinary amount of servicing.

Finally, from the inside to the outside of your masterpiece. If you have covered it with a natural or stained wood rather than any of the popular plastic-finished products, consider the advantages of the polyurethane type of polish or varnish. They are heat- and water-resistant and the gloss will remain after many years of comparatively rough handling. In any case do not be tempted to use any of the aerosol type of polishes near your completed aquarium.

# 'All Must Have Prizes...'

**A**N aquatic show can be so many things to so many people. To some it is just plain, hard work. To others, a challenge to add to their collection of trophies; even a chance to show off the society and to initiate the 'unbelievers' into the many faceted art-cum-hobby of keeping fish.

But to me, once the fish have been seen, the silent gulping of the last baffled goldfish noted, a show is a place to meet people—and what people. The AQUARIUM SHOW '69 sponsored by PETFISH MONTHLY was no exception.

During the preparation and setting up, in those infrequent lulls in show-building, one gets a chance to let a little of the enthusiasm of many aquarists taking part to rub off. Keeness and enthusiasm are but poor words to describe the attributes of people such as the Portsmouth A.S. group who through a series of unfortunate mishaps and misunderstandings had to make the trip to and from London no less than three times to get their tableau put up. Likewise the undaunted aquarists who were prepared to work all through the night and couldn't believe that the Hall's caretaking staff were not prepared to share the devotion beyond 10 p.m. to their tableaux, those society exhibits that are as solid and as lovingly made as a piece of Victorian furniture. Photographs of their efforts and notes on their exhibits will be found on other pages.

During the benching of the fish I had a chance to chat with **Leif Christensen**, that energetic chairman of the Copenhagen Killifish Association. His one regret was that a last minute call from Denmark meant he had to fly home before he had had a chance to speak to our Saturday gathering. He was over judging the International Killifish Show staged as part of the B.K.A. exhibit.

After examining the exhibits, viewing the fish, having spent the limit of their pocket book with the traders at the show, many hobbyists feel they have exhausted their visit, yet if they would only linger a little longer they would be surprised at what wealth of interest remains to capture their imagination. Take the

By **JIM KELLY**

traders; now all would agree that these hard-working folk are present to sell their goods or show the flag, but what other line of business can boast such specialists?

**Ken Fawcett**, on the T.F.H. Publications stand is not only an acknowledged hobbyist in all things tropical but is now showing a keen interest in the new koi and has formed a society dedicated to these highly colourful fish. Ken and I had a long

cock; both had travelled down from Manchester to take in the show.

**Herb Royal Ltd.** had its usual terrific range of Tetramin products including a very explicit and practical demonstration of their new Esha pump. As I passed they were explaining it all to some more visitors from Northern Ireland.

If your tastes run to marine, you couldn't have done better than to pause for a few words with **Terry Hall** and **Gerald Jennings** on the Kraken-Fonthill display. Telling it to the 'marines' is something these lads know all about. Pity that their fellow director, John B. Clark, missed



chat with another visitor, **Dr Neville Carrington** of Inter-Pet.

To the northerner like myself, **Keith Barraclough** (King British) needs no introduction. As well as being well known in the aquatic trade, Keith and his manager, **Gordon Holmes**, are familiar figures at most of the fish gatherings. In Bradford, he has organised Britain's first and only show devoted to furnished aquaria and his two annual events have acted as a shot in the arm for this branch of the hobby. It was at their stand that I bumped into two other well-known northerners, **Mr T. C. Honeybill**, the aquatic wholesaler, this time enjoying a busman's holiday, and the aquarium curator from Belle Vue Zoological Gardens, **Eric Wood-**

the Show. He was working hard out in the West Indies obtaining fresh supplies of Caribbean fishes.

Say Tooting and if you are a fishy type you immediately think of **Johnson's Aquarium**. On this stand was a range of tanks to suit all tastes, not forgetting the new Fish-E-Quip range for the visiting trade member.

At the **Lee Aquarium Centre** stand I was interested in their method of manufacturing tanks with the top and bottom frames in one piece. When covered with a poly-coating, these aquaria were rustproof and ideal for marine set-ups.

I suppose it is the ambition of every aquarist with a garden to own a pool, and if you had such thoughts in mind you weren't neglected. **Neal's Pet and Garden Centre** staged a



beautiful pond and water garden and showed what could be done with a fibre-glass pool, statuary, stone walling and a little imagination. Backing the pool they had aquaria with koi for sale.

Having been addicted to yeast tablets for years, I needed little persuading that the flaked fish foods produced by **Phillips Yeast Products Ltd.** should form a part of the well-brought-up fish's diet. Did you know that a little yeast sprinkled into your micro worm culture will make it go like a bomb?

My wife couldn't make the Show this year and though I was disappointed by this fact it did mean that my car wasn't loaded up with corals and sea shells on the homeward journey, the usual results when my 'better half' meets the Sarogny Art Products stand. Manned by the proprietor, **Leslie Sarogny**, and his charming assistant, **Vicky**, the stand had a display to gladden the heart of any conchologist, with items that started at a few coppers.

Remember that picture of an early vivarium most of us admired (and copied), on page 22 in THE ENCYCLOPEDIA OF TROPICAL FISHES? At the Show you would have had a chance to meet **Eric Bowler**, the man

## Shows 1970

*THE FEDERATION OF BRITISH AQUATIC SOCIETIES has arranged a special Show Meeting at The Conway Hall, Red Lion Square, Holborn, London, W.C.1, on Saturday, 17th January at 2.30 p.m. to which societies are invited to send representatives to put forward suggestions and discuss the proposed major aquatic shows to be held during 1970.*

responsible for it, on the stand of South Coast Aquatic Nurseries. Also being shown under the Scanco banner were the Suregrow range of foods.

**Gussie** is a well-known name in the world of fish foods and on the Armitage Bros. Ltd. stand the new flake food of this company was being introduced to aquarists.

Director of Tachbrook Tropicals Ltd. and Windmill Products **Mr Tom Horeman**, is well known to the readers of PFM. Tom is one of our

foremost experts on aquatic plants and those visitors after decorating their fish tanks need have looked no further. Windmill Products were displaying a unique aquarium that, by a few simple adjustments, could be extended to any length one required. Certainly a thought for those planning a future fish house.

The Nuova accessories designed by one of Germany's leading hobbyists were fully displayed by TradeFish (Aquarium) Company. Here, along with the familiar faces of **Alan Brunton** and his family, we again welcomed **Mr and Mrs Holgen** over from Holland. These Dutch people with their impeccable English made me, with my 'hot pot' accent, blush!

Next door was a demonstration on making your own aquariums in glass using the clear, silicone rubber sealant Trophix. As well as being active traders, the owners, **Doris and Norman Court**, are well-informed guppy personalities, so it was fitting to find them alongside the F.G.A. exhibit. Such was the exchange of folk between the two stands it often looked as if Trophy Products had the largest staff imaginable.

I could go on and on about the many wonderful and interesting people it was my pleasure and privilege to meet. **Mr and Mrs Alec Fraser-Brunner** were welcome visitors and we even had a visitor from New York, who promptly took away two of the metal show badges to have souvenir cuff links made from them in the States. Paying a return visit was Austrian botanist, **Dr Hella Czech**, who was very pleased with the furnished aquaria staged by the societies.

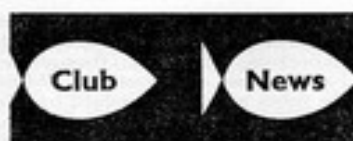
This was the second year I had worked with the Show 'team': show manager **Cliff Harrison**, show secretary **Harry Towell**, senior stewards **Fred Campbell, Dave Ellis, Douglas Holleyman, Len Smith** and **Sid Tarrant**, and I can only repeat what I said last year: it is men like these who make the hobby second to none.

To those who I have missed out, my apologies, you were just too numerous. To those who won, our congratulations; to those who didn't, our sympathy. It seems a pity that we cannot support the Dodo in ALICE IN WONDERLAND when he said: 'Everybody has won and all must have prizes'.

## how?

How can I stop my air pump being so noisy?

UNFORTUNATELY most of the cheaper-priced pumps, particularly the vibrating kind, are noisy in operation. Excess of noise is often the result of faulty adjustment. The armature must at all times be clear of the electromagnet pole faces; if it isn't, a steady chattering is the result. Adjust it by means of the small screw or nut provided. Other methods of silencing involve the placing of a small piece of 'Band-aid' between the armature and magnet at the spring fastener end, and if the pump base isn't fitted with rubber feet placing a piece of felt or rubber underneath the pump can do a lot to silence it. On no account should the pump be placed in a box or packed around with insulation material—this will only cause the pump to overheat and there is a danger of fire. If the noise is unbearable and the replacement by a more expensive model is out of the question you could place the pump in a cupboard or even in another room. Remember though that if you make the air hose too long reduction in pressure will be experienced. Service the pump regularly, see the valves are clean and particularly see that the felt air filter (if one is fitted) is not blocked. Above all don't clamp the air hose too severely—the subsequent back pressure will ruin the diaphragm—rather run the excess of air to waste via a bleeder valve.



**BRISTOL A.S.** members have been particularly grateful to president Mr H. T. Jago, vice-president Mr F. Brown and secretary Mr E. Wilson who, largely through their own efforts, were able to put on a display for the Society at the B.A.F. Mr Jago won the award for the highest number of points secured by an exhibitor at Belle Vue. Two very popular speakers have entertained members at recent club meetings. Mrs Norma Cradock, wife of a former member, spoke as an aquarist's wife who has had to share both her home and her husband with the hobby, much to the delight of the audience. Mr Les Dodge of M.A.P.S. has also lectured to the Society on how to keep coldwater fish in winter. Mr Dodge is a favourite speaker at Bristol—his popularity is clearly established, we are told by Mr Phillips the club's assistant secretary, by the fact that when he visits Bristol the meeting always over-runs its scheduled time! Recent table show results have been:

Tropical a.o.v. livebearers except guppies: 1 and 2, Miss H. Morgan. A.o.v. coldwater not previously shown, Mr E. Wilson. Characins: 1, 2 and 3, Master Ian Mildon (three cards for the six exhibits on display). Shubunkins bred 1969 (28 fish): 1, 2, Mr J. Savage; 3, Mr R. Pinnock.

**YEOVIL & D. A.S.** are congratulating themselves on their move to a new venue—the Park Lodge Youth Centre—which has brought them a large influx of new members. The November meeting was a great success, overflowing with members clutching jars of guppies, all anxious to hear the advice given by lecturer Mr Wheeler from the wealth of his great experience with this fish. Mr Wheeler congratulated members on the numbers of guppies in the table show and on their high standard. He judged the winning entry to be that of Mrs Langdon (2, Mrs Gaylard; 3, Mr Gaylard).

**HENDON & D. A.S.** secretary, Mr Keith Purbrick, reports the latest club news: 'It is with some sadness that two of our members have left us to emigrate to Australia and we wish Joe and Pat Gorman every success in their new venture. Pat Gorman was our service secretary (i.e. responsible for the hiring of the many tape and slide lectures that we

provide as a service for all societies). We at Hendon pride ourselves on being able to pick beauty with brains and, in order to maintain the standard, our new services secretary is Celia Mould (91 North Circular Road, Palmers Green, London, N.13). Like her predecessor, Celia loves to receive letters—so, club secretaries, write soon, especially for the new tape and slide programmes.'

Hendon is a member of the North West London Group of Aquarist Societies, the main aim of which is to foster good relations between member clubs and hold an annual competition whereby the society with the most points is awarded a trophy. This year Hendon were the winners with 124 points followed by Independent (100), Hampstead (75), Brent (70) and Riverside (61). An inter-club show with Uxbridge & D. A.S. also made an exciting evening. Mr Purbrick writes: 'We had to pull all the stops out as we know Uxbridge have some good fishes. The pointing was a closely fought contest and with the final awards the balance swung gingerly into Hendon's favour and, with the narrowest of margins, Hendon stood as the victors on this occasion.' To strengthen ties with Uxbridge reciprocal lectures have been arranged; Mr Purbrick and Mr Henry White lectured at Uxbridge on swordtails and platys and the chairman of Uxbridge, Mr Pete Ginger, gave Hendon a lecture on barbs. Says Mr Purbrick: 'If any club wants to hear a marvellous lecture, then listen to Pete Ginger.' Equally good was another recent illustrated lecture by Mr Dave Lelliott and Mr John Cooper of Verulam A.S. on characins they have bred.

**BRACKNELL A.S.** enjoyable and successful year culminated at THE AQUARIUM SHOW '69 when their delightful entry won the R.F.M. Society Tableaux trophy against the stiffest competition. More details of this appear in the description of the Show elsewhere in this issue. During 1969 the Society won the Three Counties Bottle League Cup for the seventh year in succession. The club's own Show was very well attended, Mr M. Carter the programme secretary has provided a full and varied programme and other clubs have been entertained and visited. At a fish show at Alexandra Palace Mr T. Duffy won first place with the furnished tank he set up. The newsletter, 'The Bracknell Harlequin' is going very well, thanks to Mr L. Jordan, the editor, and his daughter and son-in-law, Mr and Mrs Carter. The year finished with

an angling match to which all the Three Counties clubs were invited. Mr L. Little of Bracknell won this with Mr M. Davies of Reading second and Mr R. Wilson of Basingstoke third. At the Society's A.G.M., chairman Mr J. Norris retired and is succeeded by Mr L. Jordan. Secretary is Mrs N. Jordan (62 Fernbank Place, Ascot, Berks.; phone Winkfield Row 3400).

**THE CAMBRIDGE & D. A.S.** open show was very well attended by the general public who found the display of information about the Goldfish Society of Great Britain, the Fancy Guppy Association and the British Killifish Association most helpful and interesting. The F.B.A.S. badge board was on display and the Society had their own display of colour photographs and club trophies. There were approximately 300 entries from some 12 societies and the furnished aquaria section made a very nice addition to the Show. Harlow A.S. won the Cambridge & D. A.S. 21st Anniversary Challenge shield for the tropical furnished aquaria class. But indeed most clubs were successful in being amongst the prize winners. The best fish in the show was a fantail exhibited by the Johnston brothers.

**WAKEFIELD & D. A.S.** secretary, Mr C. Archer, tells us that over the past year the Society has had as members the members of the Wakefield Prison aquarists' section, who have been taking as active a part as possible in the activities of the Wakefield Society. The Society has arranged for slide shows and occasional speakers to address the prison section and fish are sent out to the Society's fortnightly table shows. Two of the entries in the Wakefield stand at the B.A.F. at Belle Vue were from the prison section and the stand was painted by one of the prisoners.

**THE INTER-CLUB** show held by **NORTH KENT A.S.** for members of Tonbridge, Erith, Medway, Blackwater and Sittingbourne societies resulted in a very enjoyable evening for well over 100 people who attended. Mr C. A. T. Brown (F.B.A.S.) had more than 100 fishes to judge and made the best fish in the show award to Mr Marshall of Medway. Other results were:

Anabantids: 1, Mr J. Stephens (N. Kent); 2, Mr Clark (Medway); 3, Mr R. Baker (Tonbridge). Barbs: 1, Mr Marshall (Medway); 2, Mr Horne (Blackwater); 3, Mr C. Wood (N. Kent). Cichlids: 1, Mr G. Scott (Erith); 2, Mr J. Bellingham (Tonbridge); 3, Mr R. Bird (N. Kent). Catfish: 1, Mr G. Rolfe (Erith); 2, Mr J. Bellingham (Tonbridge); 3, Mr B. Bloss (N. Kent). Sexed

pairs: 1, Mr C. Wood (N. Kent); 2, Mr J. Stephens (N. Kent); 3, Mr F. Squires (Erith). Livebearers: 1, Mr J. Parker (N. Kent); 2, Mr J. Stephens (N. Kent); 3, Mrs Bellingham (Tonbridge).

The final club positions at the end of the contest are now: 1, North Kent (28 points); 2, equal, Tonbridge/Erith (11); 3, Medway (7); 4, Blackwater (3); 5, Sittingbourne (0).

**THE TABLE SHOW** for a.v. tropical and best fish in club held by **VAUXHALL MOTORS A.S.** produced the largest number of fishes ever seen in the club. Mr B. Sargent of Bletchley judged the entries and awarded first prize and best fish in the club prize to Mr T. Philip who entered a pike cichlid (2, Mrs A. Jeffs and 3, Mr A. Jeffs). Members and guests thoroughly enjoyed the talk by Mr Pat Kavanagh of Bekay Tropicals on the construction and maintenance of a fish house and the relative costs of heating. He also gave a guide to the best ways of commercial breeding to cover fish house outlay.

**WHEN LLANTWIT MAJOR A.S.** held their annual dinner, Mr and Mrs J. Wheeler of Bradford-on-Avon were made honorary members for their services to the Society. A table lamp was presented to Mrs Wheeler and a plaque to Mr Wheeler, who has travelled so many miles to judge at the Society's annual shows since 1960. Alderman P. J. Smith, the president of the Society, presented cups to Mr A. Ibbertson, Mr R. Wigg and Miss Helen Jones and plaques to last year's cup winners. Society activities have also included a very enjoyable evening spent with Bridgend A.S. for the annual inter-club table show, which Llantwit Major members won by a majority of only 2½ points. Members also joined Bridgend members on a coach trip to the B.A.F. at Manchester.

ALL THE reports given at the A.G.M. of **BASINGSTOKE A.S.** emphasised the highly successful year that the Society has enjoyed. Chairman Mr R. Ridley reported record attendances throughout the year that had justified the move to larger premises at the White Hart, London Road. The treasurer reported that the Society had nearly double the amount of cash in hand compared with the previous year. The turnover of money had been a record and was due in no small way to the continuous fund-raising activities of Mrs P. Gough. The show secretary assessed the outstanding events of the year as the Society's open show during carnival week,

**THE AQUARIUM SHOW '68** and the match between the Three Counties Group and the Association of Southern Aquarist Societies. Members had entered more fish in shows than before and the Society now appears regularly in the award lists of events throughout the south of England.

Annual trophies were presented to Mr R. Ridley, winner of the Breeders' Cup; Mr G. Clewer, the Championship Cup for the best fish in the Society, and to Mr A. Blake, the Cup for gaining the highest total of points for the year in table shows. Officers elected for the year are: vice-president, Mr R. Ridley; chairman, Mr D. Walls; vice-chairman, Mr A. Blake; secretary, Mr H. F. Gough (94a Roman Road, Basingstoke); treasurer, Mrs J. Lovegrove; show manager, Mr D. Walls; show secretary, Mr A. Blake; junior section leader, Mr G. Payne; committee, Mrs P. Gough, Mr G. Clewer, Mr A. Mustart and Mr N. Stead.

**TWENTY-THREE** societies entered nearly 400 fishes in the open show held by **HALIFAX A.S.** Details of the results are:

**Livebearers.** Guppies: 1, Mr J. Brook; 2, Mr A. Mawson; 3, J. & B. Dawson. Swordtails: 1, Mr Burnap (section winner); 2, Mr R. Robinson; 3, Mr B. Kirkton. Mollies: 1, J. Brown; 2, Mr N. Turner; 3, Mr D. Holmes. Platys: 1, Mr B. Kirkton; 2, Mr J. Urley; 3, Mr J. Whiteley. **Characins.** Small: 1 and 2, Mr R. Wilkinson; 3, Mr R. Muddleston. Medium: 1, Mr N. Turner; 2, Mr A. Whyte; 3, Mr R. Wilkinson. Large: 1, Mr J. Whiteley (section winner); 2, Mr Hepinstall; 3, Mr L. Thompson. **Barbs.** Up to nigger: 1, Mr J. Whiteley (section winner); 2, Mr F. Buxton; 3, Master Winter. Over nigger: 1, Mr J. Whiteley; 2, Mr Webb; 3, Mr and Mrs Cohen. **Rasboras.** Rasbora, danio, minnows: 1, Mr S. Harrop (section winner); 2, Mrs Davies; 3, Mr Burton. **Sharks and foses:** 1, Mr V. M. Fearn; 2, Mr D. Kennedy; 3, Mr H. Naylor.

**Anabantids.** Fighters: 1, Mr and Mrs Cohen; 2, Mr A. Mawson; 3, Mr Whitlock. A.o.v.: 1, Mr Corns (section winner); 2, Mr V. M. Fearn; 3, Miss Helen. **Catfish & loach.** Corydoras: 1, Mr R. Wilkinson (section winner); 2, Mrs Davies; 3, Mr P. Booth. A.o.v. catfish: 1, Mr and Mrs Gates; 2, Mr D. Fryer; 3, Mr V. Poole. **Loaches:** 1, Mr J. Brown; 2, Mr Webb; 3, Mr and Mrs Hogarth. **Cichlids.** Dwarf: 1, Mr R. Taylor (section winner); 2, Mr N. R. Gibson; 3, Mr J. Whiteley. A.o.v. cichlid: 1, Mr and Mrs Howard; 2 and 3, Mr E. Ormesher. **Toothcarps.** 1, Mr Batley (section winner); 2, Mr Batley; 3, Mr R. Taylor. A.o.v. tropical: 1, Mr D. Kennedy (best fish in show); 2, Mr Whitlock; 3, Mr H. Naylor. **Breeders egglayers.** 1, Mr F. Buxton (section winner); 2, Mr and Mrs Healey; 3, Mr J. Whiteley. **Breeders livebearers.** 1, Mr Gardner (section winner); 2, Mr N. Turner; 3, Mr N. R. Gibson. **Pairs.** Egglayers: 1, Mr R. Robinson; 2, Mr Webb; 3, Mr J. Whiteley. **Livebearers:** 1, Mr R. Wilkinson (section winner); 2, Mr and Mrs Hogarth; 3, Mr A. Hubbard. **Coldwater.** Goldfish: 1 and 2, Mr L. Eadon. Fancy goldfish: 1, Mr J. Hooper (section winner); 2 and 3, Mr L. Eadon. A.o.v. coldwater: 1 and 3, Mr L. Eadon; 2, Mr J. Hooper. **Furnished jars.** 1, 2 and 3, Mr D. Shields.

**THURROCK A.S.** were the hosts at the final meeting in the inter-club competition between themselves, East London and Southend. While the fishes were being judged by Mr Cyril Creed and Mr Ted Jessopp, Mr C. A. T. Brown gave a slide show on killifishes, which was really appreciated by the 80 people present, judging by the enthusiastic applause he received. Detailed results were:

Mollies (24 entries): 1, Mr A. Sutton (Thurrock); 2, Mr S. Hendle (Thurrock); 3, Mr B. Wallings (Southend). A.o.v. tropical (24 entries): 1, Mr A. Sutton; 2, Mr D. Durrant (Thurrock); 3, Mr G. Eason (Thurrock). A.v. coldwater (10 entries): 1, Mr P. Croft (Thurrock); 2, Mr T. Clark (Southend); 3, Mr R. Studwick (Thurrock). **Characins** (73 entries): 1, Mr J. Boss (East London, best fish in show); 2, Mr D. Edwards (Southend); 3, Mr T. Clark (Southend).

Southend were the eventual winners and so hold the Inter-Club block and gavel for the year.

**PRESIDENT of AIREBOROUGH & D.A.S.,** Mr Ray Lister, has had the pleasure of welcoming new members at every meeting so far this year. Programmes have been varied; recently Mr and Mrs J. M. Skinner talked about their experiences with particular reference to furnished aquaria. Mrs Sephton, a local biologist, presented a talk and film earlier in the year on 'Microscopic plant life and algae' and a future speaker will be chemist Mr Prince from the local water board. Other activities have included an interesting visit to the Trout Hatcheries at Pickering, mounting a display of fish, plants and furnished aquaria at the local flower show and presenting a display at the B.A.F. New members and guests who would like to join in such activities can be assured of a warm welcome at meetings held on the first Thursday of each month in the Co-op Hall, Guiseley, nr Leeds. The secretary is Mr G. E. Walker, 2a West End Terrace, Guiseley, nr Leeds, LS20 8LX.

**THE SECOND CLEVELAND A.S.** open show was a great success even though an unfortunate misunderstanding, for which the Society's members wish to apologise to all who attended, deprived visitors of light refreshments. The best fish in the show award went to Mr J. A. Whiteley of Aireborough for a *P. kribia*. Details of the results are the following.

Guppies: 1, Mr C. Simpson (Peterlee); 2, Mr N. Plett (Stockton); 3, Mr G. Monk (Aireborough). Mollies: 1 and 2, Mr E. Turnbull (Hartlepool); 3, Mr A. Turner (Yock). Swordtails: 1, Mr R. Robinson

## Dates for Your Diary

22nd February. **ROTHERHAM & D. A.S.** Open Show. Drill Hall, Fitzwilliam Road, Rotherham. Schedules from Mrs C. Raybould, 52 Dovercourt Road, Masbro, Rotherham.

1st March. **KEIGHLEY A.S.** Open Show. Details from Mr B. White, 1 Moss Carr Road, Long Lee, Keighley.

8th March. **HUDDERSFIELD T.F.S.** Open Show. Cambridge Road Bath, Huddersfield, Yorks. Details from Mr M. Bone, 1 Bradshaw Drive, Honley, Huddersfield HD7 2EU.

18th April. **THURROCK A.S.** third Open

Show. Show secretary, Mr D. Durrant, 22 Kingsman Road, Stanford-le-Hope, Essex.

3rd May. **CROYDON A.S.** Open Show. Stanley Halls, South Norwood Hill, South Norwood, London, S.E.25.

3rd May 1970. **BURY & D. A.S.** Open Show.

10th May. **ACCRINGTON & D. A.S.** Open Show. St John Ambulance Hall, Bull Bridge, Accrington. Benching 12-2 p.m. Details from Mr C. Whitsey, 47 Lynnwood Road, Blackburn.

31st May. **COVENTRY P. & A.S.** Open Show. Foleshill Community Centre, Coventry. For show schedules, send s.a.c. to Mr S. Woodbridge, 32 Ridgeway Avenue, Coventry, CV3 5BP.

13th June. **LLANTWIT MAJOR A.S.** Open Show. Town Hall, Llantwit Major, Glam.

21st June 1970. **SWILLINGTON A.S.** Open Show.

28th June. **ALFRETON & D. A.S.** Open Show. Alfreton Hall, Alfreton, Derbys. Details from Mr S. Hill, 35 South Street, Riddings, Derbys.

5th July. **LYTHAM A.S.** Open Show. Lowther Pavilion, Lowther Gardens, Lytham, Lancs.

19th July. **BARNESLEY T.F.S.** Open Show. Venue to be arranged.

29th October-1st November. **THE AQUARIUM SHOW '70.** Royal Horticultural Society Old Hall, Vincent Square, London, S.W.1.

Make a note of your date in the **PETFISH AQUARIST'S DIARY** for 1970—available from PFM's offices, 7s post free. Use the order form in this issue.

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