

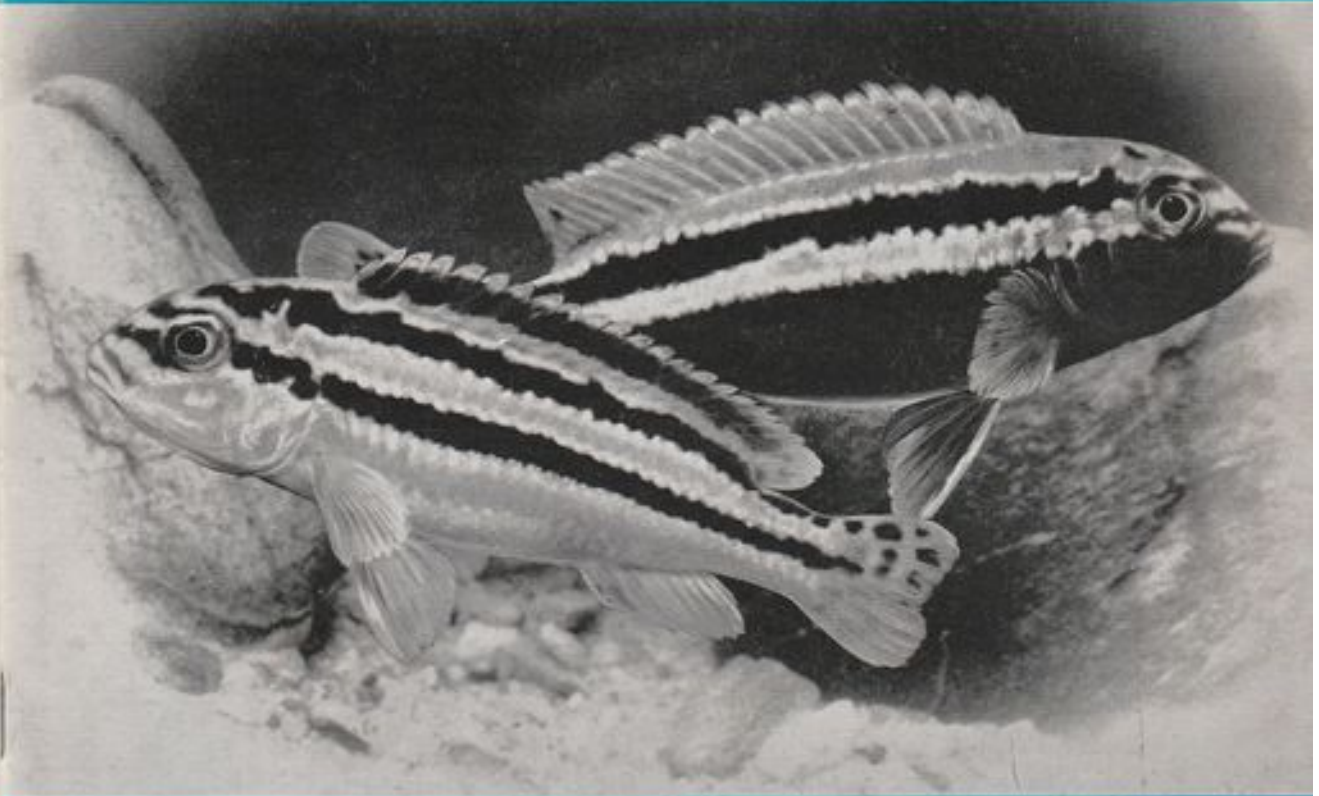
OCTOBER 1970

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Pet Fish

monthly

The PRACTICAL FISHKEEPING MAGAZINE

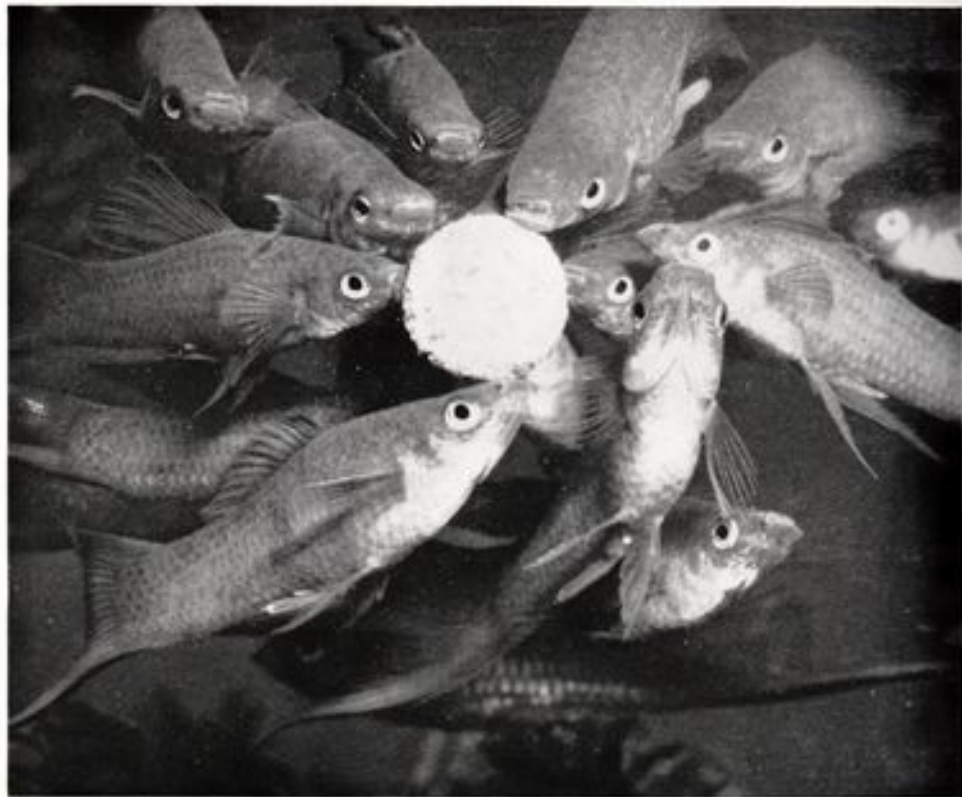


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Monthly 3s

Vol. 5 No. 6

October 1970

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Editor: Anthony Evans

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Comments and Quotes

Live Food Feeding

SOMETIMES the appearance of a note on a particular topic touches off a response that could not be foreseen. An area of controversy becomes spotlighted and the fact that a large number of divergent opinions exist on the topic becomes apparent.

Such a topic proved to be that of the use of 'live foods' for fish feeding, discussed without any particular emphasis on diversity of attitudes towards this, in the article by J. Lee in the July issue of 1968. Further provocation to readers with strong opinions on the subject came apparently with the reader's letter in our August issue in which the lack of live foods at local aquatic shops was the subject of complaint. After this letters on live foods and their value (or lack of value, according to the views of the particular correspondent) began to roll in and we publish in this issue a selection from the many received.

Anyone looking at the controversy for the first time could be forgiven for finding these differing views bewildering. Quite by chance a reply given by one of the panel of experienced fishkeepers who answer our readers' queries was also due to appear in this issue (page 236), so that the whole matter gets quite an airing this month. No apology is made for adding our own comments to the free for all.

For some readers the lack of readily available live foods of the most familiar kinds makes the whole discussion somewhat esoteric. By their own experience born of necessity they will have decided for themselves that feeding with live foods is not absolutely essential. Why then does anyone ever go to the bother and expense of incorporating live foods into the diet of their tank inmates? In answer to this you can talk about food values, vitamins, essential factors and so on but we suspect that the most important explanation arises from the impact of live food feeding on the aquarist and

not from any direct dietary effect of it on the fish.

Add the contents of a ninepenny bag of water fleas to almost any community tank of tropicals and you will see what we mean. The fishes react to the presence of these jerking particles around them in a way that makes their owner feel good to observe. He thinks he has pleased his fishes; they appear by human standards really to be enjoying the chance to chase and seize one of the cloud of crustaceans or to dive into a ball of writhing tubifex and dart away with a mouthful of luscious worm. What sensations they are actually experiencing is another matter, but there's no doubt at all that the fishes show a positive reaction and one that is spectacularly different from that shown to most other foods.

And it's that response that makes the aquarist go slopping around in ponds with gumboots and net or go home with damp packages bought from his local shop—it makes him feel he's done his best by his charges. Good fishkeeping could surely not be more succinctly summed up than by that.

Fireman Save My Fish

A CITY'S firemen have successfully dealt with their most unusual emergency call—giving the 'kiss of life' to 20,000 fish. The call came from Portsmouth Angling Club after they found that the stock of their newly-opened coarse fishery at Hilsa Moat were dying through lack of oxygen.

A prolonged dry spell and lack of a certain weed had made the oxygen level in the moat drop to a dangerous level. After at least 1,000 fish, mostly roach, had died, the club appealed for help to the Portsmouth Fire Brigade. And for two hours firemen pumped water in and out of the moat.

This 'artificial respiration' freshened the water, increased its oxygen content and saved the fish.—DAILY MIRROR.



Your comments and views on all topics of interest to aquarists are welcomed. Address letters to PFM Letters, 554 Garratt Lane, London S.W.17

No 'Live Foods' is a Favour, I Say!

MR MASKELL should not complain (PFM, August) if his local aquatic dealers are failing to provide him with regular supplies of *Daphnia* and *Tubifex*; he may not realise it, but they are probably doing him a favour! During my earlier years as an aquarist I fed both these foods as a matter of course, and despite scrupulously high standards of tank hygiene and the careful isolation of new stock, I was continually experiencing unexpected outbreaks of white spot and other diseases, not to mention odd mysterious deaths from time to time that I could never account for.

Ultimately I began to suspect *Daphnia* and *Tubifex* as the sources of these troubles and experimented accordingly. For a period of 12 months I fed with *Daphnia* but not with *Tubifex* to one-third of my fish, *Tubifex* but not *Daphnia* to another third and only brine shrimp, or live food that had not originated in water, to the remainder.

Among those fed with *Daphnia* there were two outbreaks of white spot and the usual crop of unexplained deaths. Among those fed with *Tubifex* there were no outbreaks of white spot; but there were three cases of fish tuberculosis, an outbreak of 'boils' and an even greater number of unexplained deaths. Those fed neither food remained completely healthy throughout the entire period.

Although this experiment could not be considered scientifically conclusive, I decided never again to feed with any live food that had originated in water, other than brine shrimp, mosquito larvae from my own water butts, and unwanted fry bred in my own tanks. Since then I have had no problems with diseases or mysterious deaths except among new stock in quarantine. And, needless to say, as a commercial breeder I keep fish on a much larger scale than the average aquarist.

Fortunately there are plenty of equally nutritious but far safer live foods and live-food substitutes that are easily obtainable—white worms, earthworms, fruit flies, fly larvae, adult brine shrimp, cooked prawns and shrimp, and lightly cooked ox heart, to name but a few. And freeze-dried *Tubifex* and *Daphnia* are perfectly safe and quite as effective as the living forms for conditioning breeding pairs and 'bringing on' fry.

Cranleigh, Surrey

MATT MOOR

Live Foods Not Sold

I HAVE just moved down from London to a new housing estate at Ashford, Kent, and being a keen tropical fish keeper I have had extreme difficulty in obtaining live food for my fish. I have visited numerous tropical fish shops in the area but have had no success in obtaining live food such as *Daphnia* and *Tubifex*. I have therefore been forced to other commodities. It seems ridiculous to me that tropical fish shops should not provide live food for the fish they sell.

Ashford, Kent

P. J. DOWER

Live Foods Tame 'em

WE are always being told by aquatic experts of the ferocity of certain types of cichlid. I have not yet been a fishkeeper for one year (I began in September—October, 1969), but I have had several different kinds of cichlids, such as *P. kribia*, oscars, blue acaras and angels and I have had no trouble with them at all. I do know, however, that there is a tendency with dealers to tell customers that a fish is timid and would be a good member of a community when really this fish is ferocious. May I suggest that the fact that the cichlids have a ferocious temperament is not the only factor to be considered. The other factor to be considered, I think, is the sort and amount of food fed. I personally have always fed more than the experts suggest one should; and live food now and then, I feel, prevents a fish from being ferocious.

Norwich, Norfolk, NOR 39C

J. DEBBAGE

A Danger

I FOUND the article on live foods (PFM, July) very interesting. Unfortunately, a very popular food, live *Daphnia*, is not available in the local dealer's shop here. I spent yesterday in the country loch fishing for trout and a few spare hours gave me the opportunity to survey a number of pools and slow-running streams. Many of these were teeming with life and I considered collecting some of the inhabitants for fish food but was afraid I would also introduce some unwanted enemies in my tank. Another danger which readers might consider also came to my mind. At certain times during the year farmers use chemical dip on sheep. In areas where sheep are crossing ponds and streams or even grazing close by, I am sure this chemical must contaminate the water.

Lerwick, Shetland

J. HENDERSON

Continued on page 239



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LETTERS

continued from page 234

Too Much Bag Time

I WAS very interested in the article 'Which Fishes for the Garden Pool?' (PFM, August) by Brian Furner. The article made interesting reading. However, I do criticise his advice about leaving the fish floating for one hour in a polythene bag. Having travelled in the polythene bag for possibly one hour without air except for what is in the bag, the fish have to suffer yet another hour's floating. The bag should only be left floating for approximately 10 minutes to 15 minutes before the fish are released.

Westvale, Kirkby

S. M. MCARDLE

Marine Society

I AM pleased to notify PETFISH MONTHLY readers that a new British marine society is now being formed. The intentions of the society are to promote study of all types of marine fauna, especially British sea life. We would like to hear from aquarists interested in coral fish or native marines. With support from readers this society could be in active operation soon. Will keen readers please write to either of the following addresses: Huw Collingbourne, 19 Tan y Bryn, Postygwath, Rhondda, Glam.; Derek Highfield, 119 Kent Road, Woods Est., Wednesbury, Staffs.

Rhondda, Glam.

HUW COLLINGBOURNE

Long Fin Revulsion

I WAS extremely interested in the views expressed in 'Personal Comment' (PFM, August) about the long-finned black tetra. I can only endorse Arpee's comment wholeheartedly. Bulbous-eyed goldfish and split-finned bettas have always been a source of constant revulsion to me.

The black tetra referred to is described on page F-302-05 of EXOTIC TROPICAL FISHES. It originated behind the Iron Curtain, apparently, and its name is G.T.O. or longfinned black tetra. Herbert R. Axelrod says: 'it won't be too long before there are only longfinned G.T.O. offered'. So I am trying to breed lots of normal black tetras. Who knows—they may become a rarity?

Ash, nr. Aldershot, Hants.

M. BURGESS

Tube Travel

I HAVE been keeping tropical fish now for about 14 months and in that time I have had quite a few different fish, mostly lost through ignorance, carelessness or just plain bad luck. I suppose most beginners have suffered in much the same way as myself but the latest mishap might serve as a warning to others, though it's amusing looking back on it.

It happened with the male of a pair of sailfin mollies that I purchased a few weeks ago. This male is really the most beautiful mollie I have ever seen. His dorsal is really something to see as it is about the size of one of the

presentation postage stamps that are sometimes issued. Two days after I purchased these fishes I was siphoning off a few inches of water from the tank using a piece of plastic hose 6 ft. long and $\frac{1}{2}$ in. in diameter. The end of the hose was about $\frac{1}{2}$ in. from the gravel. As I watched, this male came towards the hose, being nosy, and suddenly he was pulled into the tube.

The only thing I could think of doing was to shout to scare him away from the hose, which, thinking back, was the most useless thing to do. He travelled the length of the tube and plopped himself into the bucket I was siphoning into, minus most of his body slime but otherwise, apparently, unharmed. He spent the next week in a salt bath for his pains. How he managed to fit into the hose I don't know, but he did. That was just one more lesson I have learnt that could have cost me dearly. He is now back amongst the other fishes and I am hoping for big things from this pair.

Bury, Lancs.

V. J. HARGREAVES

Thanks to the Midlands

AS one of the visiting 'firemen' to the recent Midland Aquarium & Pool Society Show, may I through the medium of your columns thank the organisers of this event for the friendship and hospitality offered to visiting aquarists like myself.

To continue to stage this show over a period of 27 years is a record that any aquatic group can be proud of. It is a pity that, like so many similar events of this kind throughout Britain, though many will bask in its glory too few offer their services in a practical way to ensure the stands and exhibits are erected. As is usual it is left to the 'few', some of whom this time worked throughout the night to have the exhibition ready for the opening day.

On behalf of all visitors like myself, a big thank you to the M.A.P.S. and M.A.A.S. groups.

JEM KELLY,

Chairman, F.G.A.





Transatlantic TOPICS



By JIM KELLY

tor amongst our ranks hasn't feathered the floor of a room with old papers and magazines only to find that the said 'protective covers' contained compulsive reading?

It was with little surprise that yours truly read a letter from an official in the West Indies saying he had been introduced to *PFF* and my column whilst in a dentist's waiting room. (Strewth! Have we been going that long?)

He enclosed some fact sheets his Tourist Office produced extolling the virtues of his island paradise, and on reading these I realised just what wealth of information on local flora and fauna they contained. The type of information often neglected by many fish breeding manuals, yet essential if we are to duplicate the home conditions of the fish.

How about your club writing to the various Tourist Information Centres throughout the world?; they might provide some fruitful topics for your club meeting. It will only cost you a stamp to find out.

* * *

The Reed Paper Group do to newsprint what I would often like to do to some aquatic writers—it is beaten, shaken, screened and spun around until it is free from defects! Case in point was one author's recommendation not to use micro-worm as a food because these cultures smell! A poor excuse for depriving your young fish of this nutritious diet.

Our author neglected to write that, like Infusoria cultures, they only offend the olfactory organs when prepared incorrectly, and he also neglected to suggest a solution. May I be presumptuous enough to correct his advice and offer one way popular in the Americas?

A cup of water plus a pinch of salt is brought to the boil and after bubbling for a few seconds is removed from the heat. Slowly, pinhead oatmeal is stirred in until the mixture starts to thicken. The

'poeridge' is placed in a micro moat or shallow dish. Into a depression made in the middle of the mixture is placed a teaspoonful of micro from an old culture—cover to exclude the light and keep it on a shelf in the fish house. Made this way and renewed regularly there will be no odour from the culture to offend even the most sensitive of nostrils.

One word of warning. Never keep microworm cultures in tightly stoppered containers otherwise an explosion can occur (other than the verbal kind usually associated with fishrooms). These cultures always contain a little yeast which ferments the culture medium to produce carbon dioxide.

* * *

Last month I mentioned insurance of fish shows against losses due to bad weather. Most British aquatic events are, of course, held under cover.

But getting the crowd into the open, where possible, after benching seems a good idea as witnessed at one aquatic show I visited in the States. Here they had laid on activities in a nearby park, ranging from competitive games for the active to deckchairs for those who wished merely to lie in the sun and wonder where they were going to put that Best In Show Trophy they dreamed they had won.

But that was America; you cannot risk that with our inclement British weather! That apparently is where that bad weather insurance would come in handy.

Many New World clubs take out insurance on their equipment as well. An action that could well be copied over here. Recently one London club lost all its belongings when a fire gutted their H.Q. It is no good some saying it cannot happen to us—it has!

* * *

Having been around fishkeeping for so long and being privileged to have known so many wonderful people, the law of averages decreed that I should also be responsible

THE hobby is still booming over there! Figures just published reveal that the number of retail pet stores in the Americas has risen from 4,024 in 1964, when the last census was taken, to 6,804 last year.

To avoid the smoke- and exhaust-choked jungles of concrete and steel, more and more folk are moving their residences out into the country. Swapping the apartment for the semi-detached, they now find themselves the owners of a sizeable 'back yard' and with swimming pools being old hat, more and more citizens are turning to water gardening with a result the aquatic trade is enjoying increased sales. With fibre glass and plastic ready-made pools, the task has been simplified.

When the pools are stocked with fish the short-finned goldfish takes pride of place but the koi are also selling well, despite the high prices. With the winner of last year's koi exhibition in Japan selling for 20,000 dollars (about £8,000) it is a good job these fish are reputed to live upwards of 20 years!

And talking about Japan, some time back we told you about this country's more than passing interest in aquatics. Now a company from the Land of the Rising Sun has just placed the largest order ever for fish with a Florida breeder. Worth some 12,500 dollars, the shipment was despatched to Tokyo from the firm's Los Angeles warehouse.

* * *

Having savoured the delights of eating fish and chips from a newspaper, a receptacle that also provided unlimited reading, I never cease to wonder at the most unlikely places we can enjoy the printed word. What do-it-yourself decora-

Continued on page 245

A Mixed-up Breeder

Horaichthys setnai

By STEVE FORSTER

DURING a recent visit to Germany, I took the opportunity of visiting an aquatic store in Hanover and, as my personal fetish is for cichlids, I was delighted to see some of the more unusual Malawi cichlids on view. Most of the species seen in Britain were displayed but there were others which I had never seen before. *Gobiocromis*, *Simoichromis*, *Labiocromis* and *Cyathocromis* were some of the names which adorned the tanks. I had noted from the prices shown for other species that German aquarists pay much more for stock than we do in this country, but even so I was totally unprepared for the prices quoted for these specimen cichlids. They ranged from £25 to £115 per pair, which is a far cry from the usual £2 worth of assorted fishes which many beginners purchase in this country!

Having been sadly deflated by the high cost of the cichlids I had another look around the shop to see if I could buy something without being declared bankrupt. Many of the tanks contained beautiful fancy livebearers, including some exotically finned platys at £6 per trio. I eventually came upon a small tank which housed a number of small transparent fish, which all looked to be in anything but the best of health. I was assured, however, that this species, *Horaichthys setnai*, was quite well and the condition of the fish quite normal.

I was a bit sceptical of this assurance as many of the fish had huge gonopodiums which seemed to be bent; the females had stunted ventral fins and in some of the specimens one of these fins was missing altogether. The proprietor, on hearing my doubts, gave me a sheet printed in German, which, he explained, had been copied from an American publication. A colleague from the German division of my company was with me, and although he is not a fishkeeper, he did translate the sheet and confirmed that the supposed anatomical peculiarities were quite normal.

Although I still had some suspicions about being the victim of a fiendish Teutonic plot, the price of the fish was quite reasonable (for Germany) being 3DM, approximately 6s., so I bought three pairs. When I saw the packaging of my fish I began to appreciate why the costs of fish in Germany are relatively high. The fish were placed in a double bag, which was then filled with oxygen and then heat-sealed in a small device like a soldering iron. The plastic bag was then inserted in a styrofoam container and the whole package was presented to me in an insulated carrier bag. With this type of protection the fish could withstand many hours of flight delays without any mishaps.

Before leaving the store I enquired about the water conditions for *H. setnai* and I was advised that in their natural habitat around Bombay they were found in brackish waters. On returning home I added a non-iodised salt solution to an already prepared aquarium.

After allowing the fish to settle down in their new surroundings one of the first things I learned about these fish was that they did not care for dried foods and only started to feed when daphnia was offered. *H. setnai* have small upturned mouths and they could only cope with the smaller daphnia, the larger ones being ignored completely.

The specimens I had obtained were supposedly fully mature, although they were only 1 inch in length. Coloration was non-existent, except for a peppering of tiny black dots over the transparent body. When viewed against a back light the internal organs could be seen, especially just after the fish had eaten.

This species of fish seems to have suffered from extremely bad evolution as in addition to the gonopodium and ventral fin peculiarities already mentioned the dorsal fin is so far along the back that it almost touches the tail fin. The gonopodium of the males is approximately half of the total body length and is formed from the first six rays of the anal fin. When viewed from above the bend in the gonopodium can be clearly seen. Probably because of the shape of the sex organ the males always approach from the female's left when making genital contact.

In the next month I discovered that brine shrimp were the most suitable food for these fish, that they showed instant discomfort when placed in fresh water and that, most significantly, they were reproducing, as some small fry were found in a corner of the aquarium. These fry were completely colourless and showed no signs of the black dots. The presence of the fry puzzled me for, although I had seen mating behaviour, I had not seen any gravid spots on the females. The first fry died within hours of being transferred to a raising tank, probably because the water chemistry was somewhat different. The most surprising discovery concerning *H. setnai* was made a few days later after a partial water change. One of the females was fussing around in a plant thicket and I saw what I thought to be a fungal growth in her anal region. Closer examination showed her rubbing the 'growth' against the plants, and after two or three of her attempts it came loose and adhered to the plant. A few minutes later another 'growth' appeared and again this was deposited amongst the vegetation. With a magnifying glass I counted 13 of these small round objects, which looked like minute powder puffs, and I then realised that although the male sported a huge gonopodium, his partner was laying eggs and there was no attempt from any male at fertilisation. Twenty-one eggs were laid in half an hour but on inspecting the plant thicker 8 hours later another 14 were counted.

I removed one piece of the plant, on which there were four of the eggs, and placed it in a beaker filled with

water from the aquarium. The beaker was then secured in an old breeding trap and hung in the tank. The eggs were the size of millet seed, transparent and covered with hair-like protrusions.

Half the water in the beaker was changed daily but after 5 days I gave up hope of any hatching, although it was impossible to tell if the eggs had developed fungus as they had looked as if covered with fungus when they were laid.

On the tenth day I could see the form of the alevins inside the eggs in the beaker but those in the tank still showed no signs of development. However, 2 days later these eggs also showed embryonic formation and I began to wonder just what type of fish *H. setnai* were. Physically the males looked like deformed poeciliids, the females deposited eggs in a unique fashion and the eggs themselves showed the development characteristics of killifish.

The eggs in the beaker hatched on the seventeenth

day and those in the tank on the twentieth day; this difference was also unexplainable as the temperatures in both locations were identical. The fry seemed to be free-swimming immediately and presumably used up the yolk sac during their prolonged formation within the eggs.

As the mouths of the parents were small, those of the fry must be minute and many of them died within 2 days due to my inability to feed them sufficient quantities of the correct food. Five of them survived and maintained a good growth rate on newly hatched San Francisco brine shrimp.

The females proved to have the capability of storing sperm for the fertilisation of the eggs, as they continued to lay fertile eggs after the males had died. Four of the original adults died after 5 months, none of them showing signs of injury or disease, and although I do not know how old they were when I bought them in Germany, I would think that as a species *H. setnai* are not very long lived.

THE AQUARIUM CATFISHES—17

Some African Cool Cats

Family Amphiliidae

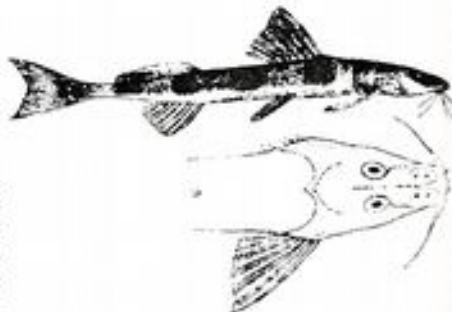
By BRAZ WALKER

THE African family Amphiliidae are rather slender, flattened catfishes of small size and rather strange appearance, with the largest of the several species (primarily *Amphilisa*) apparently reaching little more than 9 or 10 inches and most remaining considerably smaller. They are ordinarily found in clear, fast-moving waters which are rich in oxygen.

Amphiliids can apparently withstand lower temperatures than most of Africa's freshwater fishes, often being found in some of the highland streams into which species of trout have been successfully introduced. Since with the exception of the Mexican trout, *Salmo nelsoni*, few salmonids can exist and much less become established in any waters approaching "tropical" temperatures, the fact that amphiliids are in their company indicates at least a tolerance to cold by the small cats, and perhaps even a preference for cooler waters. As a matter of fact they seem to provide a food source for the trout since there are usually far fewer amphiliids present where there are a number of large trout than in adjacent waters.

The Amphiliidae are decidedly loach-like in most cases, not only in their actions but also in appearance and choice of habitat. The eyes are usually located in a rather top-side position on the head, as indicated in the name of one species, *Amphilisa srasocopus* (*srasocopus*—looking heavenward).

Another similarity which is quite noticeable is that of



A typical amphiliid: *Amphilisa ogustifrons*. The illustrations are of type specimens depicted in Boulenger's FRESH-WATER FISHES OF AFRICA and show side view and view of head from above.

certain of the Amphiliidae and the South American family Trichomycteridae. As in the foregoing example, one instance of this likeness is noted in the amphiliid name *Parasymphis trichomycteroides*. It is coincidental that both families are found at higher altitudes and in cooler waters than most other native fishes of the continents where they are found.

Although several amphiliids are rather attractive, these fishes are seldom, if ever, imported for the aquarium hobby. While reasons for this are not known, it is possible that their oxygen requirements are too high to allow them to be shipped well. It is also possible that they seldom occur in the more promising collecting areas or may be difficult to capture. Their inclusion in this series is based on their attractiveness to the collector, small size and potential as aquarium fishes.

This Rivulid is a Jumper



Characteristic colour pattern of the male

Rivulus holmiae (Eigenmann)

By RUDOLPH ZUKAL

Photographs by the author

Translated by F. MARSH

IN the fishkeeping hobby today many more advanced aquarists like to specialise in certain species and groups of fishes and one such group is that of the egg-laying toothcarps (Cyprinodontidae), to which our subject of this article belongs. Although brought to Europe from Guyana in 1956 and although suitable conditions for it to breed can be provided easily enough, the fish is not particularly well known and is not often found in the aquarist's tank.

The body of this *Rivulus* is long but powerful and thick-set, and it can reach a size of up to 4 in. The background colour is brown overlaid with a greenish, blueish sheen; the underneath of the fish is brighter and the belly white. Rows of red dots cover the body from the pectorals to the caudal peduncle. The black eye is picked out with a gold ring. Sex differences are easily recognised in the adult fish. The male's caudal fin is blue-black, bordered above and below with orange. The female's tailfin is blackish to the root, but not so dark as the male's and the fin rays are a brown-red.

I would recommend that *Rivulus holmiae* be kept at a temperature of at least 72°F (22°C) and, because of their size, preferably in a fairly long tank. They are quite shy fish, too, and the tank should be well planted with some floating plants on the surface. Normal tapwater can be used as long as it is only moderately hard. With plentiful feeding they are peaceful tank inhabitants and can be kept together with similarly peaceful, though not too small, companions.

I had to exercise a good deal of patience to get the photographs of this species because of the fish's shyness.



Shortly before the actual spawning the male pushes the female into the area selected; here the leaves of water plants have been chosen

One very important point to remember is that they are expert jumpers and the tank top must be covered with a thick sheet of glass. I have had some experience of this characteristic of theirs. In 1966 I put six of these Guyanian fishes into a newly acquired aquarium, only to find the tank empty next day. All the fish had leapt out through a gap only $\frac{1}{4}$ in. wide, and I found them, all unfortunately already dried up, 15 yards away from the tank by the door leading on to a balcony.

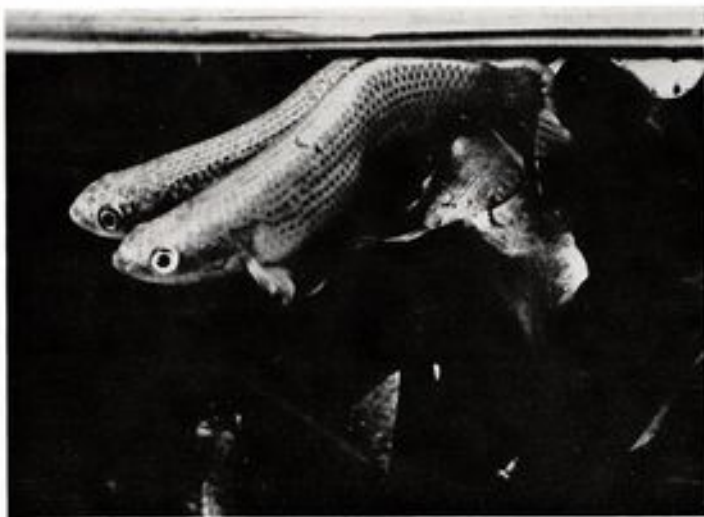
I imagine that the fish had leapt out during the night and then jumped towards the light that was coming through the balcony door.

The experience made me wonder whether these fish can move over dry ground in their natural habitat? I believe this must be so; they do, after all, like most kinds of egg-laying toothcarps, live in little ponds that often dry up completely and their strong instinct of self-preservation may well give them the strength to move themselves over-



Spawning also takes place on the aquarium bottom. At the moment of egg-laying the bodies of the pair are twisted into an S form, seen clearly in this picture

Sometimes spawning takes place at the water surface. Again the pair here show the sinuous body movement typical of the moment of egg-laying.



land towards other waters. Although I have known many other types of fish (such as livebearers) to spring out of tanks, I have found them all dried up in the vicinity of the tank itself and never at such a distance from it.

When the fish are in a tank by themselves it is possible to collect the eggs, when they have been laid, with a dip tube and transfer them to a small tank for hatching. As a rule, for breeding them I use a medium-sized or even smallish all-glass tank,

with a few inches depth of normal tapwater at a temperature of 79°F (26°C) and planted with plenty of fine-leaved plants. The female lays about 100 individual eggs in 24 hours—they are large (about 2 mm), light-coloured and hang to the plants by tiny threads. The parents will mostly ignore them. The brood hatches after 10-14 days, and when the fry are free-swimming they keep to the upper layers of the water. Rearing the young *R. holmiae* is not difficult.

Transatlantic Topics

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for writing so many obituaries to the famous figures in the hobby.

Writing about the death of anyone is difficult and it isn't made the easier when that person had been a good friend, but none gave me such a nudge in the heart or a strange feeling in my throat than the news of the tragic death in a road accident of Tina Mann. She died in a driving misadventure on a busy highway outside of Miami and it had a special effect on yours truly because in a recent exchange of correspondence with Tina she had mentioned her intended trip and had made light of the forecasted weather: 'Whoever heard of such in Florida at this time of year', she had joked.

Tina Mann was an amateur

squarist well known in professional circles. Vice-president of the Aquarium Society of Broward County, she was also editor of *THE TRADER* magazine of the Florida Tropical Fish Industries, a body not unknown to readers of *T.T.*

She closed her last letter to me with: 'this will be in haste as it is now 2 a.m. and I have some questions I would like your opinion on. No need to rush the replies as I am off on that trip tomorrow.'

Those questions were on how we could further cement relationships between the hobbyists of our two countries. A fitting epitaph for a lady whose heart encompassed the whole world of squaristics.

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An old Roman saying goes: 'There is always something new out of Africa', and just at the moment cichlid lovers would heartily agree; but these fishes also hail from South America and if your tastes run to them you will be interested in a 47 page report on their ecology and breeding behaviour by R. H. Lowe-McConnell ('The Cichlid Fishes of Guyana, South America', *Zool. J. Linn. Soc.* Vol. 43, 255-302).

One of the species she discusses is *Cichlasoma bimaculatus*, a name which, according to Dr Robert Goldstein, is merely a junior synonym for the porthole acara, *Aequidens portalegrensis*. Bob states that the differences between the *Cichlasoma* and the *Aequidens* are very slight.



GUPPY

World

WITH the intention of improving the position at least with regard to guppies, the Standards Committee, after due consideration—backed up by 6 months' trial at monthly and other shows and with the full backing of their judges—unanimously adopted a new method of pointing.

That was how, in 1955, the old G.B.S. officially announced to the aquarium world their adoption of the 'five twenties' system for pointing guppies. The arithmetic of this method has now virtually been adopted in one form or another throughout the world and has stood the test of almost two decades.

I say almost because though this system is still regarded as a 'sacred cow' by some judges there are many others who are pressing for reform. One suggestion under consideration is to change the 5 x 20 to a 5 x 100, the extra points permitting more accurate assessment. Total marks awarded would then be totalled and divided by five to give a result out of 100 as at present.

When we come to the matter of adjudication in any fish show, those of us who are asked to officiate often find we run badly aground on the rock of practicality. There is always the temptation to use the present 20 points allocated to condition and deportment as an easy way of breaking a tie (especially when a major prize is at stake). When questioned afterwards about our decisions it is so often used as an excuse for genuine mistakes in adjudication. Being human, we all must face this at some time or another.

Are we satisfied with the present system or can one of our readers suggest a better method? We are all listening, the ghost of King Solomon included!

Although very few close-up photographs exist of the late Paul Hahnel's guppy tanks, few showing detail, the 'Father of the Fancy Guppy' was never loth to share his methods with anyone interested. We know what he did down to the last piece of gravel.

Ever concerned about uneaten food finding its way into the gravel, Paul devised his own brand of food trap or guard. A piece of glass (or any non-toxic material), 3 inches deep, was cut to fit the inside length of the aquarium, and held in place at

By PETER UNWIN

the front of the base of the tank by two smaller pieces along each side, forming a 'rectangular U-shaped trench' there. Behind the long piece of glass was placed a sub-gravel filter covered with gravel to a depth of 3 inches. It was in this compost that he grew his soldiers of water sprite.

With floating feeding rings anchored above this trench any food sinking to the bottom of the tank was retained in the trench, easily visible to the aquarist and easy to remove by siphoning.

If you don't wish to go to all this trouble, an empty pot or plastic food container can be buried up to its neck in the gravel immediately below the feeding ring.

'Snout' is the criminal's term for tobacco, but it takes a guppy to develop one. Along with 'bull chested' we have two terms that often figure in the vocabulary of the guppyatic.

Developing a snout means that the fish displays a break or droop in its top body outline between the nose

and nape. A bull chest is a break in the lower outline, twist chin and belly, not to be confused with certain pathological symptoms that cause the whole of the body to swell up.

These two faults are more often seen in the female of the species and can cost you dearly in points at exhibitions.

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Do you think you have the makings of a good guppy judge? Those privileged to wear that coveted title do so only after having passed written, practical and oral examinations. In one group it even includes an eyesight test—and why not?

To test your general knowledge of guppies here are a few questions taken from recent examinations set by a specialist body. Without peeping at the answers at the foot of the column see how you would have fared.

(1) What is the basic body colour of a gold guppy?

(2) State the most important thing to look for when judging a breeder's entry.

(3) If the fins of the grey female should be clear how do you allocate points for colour?

(4) How long should a standard male guppy be from the tip of his nose to the caudal peduncle?

(5) What do the Germans and the Americans call our 'delta' variety of male fancy guppy?

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Though it cannot be denied that we have many excellent lecturers on the art of keeping and breeding fancy guppies, nothing beats a good all-round, free-for-all debate on the subject, better still a guppy quiz.

Such an event is to take place at The Glebe Farm Community Centre on Sunday, 22nd November, when the Birmingham Section of the F.G.A. play host to the Association. Kick-off is at 3 p.m.; the group is holding a quiz competition to fund

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Answers to would-be experts:

(1) Buttercup (British Standard Colour Code no. 53); (2) mandching; (3) full marks for complete absence of any colour; (4) 1½ in.; (5) triangular.



Personal COMMENT

by
ARPEE

CORRESPONDENTS are thanked for their suggestions as to what I should do with my 3-footer which, as you may recall, has to be fitted in at floor level in a brackish position. I regret having to reject Mr King's idea that I should keep terrapins and caimans since, as he points out, they have the most engaging personalities and would have adapted well. I turn this notion aside however because I am restricting the accommodation to fish and, further, I might get so smitten with a terrapin that all the other fishes I keep would have to go.

Mr Luffhouse writes off the idea of a ground floor tank as a dead loss, and although I completely agree otherwise with the comments in his most constructive letter, I rather question the validity of this particular point. It so happens that in my case his objections about draught, drippings from other tanks etc. are not applicable because the overall structure is boxed in and isolated and there is a form of separation from overspill from above. As to whether a ground level tank is not as attractive as others, I think this is something of a sweeping statement since a lot depends on the contents, the lighting and the situation of the tank in relation to one's normal viewing area within the room itself. Given that the tank isn't poked into a corner round which one has to project one's vision, and that its contents are sensibly disposed, isn't this the very situation in which one would normally view fish in the wild, and in which some of their most attractive features are seen to best advantage?

It is true that slightly below eye level is the optimum positioning for a tank, but I would rather have a tank a lot below eye level than a lot above it, as the undersides of fishes tend to be less interesting than their upper parts. Having considered the situation at length, and having come up the halfpence, I am very inclined to the notion of turning my 2 ft. brackish tank over to full marine conditions later this year, and to occupy my 3-footer with a few more brackish species. My notes elsewhere will, I hope, have encouraged some readers to try these semi-marine fishes for themselves. The very low maintenance liability and the simplicity of servicing (few worries about the need for siphons) just about tip the balance. The larger quarters will enable some of the fishes I have previously 'dwarfed' to grow on a little and to give some welcome to a tank of these dimensions.

In the meantime the problem remains with me whether marines are feasible for a fairly busy sort of day, and I wonder whether readers who have been faced with this part of the overall dilemma have managed to dispel the bogies normally associated with it. I absolutely refuse to believe the claims of some advertisers that marines are simplicity because we all know that that is

complete nonsense at present. On the other hand there are some fishkeepers who can kill anything except white spot within 24 hours!

I am personally inclined to the view that if you can secure a disease-free consignment of tropical marines and keep them for a week or so without trouble you can then probably count on keeping them in good shape for a very long time provided that you do not introduce any disease subsequently; the latter more often than not seems to stem from the addition of new inmates harbouring unseen perils. The silence of correspondents generally, however, gives me an uneasy feeling that there are a lot of people around licking their wounds. Perhaps they might feel better if they shared their troubles with others, through these columns.



Almost everybody has a pet scheme for keeping tubifex fresh. The soundest way, without doubt, is to leave it in a wide container with a large surface area of water and to allow a tap to drip or run into it at such a rate that a flow is maintained without fear of the worms washing away. For folks in flats or houses where such ideal arrangements cannot be made, recourse has to be to other methods. I have never quite come to terms with the device which can be fitted into the lavatory cistern, since although it is no doubt effective enough it has a certain irreverence which altogether detracts from its novelty so far as I am concerned.

There will be those who have no way of keeping the worms, other than in still water. This is the way I have to keep mine, and I find that the following method is quite satisfactory, save in the hottest spells. I use a clear plastic cake box, measuring about 12 in. square by 4 in. deep. I try to change the water twice a day, but it usually gets done only once. Before feeding the worms to the fish, I remove the 'ball' and thoroughly wash the container. Then I place the worms in it again and subject them to a thorough washing under the tap. After allowing the worms to re-unite (this takes only a few minutes) I then remove as many as are required for the next meal.

It is important to wash the container most thoroughly at least once a day, because if you leave it longer a slimy growth of algae will begin to form, and once this happens the whole of the worm mass begins to degenerate rapidly. An abrasive kitchen sponge (specially kept for this sole purpose!) is a good ally in ridding the container of the slime, so keep it handy—but away from your wife!



Many so-called animal lovers criticise the animal keeper or collector for alleged acts of cruelty. Foremost amongst their objections is the confinement of a wild creature within artificial surroundings and its subjection to overcrowding and unnatural sustenance. Under closer examination perhaps a few individual cases might support the views of the reformer, but on the whole the animal collector is an animal lover, too, and creatures in captivity more often than not enjoy an existence greatly more secure and tolerable than Nature itself allows. The more adept the aquarist becomes, the more likely

are his charges to display that roundness and glitter which spell out good health. Natural enemies are almost entirely absent, too, so the life span of most pet fish will tend to be longer than it would have been had natural conditions prevailed.

In these circumstances, given compatible water conditions, fish will breed and the aquarist will have to carry out strict selection processes to ensure that poor strains do not creep in, and malformed and undersized specimens have to be killed unmercifully. In Nature precisely this would have happened, and natural predators would have taken toll of a further high percentage of each batch. So far, so good: it is highly likely that one factor or another thins out the average breeder's successes to a level not so greatly in excess of what Nature would permit. At any rate no balances seem much out of true except, perhaps, in the guppy world.

With the increase of better and healthier specimens and their longevity, coupled with greater know-how on the part of the hobby, there arises the problem of what one does with old fish. In most collections fish come up against periodic checks, such as white spot attacks and the corresponding massive chemical attack on the parasite. This is too much for some old fish, and they take this opportunity of slipping out of existence. Others survive all hazards and one day reach a stage where they have fulfilled their function; they drop away beneath a rock and are not seen again. The less fortunate old timers develop some deformity or disability and this is where I find something of a difficulty. Mere disfigurement is no good reason to kill a fish which has graced the display for four or five years, and many who have kept disfigured fish will know that they can live for long

periods, apparently contentedly enough. When this is accompanied by obvious distress of some sort, I think that a quick death is the most dignified course of action, as visibly ailing fish are more often than not set upon by their companions and worried or nibbled to death.

It is not particularly easy to carry out a death sentence, as any aquarist knows, and I am always being surprised—and pleasantly so—by the reluctance of fellows in the hobby to effect the *coup de grâce*. They may cheerfully feed livebearer fry to their angels and chop worms up half the night, but the prospect of disposing of that old black neon with the curvature of the spine and swollen belly is utterly horrible, and a job to be deferred at all costs. If you are going to dispose of a fish, you must kill it, and kill it swiftly, so that any thought of flushing it down the lavatory is right out. I net any small fish which need killing and rapidly convey them to the nearby garden concrete path, on to which they are quickly tipped and trodden on. Nothing could be much quicker or more certain. Large fish are much more of a difficulty. By their very nature it always seems that they could somehow recover if only we gave them a little more time, but this is unfortunately usually a vain hope.

If you get a large and heavy grade plastic bag and net the fish into this with a minimum of water it will be found that if the neck of the bag is twisted to form a sort of handle and the whole thing smashed really hard down on to the ground, the deed will have been done quite effectively. Don't look at the bag again, though, if you are squeamish. Just put it quietly on the kitchen boiler and go out into the garden and do half an hour's good digging. The latter is optional, and the elderly are excused.

Guppy Types No. 4: The Deltail

If any one male variety can be said to have been responsible for the current popularity of the fancy guppy broadtail, then it is this variety. As the lyretail was to the early guppy breeders, the delta was to the past decade. The word derives from the fourth letter of the Greek alphabet (Δ) and means triangular.

Having many names—superbs, triangle and delta, this guppy first showed up in the stock of veil breeders during the late 1940s. No one gene is responsible for producing the delta, according to Albert J. Klee, who did considerable experimental breeding with this type. It derives from the combination of the double sword gene (*Ds*) and a number of other genes, foremost amongst these being the *Cp*, the gene responsible for those pigmented dorsal and caudal fins in the female. According to one prominent guppy authority



the best delta-producing females are those displaying a thickening of the upper and lower rays of their caudal fin.

The accurate origin of its name is lost but one story tells of a post-war International Show in Germany. So many entries were received classified by their owners as veiltails that the show authorities sorted out those guppies with the widest caudal fin and, because of their triangular shape, set up a new class and called them delta. The name stuck.

First printed standard for them was issued by the Fancy Guppy Association in 1961 and, apart from odd changes in the dorsal, it has changed very little since then. One point for the showman—both pointed and rounded corners to the caudal fin receive equal pointing on the bench. Standards length (including the tail) is just over 1½ in. (45 mm). American delta guppies can often be distinguished from the European varieties in that their dorsal fins are much longer and tend to become bulbous at the end.

The selection of future breeding males brings to mind a comment made to me in America by the late Paul Hahnel. 'Look for a long unbroken line that stretches behind the eye towards the base of the dorsal fin' he said. 'They make the best fish to sire future delta males.'

J.K.

Mbuna—Rift Valley Cichlids

By JIM KELLY



Photo:

B. KAHL

PRONOUNCED um-boo-na, this simple, five-letter word *mbuna* will be causing a great deal more excitement in the western world of aquarists. Already the keeping, cataloguing and breeding of the Rift Valley cichlids has caught the imagination of aquarists everywhere, and the followers of this fancy look like trailing the guppy fanciers!

What does the word mbuna mean? What exactly are the Rift Valley cichlids? As the longest river in the world, the seven mile-long Nile (Bahr-el-Nil) extends to the Sudd; at the place where it enters Uganda, we come to the first of a series of lakes spreading down the second largest continent. Here, eons ago, in a highly volcanic region, valleys were formed when the earth's crust cracked between two faults or rifts. They quickly filled with water and formed the deep, isolated, Rift Valley lakes.

Commencing with Lake Albert in the north, we find Edward, Kivu, Tanganyika and Malawi in that order. The last-named lake you probably know better under the old name of Nyasa. One of the first things Prime Minister Doctor Kamuzu Banda did on receiving Swaziland's Independence in 1964 was to change the name to Malawi.

In these five stretches of water, plus another, Lake Victoria, we have the most exciting bodies of water in the world. Exciting to the fishkeeper that is. Should you underestimate their size, a glance at the atlas will soon put you right. Even the smallest, Lake Edward, is 44 miles long and 32 miles wide! Lake Malawi is 31,000 square miles in area and 1,800 feet at its greatest depth.

The word *mbuna* is the native name meaning:

A popular species of Malawi cichlid is the one shown above—*Pseudotropheus aureatus*. This fish was among the first of these cichlids to come to the notice of aquarists in Britain.

'Cichlids of the rocky shore'. In this part of the world it includes such fish as *Cyathochromis*, *Cynotilapia*, *Genochromis*, *Glyphochromis*, *Haplochromis*, *Labetropheus*, *Labidochromis*, *Melanochromis*, *Petrotilapia*, *Pseudotropheus* and so on. Hardly any of these fishes are common to more than two of the lakes, the majority having distinctive communities.

Since Darwin's time the Galapagos Islands in the Pacific have held pride of place with the evolutionists as the perfect example of an 'isolated community' developing and adapting without outside influence. Now the scientists are casting interested eyes on the Rift Valley lakes where investigation has revealed that these 'isolated' communities of fish have displayed remarkable adaptation. Many developed from *Haplochromis* ancestors.

For our purpose, the fishes can be placed in two rough categories: those inhabiting the open waters such as the *Tilapia* species and the *mbuna*, hugging the shallower waters of the rocky shores and sandy beaches. Here are found the majority of the 'mouthbrooding' fishes. I use the latter word in preference to the more familiar 'mouthbreeder' because it describes their breeding habits much better.

The water in the lakes is alkaline and hard—pH

readings taken range from 7.6 to 8.6; it is also slightly salty. Successful breeders of the mbuna have recommended the addition of a little coarse salt to the breeding tank and a recent correspondent also suggested the addition of Epsom salts (magnesium sulphate) at the rate of half a teaspoon per gallon of aquarium water.

Unlike the familiar regular seasonal temperature cycles of our temperate zone lakes, where the temperature of the water is the same throughout during spring and autumn, in the African waters warmed by the strong, tropical sun the surface warm layer virtually floats on deeper, colder layers beneath a stagnant substrate with poisons such as hydrogen sulphide and marsh gas (methane). Here in the depths we find a sterile area; only above, in a depth of some 300 feet (100 metres), do we find sufficient oxygen to support life. Most of the fishes inhabit the top 100 feet.

In Lake Victoria are found six species of *Tilapia*: *esculenta*, *variabilis*, *zillia*, *nilotica*, *leucosticta* and *melanopleura*. Only the first two were original occupants of the lake. The others were introduced by man in 1951. *P. zillia* and *P. nilotica* hailing from North Africa, *P. leucosticta* from Lakes Albert, Edward and George and *P. melanopleura* brought north from South Africa.

In the late 1960s the water level of Victoria was the highest recorded this century and the rising level created swampy ground. In these shallow, warm waters, food chains flourished and the *Tilapia* gorged themselves and bred. Because the water temperature lacks a seasonal variance (it keeps to within 72-83°F), the fishes breed all the year round.

Lake Tanganyika contains the world's largest cichlid—*Boulengerochromis microlepis*, attaining a length of 31 inches and weighing up to 3½ pounds.

The *Pseudotropheus* species in Lake Malawi were amongst the first cichlids to become popular with the aquarist, despite their aggressive reputation. Fishkeepers soon learned that you could subdue this tendency by giving the fishes plenty of tank space plus suitable, cave-like places in which they could set up home or hide from an aggressor.

The trade did its best to supply the demand: single advertisements in PETFISH MONTHLY have listed no less than five different species of *Pseudotropheus* for sale.

The tremendous amount of variation in both colour

and body markings of these species has caused aquarium and traders no end of headaches when it came to accurate identification. *P. elongatus*, normally coloured an overall deep purple, may also display a series of vertical black bars along its body below the dorsal fin. *P. zebra*, given the common name of the blue Nyasa cichlid, has four distinct colour forms varying from white through to a beautiful blue, this colour being shared by both sexes. Like *P. elongatus*, they can sport stripes, spots or a complete absence of markings. Their appearance, as with that of other members of the cichlid family, can also be affected by the fish's spawning cycle. *P. auratus* has the young of each sex a yellow colour, but though the females keep this throughout their lives the males change to a brown-purple when fully grown.

It isn't only the colouring that varies, either. When we come to their natural eating habits we find them differing just as much. *Haplochromis* are plankton feeders, the *Lethrinops* and the *Labiocochromis* search for the tiny creatures inhabiting the algal mats, whereas two species, *L. fulleborni* and *P. tropheus*, browse on the algae itself. Fish with the most curious diet of all is the *Geryochromis*—these eat the scales they take from other fishes in the lakes.

Happily in captivity the mbuna have a catholic diet. Everything, algae, green peas, pieces of meat and fish, liver, brine shrimp, chopped earthworm and the large flake dried foods have been eaten with relish. Some of the vegetable eaters like to eat duckweed and the addition of this floating plant to the cichlid community is recommended.

Don't be frightened of trying these cichlids. In some cases even the experts are stumped and look to the amateur aquarist to provide vital information for the scientist. In the U.S.A. the American Cichlid Association, through the pages of its excellent magazine *AMERICAN BULLETIN* disseminates much about the Rift Valley fish. Those interested in joining the A.C.A. should contact: Guy D. Jordan, 6546 Celia Vista Drive, San Diego, California, 92115, U.S.A. As an honorary member I can honestly endorse their enthusiasm.

In this article we have only touched on a fraction of the wonderful things in store for those who keep the mbuna. The uncertainty makes it all the more exciting.

Guppy World

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out which of their Sections has the highest guppy I.Q. The prize for the brainiest is a beautiful silver cup with minor prizes for the individuals taking part.

The guppy lore and experience aired at gatherings such as these is tremendous and I feel that both the beginner and experienced aquarist alike could derive an awful lot of know-how and pleasure from such a meeting—to say nothing about the experts one will get a chance to chat with. And the fish . . .

The topic of whether a guppy parent should be removed immediately from the nursery tank, after giving birth to fry is ground that has been gone over so much in the past it is now rock hard.

Most of those in favour of removal have based their arguments on cannibalisation of the fry by the said adult guppy but a stronger argument, I feel, concerns feeding.

During the first few weeks of a guppy's life it is very important to make a constant supply of food

readily available to the babies. Should that first food be newly hatched shrimp, then the adult fish will quickly deplete the amount fed.

In removing a mother make quite sure she has expelled all her young, and handle her gently. Use a plastic bag or container in preference to a net.

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In guppy breeding as in all aspects of fishkeeping, we learn from the mistakes of others. Come to think of it, it is a good job we do because none of us lives long enough to make them all ourselves!

One Man's Marine Aquarium—I

Tropical Ocean in the Living Room?

If you visited The Aquarium Show 1969 you couldn't help but notice a stand in the bottom right-hand corner of the Hall which continually attracted a very large crowd of visitors. The stand was in fact the only one at the Show exhibiting tropical marines and it is safe to say that wherever a stock of these colorful beauties is exhibited they will prove such an attraction.

The seed of fascination was first sown in me when I saw the old film of Hans and Lotte Hass. The sight of a large shoal of brilliantly hued, streamlined fishes darting in and out of grotesque coral beds was an unforgettable experience. At that time I did not know a guppy from a goldfish but I was determined that so soon as it was practical I would bring a little of that tropical ocean into my living room, and despite numerous 'freshwater fanatics' trying to deter me, to a certain extent my ambition has been achieved.

To date I have managed to build up a happy community of saltwater beauties which have perfectly adapted themselves to tank life. Furthermore, despite the fact that none of my marines cost less than 25s. each, detailed calculations show that the total outlay over a year was no more than for my freshwater tank of the same dimensions.

The keeping of marine tropicals is a comparatively new branch of hobbying and consequently a number of misconceptions have arisen, many I suspect from freshwater experts who fear the popularity of their own branch of the hobby may suffer, though I personally think this is totally unlikely. Just about any freshwater hobbyist who does not 'go marine' and almost without exception he will reply 'I'd very much like to but could not afford it', or 'Marines are too difficult to keep and feed'.

By RON TURNBULL

On the problem of cost my personal experience has shown that a 25 gallons tank set up with freshwater tropicals will probably contain about 30 fishes. A marine tank of the same capacity, however, looks complete with only a dozen fishes. Because of their vivid colours, marines are much more eye-catching and, moreover, because to date no one has discovered any marine plants that will grow readily in artificial conditions, marine fish have no brightly coloured foliage to compete with.

I started marine fishkeeping with a 25 gallons tank into which I put the following community: a number of clown fish (one *Amphiprion percula*, one *Amphiprion ephippium* (tomato clown) and two *Amphiprion polymnus*), a family of fluorescent orange and white specimens; two blue demoiselle (*Abudefduf coerulesus*), one of the smallest and most colourful of tropical marines; two *Dascyllus trimaculatus* (dominoes), a contrasting jet-black fish looking as if an artist has flicked three white paint spots on him; two honey gregorys, golden-lemon-coloured fish so full of character.

My marine tank was placed on a double-tiered stand below my freshwater tank which contained, incidentally, some fine red-tailed black sharks, prize-winning *thomasi* and

numerous other eye-catching species; without exception visitors always remark first on the marines.

Other so-called problems put forward in the case against marines are numerous and nearly all ill-founded. Thanks to the genius of our chemists, biologists and other learned men tanks resistant to saltwater corrosion are now readily available, artificial salts provide all the elements required to obtain ideal water conditions and improved transport facilities are rapidly cutting the costs of shipping. Personal experience has proved that marine tropicals, especially the more common species, are not in the least difficult to feed.

Moreover, for the more adventurous hobbyist, the way is wide open for serious study and experiment. To date successful reproduction of marine fishes in captivity has been, to say the least, spasmodic. For the hobbyist who finally manages regularly to spawn a pair of clown or dominoes a fortune awaits. For the hobbyist whose interests lie more in the flora than fauna there is a tremendous field of work ahead. Unfortunately at the moment no one has met with any success in keeping the more advanced plant life in the controlled conditions of a saltwater aquarium. But it will be done.

In my second article I will be dealing with the choosing and setting up of a marine tank, and discussing choice of equipment, aquarium decoration, etc.

Avoiding Condensation

Please could you suggest a method, in simple terms, of avoiding condensation inside a tank which I hope to set up with a low waterline and tropical temperature?

The only method that can keep water condensation above a tank of

warm water to the minimum is by providing adequate ventilation or by keeping the air moving with a stream from a blower. With some gaps present in the cover, it should be possible to keep condensation to a minimum except when the temperature around the outside of the tank is very low.

The AQUARIUM SHOW



**Thursday 29th Oct.
to Sunday 1st Nov.
at the Royal Horticultural Society Old Hall,
London S.W.1**

• A VERY fully display of aquatics is promised at The AQUARIUM SHOW in London this month. New features in the competitive fish classes are four extra classes—for breeders (egg layers, guppies and other livebearers) and for dwarf cichlids. This year competitors can enter as many fishes as they wish in any class. Show secretary Mr Gerry Greenhalf expects to be able to stage a good number of show fishes for the scrutiny of F.B.A.S. and F.G.A. Judges Mr B. Baker, Mr C. A. T. Brown, Mr G. Goodall, Mr E. R. Nicoll, Mr K. Nutt and Mr J. Stillwell. Class winners will receive **PETFISH MONTHLY** awards: a cup for firsts, plaques for seconds, medals for thirds and award ribbons for fourths, as well as AQUARIUM SHOW prize cards. The list of special trophies is longer this year: the F.B.A.S. Council Trophy is offered for the best in the breeders' classes, there is an F.G.A. Shield for the best guppy female and a Trophy Trophy (donated by Trophy Products). The

exhibitor gaining the most points according to award cards will hold The Pet Library Points Cup. The American manufacturers of Longlife products are the donors of a Plaque for best loach and a Medal for best coldwater fish (other than goldfish).

• In the ever popular Society Tableaux section (which includes club furnished aquaria) the entrants are competing for cash awards (£20 first, £15 second, £10 third) and the winning society will also hold for the year the magnificent Calgary Trophy presented by the Calgary Aquarium Society of Canada.

• Opening times of the show are listed on page 235 of this issue. Parties from schools or societies can obtain advance sale concessionary tickets (orders for 12 or more: 25 6d for adults, 15 3d for children; orders with remittance to show offices). Party rates are not available to unbooked parties arriving during the course of the Show.

What's New?

For the Marinist

THE marine enthusiast, and the freshwater fishkeeper who likes the decorative effect of **Sea Fans** and **Sea Trees** in the aquarium, will be pleased to learn that Fantasy Pet Products of 13 Nutley Lane, Reigate, Surrey, are distributing these natural formations from coral reefs in quantity so there should be many more about in the retail shops. In fact, the fan or tree, when it is finally ready for use in the aquarium, is the skeleton of the animal from

which the calcareous skin has been peeled off by a curing process that does not require the use of chemicals. For ease of arrangement in the tank, the fans can be mounted on rocks or stones with the use of silicone sealant. The slender tracery can even be bent into preferred shapes by soaking in hot water. According to size these will be retailing from about 5s to 10s.

Instant and Constant

INSTANT Wardleyburgers are the latest additions to our fishes' diet. The manufacturers, the American firm of Wardley's foods, have based their research on the fact that in its natural surroundings a fish is feeding continuously. In the aquarium the prospect of pollution has had to take precedence over the desirability of continual feeding, since uncast food would soon provide a fine source of nutrients for bacteria. Now Wardley's have produced a food concentrate to be

mixed with water to form a cohesive gel, which makes continual feeding available for a 24-hour period and which, the makers claim, cannot pollute the water. There is an **Instant Wardleyburger** for goldfish, one for tropical fish and an **Instant Wardleyburger Shrimp Cocktail** for good measure. To all have been added multivitamins and a flavour enhancer. The price of the packets ranges from 5s 9d to 9s 3d.

Beginner's Booklet

HOW to Enjoy Being an Aquarist is an interesting title for a booklet for the beginner produced by **King British Aquarium Accessories Co.** and written by Keith Barnard and Gordon Holmes. In 28 illustrated pages the authors discuss suitable tropical fishes and their feeding, types of aquaria and equipment and how to set up the tank. The booklet costs 2s 5d and is available through aquarists' shops.

BREEDER'S NOTEBOOK

The Giant Danio

(*Danio malabaricus*)

THIS streamlined beauty, built for action and speed, certainly needs roomy quarters and 3 ft.- and 4 ft.-long tanks. In my experience this is one of the fastest fish on the move and it is also an expert jumper. Over the years I have had my share of them flipping and flopping on the fish house floor when the covers have been removed for feeding. The speed at which they move and jump is quite fantastic and before you can bat an eyelid they have leapt into the air and are bouncing around on the floor removing their protective coat of slime (sea salt or methylene blue in the water afterwards will prevent the damage from becoming lethal). A good covering of surface plants such as Indian ferns, water lettuce and *Riccia* will help to keep them down in the aquarium.

This species reaches a maximum of about 5 in. in length but in the aquarium 4-4½ in. would be a good size. A good male can attain about ½ in. in depth of body and females, when in roe, 1-1½ in. The body colour is a velvety blue on which long narrow yellow bands show, running through the centre from the caudal fin to peter out in the head region. Just behind the opercula a few small vertical bars can be seen and on the female as a rule these bars appear broken. She is also slightly paler on the body than her mate. During the mating period and then particularly on the male the fins are tinted red, and when he is spawning the colour on his anal fin intensifies to a warm red. It is also noticeable that the male has a protruding bottom jaw, similar to that often seen in mollies.

The giant danio is a very hardy fish and can endure temperatures varying from 65° to 85°F (18-30°C) while remaining active and feeding well. It likes a fair amount of light and a little sun will be appreciated. Feeding is no problem either, for this species will take any live foods with enthusiasm and all dried foods that are offered to it, including snacks between meals of tasty roots or plants that take its fancy and I have seen it take small quantities of green algae and duckweed.

To get them into breeding condition it is advisable to put them on a diet consisting of a good range of live foods, which should include white worms, tubifex, small earthworms, blood worms, ghost larvae and good sized *Daphnia* (red, if possible). After a few weeks on this diet they reach perfect condition and spawning is then no problem as they are ready breeders.

If possible the breeding tank should be 3 ft. by 15 in. by 12 in., and certainly no smaller than 2 ft. by 12 in. by 12 in., as, because of their speed and flexibility in turning in any direction, giant danios require a lot of space. I used a 3 ft. by 15 in. by 12 in. tank that had been well scrubbed and cleaned. I filled it to a depth of 6 in. with aged, filtered tank water and then added a further 2 in. of fresh tap water. No pH or DH tests were made as it is really not necessary.

After the water had stood in the tank for a few days I added a 2 in. layer of large pebbles and marbles were spread all over the base. Over the top of the pebbles in the centre of the tank I spread eight green plastic pan scourers that had been opened out, and then over the top a large thick mat of boiled and rinsed coconut fibre. This left a 3 in. space for the fish to chase in at high speed, the full length of the tank. Round the sides I added small bunches of *Cabomba*, *Bacopa* and '*Eloidea densa*' with a large Indian fern covering three parts of the water surface. The temperature fluctuated from 74° to 78°F (23-25°C). Since they are a very excitable species, I put the breeding pair in at night to allow them to settle into their new home calmly.

Next morning they started to spawn. The male was stationed at one end of the tank trembling near the back, while the female paraded up and down at the front at a good pace, now and again darting along the back, circling the male and pushing and nudging and

By J. LEE

at times apparently butting him from behind. This behaviour went on for a long time. Then the male, with his fins outstretched, started to circle the female. Round and round they went at an amazing speed. Then, with a quick acceleration they seemed to go mad, racing up and down the full length of the tank faster than the eye could follow. Because of the speed I could not see any eggs drop but they were scattered well.

The coconut fibre caught a large amount of them; others were lodged in the pan scourers and amongst the pebbles and marbles well out of sight. The eggs are small and transparent. When the female was spent both fish were taken out. They were a lot easier to catch by now and when they were returned to their original tank they were much paler and remained motionless, except for little quick jerky movements of their fins, for about an hour.

The fry hatch in about 48 hours and are small like little splinters on the glass and plants. Baby *malabaricus* show a little colour after 2 and 3 days when they become free-swimming. They were started off on *Infusoria*, the yolk of an egg squeezed through a cheese muslin and Liquifry no. 2. After a few days they were soon taking brine shrimps and micro worms. Then after a week I fed them on some prepared baby cereals such as Bemax, Farex, Farlene and Groats, sieved through a very fine mesh. 200 fish were reared from the spawning. With regular changes of water giant danios grow fairly rapidly and soon begin to look like their parents in colour and marking.

When the young fish were about 1½ in. long and were

taking Grindal worms, small white worms and sifted *Daphnia* they were then transferred to a large tank, 5 ft. 10 in. by 15 in. by 18 in., with a 12 in. depth of old water mixed with fresh tap water. Not too many plants were introduced—just four 3 in. flowerpots containing different species of cryptocorynes and a very large Amazon sword plant dominating the centre. The young danios seemed to love this set-up. A week after they had settled down their growth rate was amazing and with a good liberal supply of live and dried foods they seemed

to grow in leaps and bounds. It was a wonderful sight to see 200 or so of these beauties moving in a mass shoal at a fast speed, using every inch of the 6 ft. tank.

Out of this batch I went on to rear some wonderful specimens that took one or two prizes from the open shows. Some of the males, when they reached maturity, were 5 in. in length. There is no doubt that large tanks are needed to get the best results with this species as it is a fish that needs to stretch out to its full length and to be free to move at great speeds unhindered.

Pipe Fish in Brackish Water



The motionless pose of the pipe fish in mid-water is deceptive. Suddenly it can shoot forward at speed to seize its prey.

Syngnathus pulchellus Boulenger

By J. ELIAS

Photographs by R. ZUKAL

A SHORT time ago our permanent Aquarium Exhibition at Brno Zoo received a new addition to the freshwater exhibits, and the newcomer's unusual body shape and interesting behaviour at once aroused the interest of our visitors. The fish belongs to the Syngnathidae family of pipe fishes, which are widely distributed throughout the world. In the literature, both the fresh and brackish waters of the Congo are given as the home of *Syngnathus pulchellus*.

Our pipe fish at the Brno Exhibition is almost

A closer view of the head of the pipe fish reveals the curious structure of the jaws, with their upturned ends



8 in. long. Its body narrows in the direction of the caudal fin and is decorated with a faint but regular stripe design on a light-brown background though the colour of the body is darker in front of the very tiny tail fin. The dorsal fin is curved and shows a division in the middle but without any clear differentiation of the rays. The pectoral fins are also curved and the movements of these fins and of the dorsal can be compared with the movements of fans used in olden days. The anal and ventral fins are missing. The pipe fish moves forward very slowly and cautiously. The shape of its head is just like that of an alligator in miniature. The eyes are pushed up towards the middle of the head and their manoeuvrability makes for excellent vision. The jaws come together into a long tubular snout, or beak, and each is bent upwards at the end like a broken-ended pipe.

We keep our fish in a temperature of 72-76°F (22-24°C) in water that is not soft; I would recommend the addition of some salt: one heaped teaspoonful of sea-salt or cooking salt per gallon of water is enough (the salt must not contain iodine, of course). Pipe fish should be kept on their own. They move about very little and their whole character is that of a static fish. They eat only very small live food and particularly thrive on newly born livebearer fry.

These are most delightful fish to watch. While actively searching for food, the pipe fish will swim furtively under its prey, less than $\frac{1}{2}$ in. away with its snout in front of or under the prey. It stays quite still for a while considering and then suddenly springs into life. The end of the snout is

at the prey, sucks it in, and then the pipe fish is back in its original position. This all takes place in a split second, so quickly that the naked eye cannot take in every detail. It seems to me that the pipe fish, when on the lookout for prey, not only observes its movement but also takes account of its size. Pipe fish can only take in food that can be sucked in entire and I have never seen a pipe fish choose an object which it was unable to suck in.

If the tank is planted with such plants as *vallisneria* then the sight of the pipe fish is quite lost because of its linear body shape and lack of movement. So it is much better to plant with Amazon sword plants so that the fish stand out better against the leaves.

Although these fish were first described in 1915, they are still not often kept and are, of course, not for everyone. They have been propagated but not yet reared, as is too often the case with brackish water fishes. So we must just hope that more and lower-priced consignments will reach us in the future.

THIS month is the month of The AQUARIUM SHOW in London. If you are a society member—it is still not too late for your secretary to arrange a party visit to the Royal Horticultural Society Old Hall, Vincent Square, London S.W.1. The dates are Thursday 29th October to Sunday 1st November. *PETFISH MONTHLY* hopes that readers will bring their families to see this extra special event and that they will also tell their friends about it. Full details are given on pages 235 and 252 of this issue and further information will gladly be supplied by the offices of *PFS*.

Readers' Queries Answered



Bad Tank Conditions

Two months ago I set up a community tank (24 in. by 15 in. by 15 in.) stocked with three B. partipentazona, six neons, one mollie, one guppy, two platys, one small cichlid, two golden barbs, one glass cat. The three barbs gradually developed tail rot and died. One of the golden barbs is well but the other has tail rot. The water pH reading is 7.6, temperature is constant at 75°F. No aeration is used and a filter is on at night only. A thin film of brown algae has now begun to cover glass surfaces, rocks and gravel giving an overall dingy appearance. Can you please advise on the cause of the tail rot and prevention, and prevention and cause of the algae. Incidentally the glass cat died but during its stay we did not see it take one piece of food offered, which was in variety both dry and live.

The cause of fin rot, when it is not merely the secondary symptom of another disease, is attack by bacteria when fish are living in polluted water; and barbs, particularly tiger barbs, are notoriously susceptible to it. A high build-up of bacteria has occurred in your tank; although not always visible such a happening is usually indicated by cloudy water. In your letter a possible clue to the reason for this is the presence of the brown algae, which would indicate that the plants might not have been receiving sufficient light and are probably rotting.

Brown algae usually grows when lighting is not sufficient for the growth of green plants and green algae. Your tank should contain a good, thick growth of plant life. Increase the length of time the tank is illuminated, or if this is not possible increase the wattage of the lighting you are using now. Siphon out the tank and replace one-third of the water and repeat this twice more at weekly intervals. Until the plants are

growing strongly aerate the tank and keep the filter on as long as possible. Excess of bacteria causes oxygen deficiency in the water and again barbs more than many other fishes cannot survive such conditions. Above all make certain that you are not overfeeding with dried food and that the gravel has not turned black underneath.

The glass cat should have eaten some of the live foods offered. It may be that the tank's condition caused the fish to sicken or that it was already sick when acquired (it is assumed that there was no other fish in the tank harassing it!). In any case, glass cats do better in pairs. Günther Sterba goes so far as to state 'Glass catfish should always be kept in small shoals; solitary individuals languish'.

Growing Cabomba

I have been having trouble growing Cabomba in my community tank as the tops keep falling off. Can you please tell me what is causing this.

Cabomba does require a good deal of light to grow successfully and also prefers soft water. If it does not receive sufficient light it becomes straggly and brittle and tends to break up. We would suggest that you experiment a little by raising the wattage of your bulbs or by increasing the length of time during which the tank is illuminated, but it will, of course, take a little while before the plants show much improvement. However, the fact that you describe the trouble as being due to the 'tops falling off' does suggest another explanation. If the main plant stem is sturdy and putting out strong side fans of leaves, we would suspect that you have a plant nibbler among the inhabitants of your community tank. Some fishes do pull Cabomba to pieces. It is often difficult to catch them at it, and short of pinning down

the culprit by continuous observation and removing it from the tank it may be necessary to replace the Cabomba by a tougher plant.

Live Foods— How Necessary?

This may seem like a silly question but is it really vital to feed live food to tropical fish all that often? You see, to me this is a reality as at the moment I am serving overrears and am not within easy reach of a pet shop so my fish get Tubifex only about once a month. All the same they look and act quite healthily. I'm still in the experimental stages with brine shrimp and a white worm culture died on me within a few days so you can see I have a small problem.

It is possible for fishes to live out their full life span in perfect health on a diet of dried food only. Nowadays a great deal of research has gone into the production of the best-known dried foods and they supply a very adequate diet for most of the small and medium-sized tropicals that are the usual inhabitants of the community tank. But some fishes, such as catfish, Siamese fighters, etc., do require extra protein and it is largely with reference to their protein content that the use of live foods is recommended, as well as a means of alleviating the monotony of feeding with one food alone. If you are having problems in obtaining live foods, however, do not forget the substitutes that can be obtained, and which are often overlooked, from the domestic table—small shreds of raw meat (not fat), ox heart, tinned or raw shrimps, prawns, crab; it is surprising how much can be found to enliven your fishes' diet.

Fishes that need a high-protein diet will not starve on a diet of dried food, but in order to ensure that they remain in the peak of health you should continue to buy live food when possible; try again with the white worm and brine shrimp and use such suitable scraps as suggested above.

Holes in the Head

Recently my P. annectens has acquired holes in his head and I have been informed that they might be

boils. He has had these holes for at least 3 months. I first treated him with 50% T.C.P. and 50% water. This was not very successful so I used direct T.C.P., which seemed to enlarge the holes. After a week of this treatment I left the holes alone for a month in which time they seemed to have nearly healed, up. Within a week the holes appeared in exactly the same place as before. I have had this fish for 2 years now. Before this he was in perfect condition and I have won several trophies with him.

It seems most likely that the cavities appearing at the head of your fish are areas of tissue breakdown caused either by bacterial infection or by the presence of deep tissue parasites. It is difficult to account for their occurrence in the head area only but this is what is seen also, for example, in a condition shown by discus fish and may be because the infection is lodged in the sensory

pores of the skin in the area. An antibiotic such as terramycin would probably offer the greatest chance of a successful cure, although obtaining this would need the co-operation of a veterinary surgeon. Failing this, use a general aquarium antiseptic such as neutral acriflavine (half a 1.75 grain tablet to 10 gallons of water, changing half the aquarium water after 2 days and half again after a further 3 days). There is a slight risk in the use of this treatment that the fish might be over-sensitive to this compound.

Opaque Eyes

Recently I bought a telescopic-eyed moor, which has now developed an opaqueness of the eye. Only one eye is infected. I am not sure whether this is white fungus or not. I wonder if you could recommend a cure please?

This species is very prone to eye infections and two of the diseases

by which it is affected are grey cataract and worm cataract. Both diseases show a whitish condition of the lens of the eye, but worm cataract can be distinguished from the other when a magnifying lens is used. Tiny white dots will be seen, which are the little worms. Very little is known about the cause of grey cataract, but a great deal about worm cataract. The latter is due to larvae of several species of sucking worms (trematodes) whose life cycle involves birds, fish and snails. Successful treatment of these disorders is not guaranteed. The only good thing about worm cataract is that it is not transmitted from fish to fish. Keep the affected fish in clean, well aerated water to which a general antiseptic such as Dissolve has been added to form a weak solution. If the use of a magnifying lens shows that the opaque eye is due to worm cataract it is almost certain that the fish will lose the sight in that eye.



NORTH KENT A.S. held their first open show in July, at which 419 exhibits were benched including 4 individual furnished aquaria. Mr R. Kerridge of Harlow A.S. won a gold pin and the North Kent A.S. Cup for best fish in the show with a Texas cichlid (87 points). Mr S. G. Cowell of Bethnal Green won the F.B.A.S. Perpetual Trophy for labyrinths and the N.K.A.S. Cup for labyrinths with a *Ctenopoma kinglyeae* (82 pts). The home Society just managed to win the Aquafleet Challenge Cup for the society with the most points from Kingston & D. A.S., whose members did a great deal to make the show a good one. Detailed results are:

Furnished aquaria: 1, Mrs J. Stephens (N.K.); 2, Mr G. Arrow (East London); 3, Mr C. Wood (N.K.); 4, Mr R. Harvey (N.K.); 5, Mr J. Bellingham (Tonbridge); 6, Mr J. Parker (N.K.); 7, Mrs A. Smith (Croydon); 8, Mr R. Taylor (Tonbridge); 9, Mr R. Kerridge (Harlow); 10, Mr R. Kerridge (Harlow); 11, Mr J. Bellingham (Tonbridge); 12, Mr R. Harvey (N.K.); 13, Mr J. Wilson (Canford); 14, Mr L. Stevens (Redhill); 15, Mrs K. Heywood (Erich). Labyrinths: 1, Mr S. Cowell (Bethnal Green); 2, Mr R. Bowen (Walthamstow); 3, Mr F. R. Kendrick (Fresno); 4, Mr C. Wood (N.K.); 5, Mr J. Marshall (Medway); 6, Mr C. Hunter (N.K.);

Egg-laying toothcarps: 1, Mr F. Kendrick; 2, Mr R. Birch (North Kent); 3, Mr K. Barrett (Kingston). A.V. catfish: 1, Mr G. Greenhalf (Kingston); 2, Mr R. Baker (Tonbridge); 3, Mr S. G. Cowell. Basse, horn, daisy, minnow: 1, Mr F. Grosvenor (Kingston); 2, Mr K. Barrett; 3, Mr J. Stamp (Freelance). A.V. eglayers: 1, Mr R. Kerridge (Harlow); 2, Mr L. Laming (Medway); 3, Mr S. Cowell. Seated eglayers: 1, Mr K. Barrett; 2, Mr J. Marshall (Medway); 3, Mr C. Wood (N.K.). A.V. guppy: 1, Mrs R. Elmes (W.L.G.A.); 2, Mr S. Cowell (Bethnal Green); 3, Mr K. Elmes (W.L.G.A.). Swordtails: 1, Mr K. Barrett; 2 and 3, Mr J. Stephens (N.K.). Tetras: 1, Mr R. Harvey (N.K.); 2, Mr L. Laming (Medway); 3, Mr G. Greenhalf (Medway); 4, Mr J. Wilson (Canford); 5, Mr L. Laming; 6, Mr G. Greenhalf. A.V. livebearers: 1, Mr J. Polard (Kingston); 2, Mr G. Greenhalf; 3, Mrs K. Barrett (Kingston). Breeders eglayers: 1, Glynn Lodge (Erich); 2, Mrs G. Arrow (East London); 3, Mrs B. Osborne (Medway). Breeders livebearers: 1, Mr K. Eryden (Croydon); 2, Mr G. Greenhalf; 3, Mr J. Parker (N.K.). Single-tailed goldfish: 1, Mr J. Wilson (Canford); 2, Mr J. Marshall (Medway); 3, Mr Woodward. A.V. cold-water: 1, Mr P. Wren (N.K.); 2, Mr Woodward; 3, Mr J. Stephens (N.K.).

'ALTHOUGH the holiday season always accounts for a number of absentees' reports Mr R. C. Mills of **EALING & D. A.S.**, 'there has been no lack of interest at meetings of the Society. Recent events have included a quiz and a talk on that unpopular subject, disease; owing to the slightly smaller attendances, meetings have taken on a less formal atmosphere, and some very interesting discussions have taken place with everyone joining in. The main interest at this time of the year is the Jim Irvine Trophy competition (the long-term Table Show); after the first round total of 56 entries it

was nice to see 34 of these returning for round two'. This resulted in very close placings: 1, Mr T. Tagg (*Mytilosoma aureum*); 2, J. Ankin (J) (silver tetra); Mrs D. Cruickshank (sailfin mollie); Mr J. Healey (speckled mollie); 3, Mr J. Batts (*Myxus tengera*); Mr J. Irvine (*Metynnis* sp.); 4, Mr T. Tagg (*Metynnis* sp. and *Geophagus* sp.); Mr R. Todd (*Chilodactylus punctatus*). Plans are in hand for the club's second open show on 4th October and on the lecture side there will be talks by members on native marine life and on setting up aquascapes. In keeping with the Society's aim to pioneer new classes, this year's show will include a class for aquascapes in addition to a reptile/amphibian class. Schedules are available from Mr R. Sellars, 3a Lady Margaret Road, Southall, Middlesex.

BASINGSTOKE & D. A.S. lay good claim to have held the biggest show in the country this summer after attracting 800 entries to their very successful venture. Entries were received from all over the south and one came from as far afield as Singapore. Judges were Mr B. Baker, Mr J. Stillwell, Mr C. Brown, Mr H. Towell and Mr F. Tomkins, and they commented on the fine quality of the exhibits. With some classes of over 50 entries, to receive an award was really an achievement. Mrs Nicoll of Reigate & Redhill won the award for the

best fish in the show with her *C. julii* and received the Basingstoke Cup for the best fish, the Best Tropical Fish plaque, a gold pin for best fish and the Enfield Cup for best exhibit by a lady. Mr V. Voysey was awarded the Best Cold-water Fish plaque for peacock-eyed bass and the Voysey Cup, Carnival Queen Miss Ann West presented the prizes. Full results were:

Miniature aquaria: 1, Mrs W. Voysey (Salisbury); 2, Mr M. Strange (Basingstoke); 3, Mr H. Gough (Basingstoke). Barbs: 1, Mr

C. Pike (A. Marshall trophy for best barb, High Wycombe, (bequest); 2, Mr W. Harpe (Kingston, Schubert); 3, Mr T. Jones (Weymouth, half bodied). Characins: 1, Mr A. Blake (Basingstoke, red-eyed characin); 2, Mr R. Cooper (Kingston, *E. schuberti*); 3, Mr G. Greenhalf (Kingston, Congo tetra). *H.H.* and *Chasidow*: 1, Mr J. Pollard (Kingston, black-line tetra); 2, Mr R. Ridley (Basingstoke, glowlight); 3, Mr S. Cowell (Bethnal Green, serpet). *Nannostoma* and *Pseudocoryphodon*: 1, Mr M. Cott (Gosport, *N. nana*); 2, Mr T. Jones (Weymouth, *N. anomala*); 3, Mr P. Greenoor (Kingston, *N. anomala*). A.O.S. cichlids: 1, Mr C. S. Walker (R. Keeping Tankard for A.O.S. cichlid, Hounslow, convict cichlid); 2, Mr I. Jordan (Becknall, brown acari); 3, Mr T. Flood (Reading, *Burroughs*). Angels: 1, Mr A. G. Cox

(Dewsbury trophy, Weymouth); 2, Mr T. Hutton (Weymouth); 3, Mr R. Brown (Walthamstow). *Aptinogramma*, *Nannacara*, *Pelmatochromis*: 1, Mr M. Strange (R. Keeping Tankard, Basingstoke, *A. ramirezi*); 2, Mrs D. Barrett (Kingston, *A. agassizi*); 3, Mr T. Hutton (Weymouth, *N. anomala*). *Labyrinth*: 1, Mr M. Howell (Bethnal Green, climbing perch); 2, Mr G. Greenhalf (C. *andersoni*); 3, Mr G. Carter (Weymouth, croaking gourami). *Siamese fighters*: 1, Mrs C. King (the Bounty Cup, Bath); 2, Mr C. Wood (North Kent); 3, Mr A. Blake. *Egglaying toothcarps*: 1, Mr R. Harperry (the Basingstoke Killifish trophy, *M. bicostatus*); 2 and 3, Mr M. Cott (Gosport). A.O.S. catfish: 1, Mr G. Greenhalf (Oxbridge trophy, *C. glanis*); 2, Mr G. Greenhalf (P. sackoti); 3, Mr J. Wood (Brigate & Hedhill, talking catfish), *Cory-*

Innovations at the MIDLAND SHOW

THIS year's MIDLAND SHOW was the twenty-seventh Show organised by the MIDLAND AQUARIUM AND POOL SOCIETY but showed no sign of stagnation. Indeed, several innovations were introduced this year. One of these was the staging of reptile and amphibian classes to encourage this aspect of the aquatic hobby so closely linked to fishkeeping. These classes were judged by Mr Jim Kelly and Dr John Tranter and the newly formed Midland branch of the International Herpetological Society also staged their first annual show there. Another innovation was the awarding of cash prizes of £25 each for the fish adjudged Best in the Show in both the coldwater and tropical sections. This was won, in the coldwater section, by a moor entered by Mr A. E. Roberts and by a *Labetrophysus fuellborni* entered by Mr S. Woodbridge in the tropical classes. The F.G.A. were staging their Midland Open guppy show and the British Killifish their fifth International Show, so these fishes were well represented.

There were four entries in the inter-society competitive display class and the winners, North Warwickshire A.S., had staged a most delightful Old Curiosity Shop with tanks let into the base of the bow window, through the red-tinted panes of which could be seen a monster bottle lamp containing further fishes. The Birmingham F.G.A. urged onlookers to 'Climb to New Heights with the Fancy Guppy Association' beside a professional-looking 'brick' chimney in the process of being built complete with inset tanks and scaffolding. Society Aquarists of South Staffs had devised a picture gallery with tanks let into the walls and Nuneaton A.S. went in for a little gentle mockery with tanks inset into a pot that has never yet been presented at an aquatic show even if it was

labelled 'The Pot to Beat 'em All'. Details of the results are as follows:

Coldwater. Common goldfish and comets: 1, Mr P. S. Fellows (Raven Cup for best common goldfish); 2, Mr H. T. Jago; 3, Mr J. T. Cheshire. Breeders' class: 1, Mrs J. E. Roberts (Smith Cup for best breeders' entry, moor); 2, Mr T. G. Sutton (moor). Breeders' class, fancy goldfish, single fish: 1, Mr C. H. Barrett; 2, Mr G. J. Bell; 3, Mr T. L. Dodge. Bristol shubunkins, single fish: 1, Mr H. H. Bell; 2, Mr T. L. Dodge; 3, Mr I. Ford. Calico veiltails, single fish: 1 and 2, Mr T. G. Sutton; 3, Mr A. E. Roberts. Bristled shubunkins, bred 1970: 1 and 2, Mr G. J. Bell (Rowatt Cup); 3, Mr H. H. Bell. Sealed veiltails: 1, Mr T. L. Dodge. Twintails, other than calico veiltails, bred 1970: 1, 2 and 3, Mr A. E. Roberts (Rowatt Cup for best coldwater entry in show; Butler Cup for best moor in the show; E. A. Mason Memorial trophy for best veiltail).

Shubunkins, bred 1970, MAPS only: 1 and 2, Mr C. H. Barrett. Calico veiltails, bred 1970: 1, 2 and 3, Mr C. H. Barrett (Graham-Kays Cup for best veiltail; Keeling Cup for best veiltail bred in 1970). Shubunkins, matched pairs: 1, Mr R. L. Broadfield; 2, Mr C. H. Barrett. Orandas, single fish: 1, Mr A. E. Roberts; 2 and 3, Mr B. F. Hirst. Telescope: 1, 2 and 3, Mr T. G. Sutton (pearl scales). Moor, single fish: 1, Mr T. L. Dodge; 2, Mr H. G. Sutton. Shubunkins, single fish: 1, Mr C. H. Barrett (Taylor Cup for best shubunkin in the show); Catfish Cup for best shubunkin, MAPS member only; 2, Mr G. J. Bell; 3, Mr F. Hill. Calico veiltails and tetras: 1 and 2, Mr F. Radford; 3, Mr C. H. Barrett. A.V. pond or river fish: 1 and 2, Mr C. J. Conell (God); 3, Mr G. M. Haddon (green tetra).

Individually decorative coldwater aquariums: 1, Mrs H. Yates; 2, Mr S. Dean. Inter-society decorative coldwater aquariums: 1, Tamworth Killifish and Aquarist Group (Society shield); 2, Coventry Pool and Aquarist Society. Shubunkins (trophy): 1, Mr F. Hill (Webb Cup); 2 and 3, Mr T. Skidmore.

Tropical. Barbs, true pairs, *silurus*, *oligolepis* and *sumneri*: 1, Mr S. Green; 2, Mr Atwood and Mr Williams. Barbs, true pairs, tetrazons, *nigrofasciata*, *nira* and *conchama*: 1, Mr I. Ford (Dodge Cup); 2 and 3, Mr R. Trippas. Barbs, true pairs, A.O.S.: 1, Mr N. Furness; 2, Mr L. G. Wilton; 3, Mr G. M. Haddon. Danios, *brachydans*, minnows, true pairs: 1, Mr A. R. Haddon; 2 and 3, Mr P. G. Abbott. Any rainbow, true pairs: 1, Mr S. Green; 2, Mr R. Trippas; 3, Mr R. C. Roberts. Characins, *Jyphlophrycon*, *Hemigrammus*, *cardinalis*, true pairs: 1, Mr A. Wilton (W. V. Jones Cup); 2, Mr B. F. Hirst; 3, Mr R. Trippas. Characins, any other,

true pairs: 1, Mr S. Green; 2, Mr B. F. Hirst; 3, Mr K. L. Brown.

Male fighters, single fish: 1, Mr S. Wood (Mrs Gilbert Cup for best male); 2 and 3, Mr J. D. Fellows. A.O.S. male anabantid, single fish: 1, Mr C. Collett; 2, —; 3, Mr J. H. Sheldon. Cichlids, up to 3 in, single fish: 1, Mr J. Hooper (Inter-Pot breeders); 2, —; 3, Mr J. Wits. Cichlids, over 3 in, single fish: 1, Mr S. Woodbridge (Capeer Cup for best cichlid); 2, Mr S. Dean; 3, Mr Atwood and Mr Williams. Angelfish, single fish: 1, Mr Atwood and Mr Williams; 2, Mr S. Dean; 3, Mr G. H. Roberts.

A.V. male guppy, G.S.E. standard: 1 and 2, Mr Atwood and Mr Williams (Coleman Cup for best Poecilia); 3, Mr G. Sutton Cup for best guppy entry in this class); 3, Miss J. Sheldon. A.O.S. mollus, true pairs: 1, Mr R. Trippas; 2 and 3, Mr M. J. Wits. A.V. platys, true pairs: 1, Mr N. Furness; 2 and 3, Mr M. J. Wits. A.V. swordtails, true pairs: 1, Mr I. Ford; 2 and 3, Mr R. Trippas. A.O.S. tropical fish, single fish: 1, Mr S. Wood; 2, Mr S. Woodbridge; 3, Mr J. Reeves.

Breeders' class, egg-layers: 1, Mr P. W. Skinner (Fosdy Cup, *B. tetrazona*); 2, Mr J. H. Sheldon (*A. ramirezi*); 3, Mr J. Brown (*P. archeri*). Breeders, livebearers: 1 and 2, Mr R. Trippas (moor platys); 3, Mr C. Mousley (black mollies). A.V. Corydoras: 1, Mr M. Bates (S. W. Richardson Memorial trophy); 2, Mr I. Ford; 3, Mr J. S. Curran. A.O.S. catfish: 1, Mrs I. Whitefield (J. C. Fosgate trophy); 2, Mr P. G. Abbott; 3, Mr S. Woodbridge. Egg-laying toothcarps, true pairs: 1, Mr J. D. Fellows (Corringham Memorial trophy); 2, Mr P. S. Fellows; 3, —.

Any characins, true pairs, novices: 1 and 2, Mr A. Harby; 3, Mr J. Furness. Any danio, etc., true pairs, novices: 1, Mr J. A. Harvey (Novice Tankard); 2, Miss J. Wits; 3, Mr P. J. Turner. Any barbs, true pairs, novices: 1, Mr J. Furness; 2, Mr R. E. Barnett; 3, Mr D. Green. Any livebearers, true pairs, novices: 1, Mr J. R. Wilton; 2, Mr R. L. Brown; 3, Miss J. Wits. Any male anabantid, single fish, novices: 1, Mr D. Green; 2, —; 3, Mr C. Williams.

Individual decorative tropical aquariums: 1, Mr S. Dean; 2, Mr J. Yates; 3, Mr R. Trippas. Inter-society decorative tropical aquariums: 1, Haden A.S. (Society shield); 2, Wednesbury E. D. A.S.; 3, Lucas Aquarist & Pool Society. Inter-society competitive display: 1, North Warks A.S.; 2, Nuneaton A.S.; 3, F.G.A. Birmingham; 4, Nuneaton A.S. A.V. aquarium plant, up to 12 in.: 1, Mr C. J. Nightingale (Gilbert Cup and P. W. Jones trophy); 2, Mr R. Trippas; 3, Mr E. G. Lendley. A.V. reptiles: 1, Mr J. A. Atwood (Calgary A.S. trophy); 2, joint, Mr D. B. Reid and Mr O. Summers. Amphibia (other than snakes): 1, Mr M. Bates (Graham Wood trophy); 2, Mr M. Highfield; 3, joint, Mr C. Hill (two entries). Individual decorative reptiles or amphibians: 1, Mr D. B. Reid (Caterill Shield).

danos and brochis: 1, Mrs Nicol; 2, Mr T. Blouchard (Salisbury, C. agassiz); 3, Mr M. Squibb (Weymouth, C. jaculi). Rasbora: 1, Mr K. Barrett (Kingston, R. daniconis); 2, Mrs Humphreys (Raigden & Rodhill, freetail rasbora); 3, Mr J. Pollard (Kingston, slender rasbora). Danios and minnows: 1, Mr R. Weston (Basingstoke, glass danio); 2, Mr J. Wood (Raigden & Rodhill, rasbora); 3, Mr S. Crabtree (Havant, pearl). Loaches: 1, Mr M. Carter (Bracknell, B. sublineatus); 2, Mrs R. Greenhalf (Kingston, B. sublineatus); 3, Mrs D. Crucikshank (Uxbridge, sublineatus). Egg-layers a.o.s.: 1, Mr R. Cox (Weymouth, bony-tipped barb); 2, Mr S. Coxwell (Bethnal Green, red-finned shark); 3, Mr M. Strange (Basingstoke, leaf fish).

Male guppy: 1 and 2, Mr T. Jones (Weymouth); 3, Mr D. Hargreaves (Salisbury). Female guppy: 1, Mr P. Grovener (Kingston); 2, Mr R. Lane (Salisbury); 3, Mr J. Turner (Salisbury). Swordtails: 1, Mr T. Crucikshank (Lalrag, red); 2 and 3, Mr R. Cox (High Wycombe, silver-green Platy); 1, Mr L. Little (Bracknell, blue); 2 and 3, Mr L. Little (moon platy). Mollies: 1, Mr G. Greenhalf (Widlers); 2, Mr S. Crabtree (Havant, white); 3, Mr D. Crucikshank (Uxbridge, white). Livebearers a.o.s.: 1, Mr S. Crabtree (L. titata); 2, Miss P. Hammond (Oreidonia, half bow); 3, Mr M. Carter (Bracknell, L. titata). Egg-layers, second pairs: 1, Mr A. Marshall (Basingstoke, pearl danio); 2, Mrs Nicol (Raigden & Rodhill, dwarf gourami); 3, Mr G. P. Carter (Weymouth, silver hatchets). Livebearers, second pairs: 1, Mrs Nicol (P. variatus); 2, Mr M. Carter (Bracknell, L. titata); 3, Mr K. Dryden (Croydon, monogry fish). Common goldfish: 1 and 2, Mr V. P. Voysey (Committee to trophies and Voysey Cup, Salisbury); 3, Mr L. Menzies (G.S.G.R. shubunkins and comets); 1, 2 and 3, Mr D. E. Goodbody (Walthamstow, shubunkin); 1, Tropical goldfish with dorsal: 1, 2 and 3, Mr V. Collins (Yeovil, fezzaihi). Coldwater a.o.s.: 1, Mr N. Collins (Yeovil, golden rudd); 2, Mr D. Part (Basingstoke, stickleback); 3, Mr V. Voysey (Salisbury, perch). Centrarchids: 1, 2 and 3, Mr V. Voysey (Salisbury). Breeders egg-layers: 1, Mr P. Grovener (J. Mitchell Rosebowl, Kingston, N. anomalis); 2, Mr R. G. Cox (High Wycombe, C. pinostis); 3, Mr R. Ridley (Basingstoke, emperor tetra). Breeders livebearers: 1, Mr R. G. Cox (silver sword); 2, Mrs Nicol (widlers mollies); 3, Mr G. Greenhalf (widlers mollies). Plants: 1, Mr P. Lane (R. Ridley trophy, Yeovil, E. radiatus); 2, Mr V. Voysey (first sagittaria); 3, Mr A. Chandler (Walthamstow, twisted vallis).

SECRETARY of the EASTERN COUNTIES SECTION of the FEDERATION OF GUPPY BREEDERS' SOCIETIES, Mrs L. Myers, reports: "Owing to the much valued support from the members of the Three Counties Section, 140 entries were received at our annual show. The Three Counties group took away 19 awards including best breeders which Mr Tom Errey won with a nicely matched team of colourful veils. This was Tom's third silver pin and he also gained a further pin with his original veil. Other silver pins were won by Mr R. Cox for his very good pintail, Mr E. Merritt with a very nice short dorsal veil and Mrs L. Myers with a delta which finished as best fish in show and a very attractive gold-laced female that also won best opposite sex. Most of our non-members exhibits were F.G.A. members and the quality in general

MEMBERS of the LONG BEACH A.S. (U.S.A.) are asked to make sure they wear their name badges at club meetings. Reception secretary Miss Flo Judkins asks her fellow members: 'Do members say "Hi there!" instead of calling you by your name?' and goes on to urge members to remember to wear their badges. With meetings attendances of numbers such as 87 members and 45 guests it would seem an excellent way of getting people known to each other.

was quite good. A very enjoyable day for the organisers, and, we trust, our visitors too."

TONBRIDGE & D. A.S. enjoyed an interesting talk from Mr C. A. T. Brown on various types of Corydoras guppies, mollies and killifish. Colour slides were used to illustrate the talk and members gained much useful information on identification and some important facts that judges look for when judging fish. Mr T. Haines won in the table show rasbora class (2, Mr D. Mathieson; 3, Mr J. Bellingham) and Mr R. Baker in that for danios (2, Mr R. Baker; 3, Mr T. Taylor). The club members have also been engaged in arranging for a selection of tanks and tropical freshwater fishes to be on display at Sandown Court School's fête. This was a very successful venture. 35 tanks and 45 show jars of tropicals were on display together with different varieties of live and dried food. A stand of nine tanks, on loan from Aquafleet of Northfleet, housed a variety of fish for sale. A selection of books and the equipment used in the hobby were also provided for the interest of over 1000 people who saw the display.

THE PORTSMOUTH A.S. open show attracted more than 400 entries this year. Secretary Mr T. J. Howard reports: "The club holds the show open to the public during the following week and this attracted an excellent attendance. The furnished aquaria are, of course, what the public likes to see and this year, with nylon-coated tanks available, the show attracted four marine furnished aquaria. A tank from Gosport A.S. made one of the best exhibits with the rockery showing barnacles still pulsating for Infusoria. For intending exhibitors next year to note (at least those worried about their fish)—the club has stewards operating 24 hours a day." The following results were recorded:

Inter-club furnished. Tropical, Southampton S.A.; coldwater, Carrisus A.S.;

marine, Portsmouth A.S. Individual furnished. Tropical, Mr T. Howard; coldwater, Mr W. Lewis; marine, Mr T. Atkinson; tropical junior, C. Donnelly; coldwater junior, C. Donnelly, Burke, Mr J. Wood; Hampanemus, Mr J. Pollard; a.o.s. characins, Mr G. Greenhalf; Apistogramma, Mr S. Crabtree; a.o.s. cichlids, Mr L. Jordan; Siamese fighters, Mr M. Goss; lilywishes, Mr G. Greenhalf; tooth-carp, Mr H. Armitage.

A.o.s. staffish, Mr G. Greenhalf; Corydoras, Mr T. Blanchard; rasbora, Mr D. Haines; danio, Mr S. Crabtree; loach, Mr S. Webster; a.o.s. egg-layer, Mr R. Tee.

Guppies, female, Mr D. Riley; guppy, male, Mr D. Riley; sword, Mr B. South; platy, Mr G. Greenhalf; mollies, Mr S. Crabtree; a.o.s. livebearers, Mr J. Pollard.

Common goldfish, Miss Ryder; London shubunkins, Mr P. Whittington; single-tails, Mr W. Lewis; comets, Mr V. Hunt; winter-tails, Mr R. Whittington; fan-tails, Mr R. Lewis; globe eyes, Mr R. Dudley; a.o.s. fancy goldfish, Mr R. Whittington; carp, Mr W. Ryder, koi, Mr W. Ryder. Centrarchids, Mrs Stillwell; a.o.s. coldwater, Mr V. Hunt; Tropical breeders, egg-layers, Mr J. Devo; livebearers, Mr J. Wright. Breeders, coldwater, Mr R. Whittington; guppies, Mrs G. Greenhalf. Rooted plants, Mr G. Greenhalf; floating plants, Mr R. Whittington; cuttings, Mr V. Hunt.

The best fish in the show award went to Mr J. Pollard (Kingston), best coldwater fish in the show, Mrs J. Stillwell; highest pointed tropical, Mr G. Greenhalf; highest pointed coldwater, Mr V. Hunt.

A final word from Mr Howard: "We would like to thank all exhibitors without whose support a show could not be staged, and hope that those who did not win this year will win next year."

WHEN WALTHAMSTOW & D. A.S. were hosts to neighbouring CHINGFORD A.S. in July, members from both Societies formed a panel to answer questions put by the audience. The inter-club table show for pairs of tropical fish attracted 26 entries and Mr F. Tomkins, judging, commented on the good quality of the exhibits. Walthamstow took the first three places, fourth going to Chingford. The Society's August meeting was the first to be held at its new meeting place in Frederick Street, off St James Street, London, E.17, and saw the return of Mr Tomkins, this time to address the meeting on general aspects of keeping happy and healthy fishes. New members are very welcome and can obtain details from secretary Mr A. R. Chandler (01-504 9165).

NORTH STAFFS A.S. second open show attracted nearly 600 spectators and 273 entries when it was held in August. The best fish in the show award was won by a *Lepomis federi* entered by Mr J. E. Greenhough of Derby Regent. Complete results were:

Breeders, livebearers: 1 and 2, Bown Bros (N. Staffs); 3, Mr D. V. Colclough (Ind.). Breeders, egg-layers: 1, Mr W. J. A. Lockett (N. Staffs); 2, Mr D. V. Colclough; Bown Bros. Pairs, livebearers: 1, Mr Charwood (S.A.S.S.); 2, Mr A. G. Hallam (N. Staffs); 3, Mr R. Harlow (Derby R.).

Pairs, egg-layers: 1, Attwood & Williams (Rubery); 2, Mr J. Sanders (Stone); 3, Mr R. Mayer (N. Staffs).

Guppies: 1 and 2, Attwood & Williams; 3, Mr Whistler (Rubery); Fairy: 1 and 2, Mr N. Furness (Rubery); 3, Mr I. Brough (Stone). Swordtails: 1, Attwood & Williams; 2, Mr J. Brough; 3, Mrs Edwards (Rubery). Mollies: 1, Mr M. Baker (Warrington); 2, Goodwin Bros. (N. Staffs); 3, Mr R. Mayer.

Rashoras: 1 and 2, Mr J. Sanders; 3, Mr J. Bailey (N. Staffs). Danios, minnows, snub-noses: 1, Mr W. S. Ash (Leek); 2, N. W. and D. J. Platt (Stone); 3, Mr L. Lockett. Barbs under 3 in.: 1, Mr L. Lockett (Stone); 2, Mr Bewick; 3, Mr V. Knowles. Barbs over 3 in.: 1, Mr J. Sanders; 2, Mr A. Anders (N. Staffs); 3, Mr T. Haydock (N. Staffs). Cichlids under 3 in.: 1, Goodwin Bros.; 2, Mr R. T. Ball (Derby R.); 3, Mr W. S. Ash. Cichlids over 3 in.: 1, Mr J. S. Booth (N. Staffs); 2, Mr Morrell; 3, Mr K. Ankers. Characins under 3 in.: 1, Mrs Edwards (Rubery); 2, Mr K. Ankers; 3, Mr M. Millman (Warrington). Characins over 3 in.: 1, Mr J. E. Greenough (Derby R.); 2, Mr T. Harvey; 3, Attwood & Williams.

Sharks and flying foxes: 1, Mr R. Mayer; 2, Mr Hickman; 3, Mr R. Harlow. Corydoras catfish: 1, Attwood & Williams; 2, Mr D. Aldred (Stone); 3, Mr I. Penfold (Ind.). A.o.v. catfish: 1, Mr M. Millman; 2, Mr A. Hunt (Ind.); 3, Mr T. Haydock. Loaches: 1 and 2, Mr Morrell; 3, Mr A. T. Jones (N. Warks). A.o.v. tropical: 1, Mr J. S. Booth; 2, Mr R. Harlow; 3, Mr Hickman. Fancy goldfish: 1, Mr T. Haydock. A.o.v. goldfish: 1 and 2, Mr A. G. Hallam.

ILFORD & D. A. & P.S. members were very pleased with the three firsts obtained at the Dagenham Town Show to follow the club's success last year and in 1968. The first win was given to the tropical furnished aquarium and the other two were won by Mr Harry Berger and his daughter Rita in the coldwater section with a singetail and twin-tail goldfish. Mr Berger was also very successful at the club's July table show, taking a first and second in the coldwater section with a Bristol shubunkin and a common goldfish. Mrs Rowe was even more successful in the tropical classes winning all places in the a.v. mollie and a.v. barb classes. An interesting programme is planned in the coming months including the auction in October when anything and everything is sold to the highest bidder (members only for this, however). New members are welcome to attend future meetings at the St Laurence Church Hall, Hamilton Avenue, Barkingside, 8 p.m. on the second Monday of each month.

BRADFORD & D. A.S. members have been fortunate in hearing two excellent lectures recently. Mr H. Foden spoke on a wide variety of aquatic topics and Mr Firth gave instruction on breeding the egg-layers. Mr Firth advised beginners

to breed fish, such as many of the barbs, that do not require Infusoria for a first food. Mr Firth, the Society's president, has recently been voted into the position of vice-president of the A.Y.A.S. and two club members, Mr P. Chorley and Mr G. Fairclough, have been appointed to the A.Y.A.S. committee. The Society's open show attracted entries from 18 societies and results were:

Guppies: 1, Mr D. Masley (Keighley); 2, Mr D. Truby (Nelson); 3, Messrs Simpson & Horsfield (Barnsley). Swordtails: 1, Mr N. Turner (Mansfield); 2, Mr C. Corra (Huddersfield); 3, Mr R. Hasley (Barnsley). Mollies: 1, Mr J. K. Potten (section winner, Selby); 2, Mr D. Fryer (Hull); 3, Mr G. Monk (Aireborough). Fairy: 1, Mr W. Burton (Preston); 2, Mr A. Firth (Bradford); A.o.v. Evebeare: 1, Mr G. Monk (Aireborough).

Barbs: 1, Mr R. Taylor (Aireborough); 2, Mr A. Firth; 3, Mr J. K. Potten. Barbs, large: 1, Mr Simpson and Mr Horsfield. Characins, small: 1, Mr A. Firth; 2, Mr R. Johnson (Aireborough); 3, Mr R. McKenna (Nelson). Characins, large: 1, Mr N. Turner (Mansfield); 2, Mr D. Kennedy (Bradford); 3, Mr R. Taylor. Carps and minnows: 1, Mr M. Purvis (Hull); 2, Mr M. Grange (Keighley); 3, Mr A. Dunsheath (Bradford). Sharks and foxes: 1, Mr N. Spencer (Bradford); 2, Mr M. Colley (Ind.); 3, Mr J. K. Potten. Toothcarps: 1, Mr Hasley (B.K.A.); 2, Mrs Gear (Keighley); 3, Mr Turner (Aireborough).

Fighters: 1, Mr G. Fairclough. Annaboids: 1, Mr A. Ruid (Bradford); 2, Mr J. R. Potten; 3, Miss A. Gregory (Nelson). Cichlids, small: 1, Mr S. Harrison (Huddersfield); 2, Mr Simpson and Mr Horsfield; 3, Mr R. Johnson. Cichlids, large: 1 and 2, Mr D. Jones (Rotherham); 3, Mr D. Truby. Anglia: 1, Mr R. Johnson; 2, Mr R. McKenna (Nelson). Catfish, Corydoras: 1, Mr R. Taylor; 2, Mr A. Baldwin (Nelson); 3, Mr P. Chorley. Loaches: 1, Mr T. Watkin (Selby); 2, Mr R. Taylor; 3, Mr D. Jones (Rotherham). A.o.v. catfish: 1, Mr D. Jones (Rotherham); 2, Mr R. Longley (Ind.); 3, Mr R. McKenna.

Brooders, Evebeares: 1, A. and C. Lofthouse (Huddersfield); 2, Messrs Simpson and Horsfield; 3, Mr G. Monk (Aireborough). Brooders, egg-layers: 1, Mrs S. Gear (Keighley); 2, Mr R. Hasley (Barnsley); 3, Mr G. Monk. Pairs, Evebeares: 1, Mr R. Taylor; 2, Mrs S. Gear (Keighley); 3, Mr M. Grange (Keighley). Pairs,

egg-layers: 1, Messrs Simpson and Horsfield; 2, Mr R. Colles (Selby); 3, Mr C. Corra (Huddersfield). Common goldfish: 1, Mr J. Caveths (Bradford); Fancy goldfish: 1, Mr J. Caveths.

The best fish in the show award went to a kribia fish (8½ points) exhibited by Mr D. Kennedy of Bradford.

THE MERSEYSIDE A.S. Exhibition at the Liverpool Show was a great success and thousands of people drifted past the exhibits asking questions or 'just looking'. Show secretary Mr Bill Smith was presented with a Certificate of Merit for his presentation of the Exhibition. Details of the show results are as follows:

Individual furnished aquaria: 1, Mr N. Peterson (Liverpool Cup); 2, Mrs A. Peterson; 3, Mr M. Connell. Guppies: 1, Mr D. J. Bormala; 2, Mr N. Peterson; 3, Mr J. Faulkner. Fairy: 1, Master F. Fisher; 2, Mr D. Thomalla; 3, Mr M. Connell. Mollies: Master S. Smith (Cranston Cup for best Evebeare); 2, Mr W. Smith; 3, Mr A. Lomas. Swordtails: 1 and 2, Mr H. Stanes; 3, Master F. Fisher. Labryrinths: 1 and 2, Mr M. Connell; 3, Mr R. Stanes. A.o.v. labryrinths: 1, Mr A. Lomas (M.A.S. trophy); 2 and 3, Mr K. Parkes.

Characins, small: 1, Mrs V. Parkes; 2, Mr N. Peterson; 3, Mr R. Stanes. Characins, large: 1, Mr K. Parkes (M.A.S. trophy); 2, J. Cobb, Jun.; 3, Mrs V. Parkes. Barbs, small: 1, Mr N. Peterson; 2 and 3, Mrs A. Peterson. Barbs, large: 1, Mr K. Parkes (M.A.S. trophy); 2, Mr J. Mullis; 3, Mr N. Peterson. Cichlid, dwarf: 1, Mr N. Peterson (M.A.S. trophy); 2, Mrs A. Peterson; 3, Mr D. Thomalla. Cichlid, large: 1, Mr J. Mullis; 2, Mr H. Kitchen (Glydale A.S.); 3, Mr A. Lomas. Top minnows: 1, Master S. Smith (M.A.S. trophy); 2, Mrs A. Peterson; 3, Mr J. McGinly. Rashoras and danios: 1, Mr D. Thomalla (M.A.S. trophy); 2, Mr K. Parkes; 3, Mr R. Parkes.

Catfish and loaches: 1, Mr R. Stanes (M.A.S. trophy); 2, Mrs A. Peterson; 3, Mr D. Thomalla. A.o.v.: 1, Mr K. K. Parkes (Mersey Cup); 2 and 3, Mr D. Thomalla. Brooders, Evebeares: 1, Mr D. Thomalla (M.A.S. trophy); 2, Mr M. Connell; 3, Mr N. Peterson. Egg-layers: 1, Mr D. Thomalla; 2, Mr J. McGinly; 3, Mr K. Parkes. Junior section: 1, 2 and 3, Master S. Smith (M.A.S. Junior shield). Mini jets: 1, Mrs V. Parkes; 2 and 3, Mrs V. Faulkner. Best fish in the show award: Liverpool Aquaria trophy, Mr Ken Parkes.

Meetings and Changes of Officers

BRENT A.S. Officers: president, Mr T. D. Smith; vice-presidents, Mr B. Ellison, Mr L. Frost, M.P.; chairman, Mr R. Tabeteau; secretary, Mr J. Morgan (105 High Road, Willesden, London N.W.16); treasurer, Mr D. Homer; P.R.O., Mr E. Moore. Meetings (new venue): 66 Cricklewood Broadway, Cricklewood, London N.W.2.

HEMEL HEMPSTEAD A.S. Secretary, Mr F. Trowth (51 Woolmer Drive, Hemel Hempstead, Herts); press secretary, Mrs J. Collins (65 Pulleys Lane, Hemel Hempstead, Herts).

LLANTWY MAJOR A.S. Officers: chairman, Mr Vincombe; vice-chairman, Mr Ireland; treasurer, Mr Edwards; secretary, Mr J. A. Thomas (12 Yew Tree Grove, St Athan, nr. Barry); librarian, Mrs Jones; show secretary, Mr Robertson; assistant, Mr Archer. Meetings: Lesser Hall, Llantwit Major.

NOMAD AQUARISTS CLUB (New Society). Secretary, Mrs J. L. Henscroft (16 Timber Hill Road, Caterham, Surrey). Meetings: the Caterham Youth Centre.

STOCKTON-ON-TEES A.S. Officers: chairman, Mr D. Keighley; secretary, Mr C. W. Buck (22 Darby Grove, Thornaby/Stockton, Teesside TS17 8BX); treasurer, Mr L. Osmun; show secretary, Mr R. Bowman (2 Sutton Close, Fairfield, Stockton); P.R.O., Mr P. Pullman. Meetings (change of venue): The Tilly Inn, Maritime Place, Stockton, every first and third Monday of each month. New members welcome.

WALTHAMSTOW & D. A.S. (change of venue): Frederick Street, off St James Street, E.17. New members welcome; please contact secretary Mr A. R. Chandler (68 Uplands Road, Woodford Bridge, Essex).

In Brief . . .

. . . **BRENT A.S.** recommenced holding their meetings, after the summer recess, at their new palatial premises at 96 Cricklewood Broadway, Cricklewood, London, N.W.2. Secretary Mr J. Morgan points out that innumerable buses pass the front door and there are three nearby railway stations, so prospective new members should find no difficulty in getting to meetings.

. . . A **NEW** society in the Caterham, Surrey area is the **NOMAD AQUARISTS CLUB** and they held their first meeting in their permanent meeting place, Caterham Youth Centre, in July. Mr Cliff Harrison judged the table show for fighters. Secretary Mrs J. L. Horscroft took first and second places and the Cup for the winning fish; Mr A. Price was third. The club has an interesting programme planned—please enquire for details from Mrs Horscroft, 16 Timber Hill Road, Caterham.

. . . **AT** the club meeting before her wedding Miss Grunnell of **YEOVIL & D. A.S.** had a triumphant evening. She came first in the catfish and loaches class, won the quiz and was joint winner with Miss Bush in the monthly draw. Other winners were: oddset coldwater, Mr V. Collins. Junior tropicals, Miss D. Forward; junior coldwater, N. Collins.

. . . **WHEN** Mr R. Nicholls lectured on setting up a furnished aquarium to **THURROCK A.S.** recently, Mr Ed. Nicol and Mr K. Appleyard assisted by setting up the aquarium as the talk proceeded. Mr Nicol was himself the lecturer with Mr Frank Harkins on the subject of "Fish I have Bred". Table show winners have been: barbs, Mr K. Appleyard; swordtails, Mr P. O'Brien; catfish, Mr P. Hinkly; pairs livebearers, Mr D. Durrant; pairs egg-layers, Mr D. Durrant.

. . . **WHEN** Mr A. Firth of Bradford & D. A.S. lectured to **HARROGATE & D. A.S.** on egg-layers 43 members turned up to hear this popular lecturer. Mr Firth also judged the table show (1, Mr M. Allen; 2, Mr M. Levett; 3, Mr M. Slinger). A slide show on anabantids, an suction and a question panel composed of Mr J. Hattersley, Mr A. P. Stothard and Mr S. M. Whitehouse have also been held. New members are welcome to attend meetings every second Tuesday at the Conservative Rooms, Park View, Harrogate.

. . . **SOUTHAMPTON A.S.** invited members of New Forest A.S. to their monthly meeting recently (St Denys Church Hall, Southampton)

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and entertained them to a slide and tape show of slides taken by members of Hendon & D. A.S., some of these being very unusual and interesting. The table show for danios, minnows and rasboras was judged by Mr I. Goddard of Salisbury. Advanced class: 1, Mr E. Hearn; 2, Mr D. Jones; 3, Mr J. Gilbert. Novices: 1, Mrs Snellgrove; 2, Mr P. Brown.

. . . **ALTHOUGH** the school holidays mean that **HEMEL HEMPSTEAD A.S.** lose their meeting place for the period, they have taken full advantage of this by organising a daphnia hunt one evening and a visit to a tropical fish shop in Hitchin on another.

. . . **YATE & D. A.S.** members are having a very successful show season this year. At a recent open show members entered 67 fishes and won 22 prize cards. Club meetings have included a talk by Mr J. Wheeler of Trowbridge on his experiences with marine tropical fish, and a skittles social held with **BRISTOL AERO A.S.**, which Yate lost but thoroughly enjoyed in the losing. Mr B. Waters won in the table show for characins (2, Mr R. Adams; 3, Mr R. Bishop).

. . . **NEW FOREST A.S.** have recently greatly enjoyed a film slide show with taped commentary on common and uncommon aquatic plants. The show was supplied by Brentwood Aquatics and was presented by Mr G. Danby who also loaned the equipment. The slides were first rate and showed many plants that were completely new to those present. Table show winners were: coldwater plants, Mr D. Lane

(Elodea); tropical plants, Mr. R. Moseley (Amazon sword); a.o.v. coldwater, Mr D. Harding (weather loach); specials, Mr L. Menhennett.

. . . **AT** the July meeting of the **GOLDFISH SOCIETY OF GREAT BRITAIN** members were delighted to listen to the continuation of the talk by Mr R. D. Esson on line breeding. Mr S. Freeman also spoke on general topics. The table show for pairs of raintails bred in 1969 was led by Miss D. Morris; 2, Mr S. Tibble; 3, Mr J. Linale.

. . . **MR BARRY FUNNEL** presented fellow members of **HASTINGS & ST. LEONARDS A.S.** with a lively and entertaining quiz evening that was won by the chairman, Mr G. Pryke, and junior member Roger Sleet, who both gained 80 out of a possible 96 marks. A coach outing to Alexandra Palace and an illustrated talk on coldwater fishes by Mr R. D. Esson have also been enjoyed. The junior table show for livebearers (excluding guppies) was won by Brian Reed; 2, Clive Chakraft; 3, Andrew Bristow.

. . . **THE** use of their meeting hall for other purposes enabled members of **LEAMINGTON & D. A.S.** to enjoy a daphnia hunt at a farm 15 miles out of town, and those who could not attend will be able to see the film record made by Mr Bill Markham. Back once again in the meeting place, a programme of slides of previous home aquarium competitions were shown to give members ideas for decorating their entries for the society's Exhibition in the Pump Rooms annexe.

Dates for Your Diary

1st October. **EAST LONDON AQUARISTS AND PONDKEEPERS ASSOCIATION** Open Show, Ripple Road School, Barking, Essex.

4th October. **EALING & D. A.S.** Open Show, Northfields Community Centre, Northover Road, London, W.12. Doors open approx. 2.30 p.m., Refreshments. Schedules from Mr R. Sellers, 28 Lady Margaret Road, Southall, Middlesex.

4th October. **SUFFOLK PONDKEEPERS & AQUATIC SOCIETY** Open Show. Details from Mr G. Phillips, The Flat, Five Station, High Road West, Felstead, S11 9JA.

10th-12th October. **BRITISH AQUARISTS' FESTIVAL**, Belle Vue, Manchester Saturday 10-8, Sunday 10-7. Schedules from Mr G. W. Cooke, Spring Grove, Field Hill, Busby, Yorks.

17th October. **G.S.G.B. CONVENTION** and Open Show, St Marks Church Rooms, Belgrove Gate, Leicester, at 2.30 p.m. Details from Mrs P. Wharmington, Paces Lodge, Ringley Park Avenue, Reigate, Surrey.

17th October. **BRENT A.S.** Open Show, Sydney Memorial Hall, High Road, Willes-

den, London, N.W.2. Details from Mr A. J. Raymond, 39 Innes Road, London, N.W.10.

18th October. **SHERWOOD A.S.** first Open Show, Ladybrook Community Centre, Ladybrook Lane, Mansfield, Notts. Schedules from Mr J. Igoe, 25 Marple Avenue, Mansfield Woodhouse, Notts.

24th October. **KINGSTON & D. A.S.** Open Show. Schedules from Mr G. Greenhall, 39 Garth Close, Morden, Surrey.

24th October-1st November. **THE AQUARIUM SHOW '70**, Royal Horticultural Society Old Hall, Vincent Square, London, S.W.1.

1st November. **ASSOCIATION OF YORKSHIRE AQUARIST SOCIETIES** 'Aquarist Fair', The Victoria Hall, Victoria Park, Knighley, York.

8th November. **HEYWOOD & D. A.S.** Open Show, Ambulance Hall, Burnford Road, Heywood, Bursching 18 noon-2.0 p.m. Details from Mr A. Evans, Blenheim Close, Unsworth, Nr Bury, Lancs.

14th November. **HENDON & D. A.S.** Annual Congress, Whitefield Secondary Modern School, Clarendon Road, Hendon, London N.W.2. Tickets (50 adults) from Mr R. Maynard, 90 Cotswold Gardens, London N.W.2.

20th November. **AIREBOROUGH & D. A.S.** Open Show, Greenacre Hall, Rawdon. Schedules from Mr G. E. Walker, 28 West End Terrace, Guiseley, nr Leeds, LS20 8LX (65 classes, 48 places plus trophies).

6th December. **HORSFORTH A.S.** Open Show, Greenacre Hall, Rawdon, nr Leeds. Bursching 12.30-2.30 p.m. Schedules from Miss J. Hales, 89 Wellington Road, Leeds LS21 1EE. (phone Leeds 21043).

12th December. **F.B.A.S.** Annual General Meeting, Coorway Hall, Red Lion Square, London, W.C.1.

1971

14th March. **BELLE VUE A.S.** Open Show, Openshaw Boys Club, Crossley House, Ashton Old Road, Openshaw, Manchester 11.

11st March 1971. **TOP TEN A.S.** Open Show, Huddersfield Town Hall.

22th April 1971. **BURY & D. A.S.** Open Show, Church House, The Wyke, Bury.

25th April. **YORK & D. A.S.** Open Show.

2th May. **DERBY REGENT A.S.** Open Show, Sherwood Foresters Recreation Centre (Normanton Branch), Osmaston Park Road, Derby (follow R.A.C. signs). Schedules from Mr R. T. Bull, 35 Queens Drive, Littleover, Derby.

16th May. **MERSEYSIDE A.S.** Open Show.

20th June. **SWILLINGTON A.S.** Open Show.

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Continued on page 264

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