

SEPTEMBER 1969

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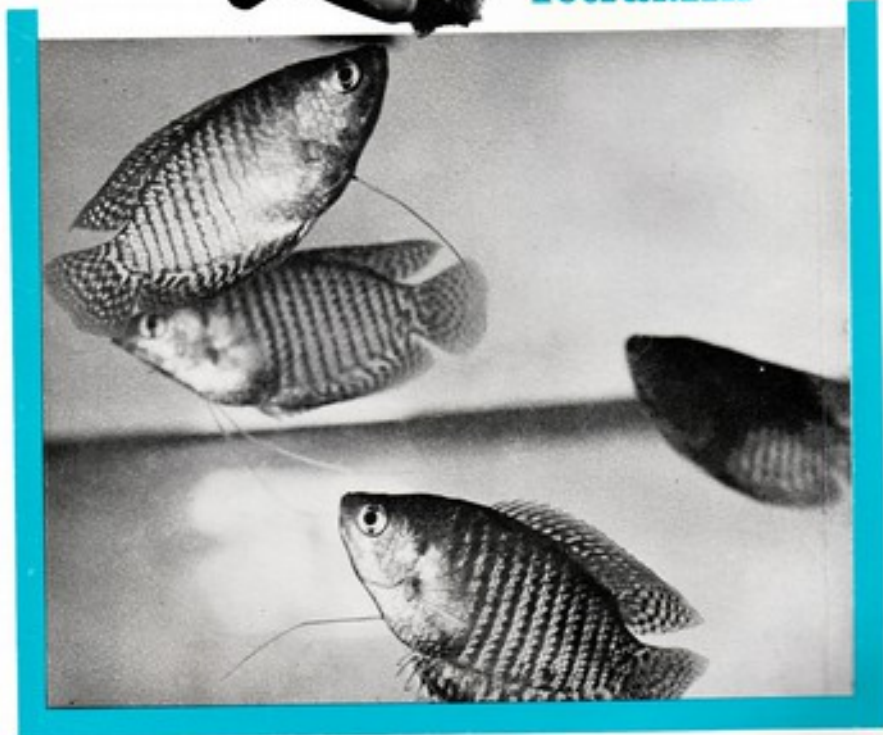
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PetFish

Monthly 3s

Vol. 4 No. 5

September 1969

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In This Issue

	Page
Comments and Quotes	185
Quick Tips	186
Letters	191
For Fish to Eat	192
Transatlantic Topics	193
Readers' Queries	
Answered	194
Some Specials to Watch	
For	195
Guppy World	198
Two Killie Men Meet	
Aquarists in Germany	199
Book Review	200
Personal Comment	201
Brackish Water Tropicals	203
The Aquarium Show	
1969	206
What's New?	207
National Furnished	
Aquarium Exhibition	208
An Experience with	
<i>Pelmatochromis</i>	
<i>guentheri</i>	210
Club News	213
In Brief	216
How?	217
Dates for Your Diary	218

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Comments and Quotes

- Award to a PFM writer ● Goldfish
- on the bottle ● Mollie hybrid

Outstanding Contributor

WE are delighted to offer our congratulations to PFM's contributor Mr Braz Walker on being elected the recipient of the 1968 ANCHOR Award. Since the foundation of ANCHOR magazine, of the San Francisco Aquarium Society, an annual award has been made 'to an outstanding contributor to our understanding of the world of fishes'. Braz Walker's award follows a fine tradition—the first award went to Dr William T. Innes and Mr Al. Klee has also been so honoured. Describing Braz's qualifications the editor of ANCHOR writes:

"This year we are proud to welcome another of the world's distinguished aquarists to this sought-after honour. At 34 years of age, this man has made a remarkable contribution which is recognised throughout the world of amateur aquaristics. Aside from the fact that he has kept numerous fishes for many years and has studied the fishes that he has kept in a depth much greater than most aquarists, he is also recognised as one of the best writers in the field. In his home town, he writes a regular weekly column for the local newspaper and in 1957 he was selected by the SOUTHERN PHARMACEUTICAL JOURNAL as its "Man of the Month". He was named the "Outstanding Self-Employed Handicapped Worker of the Year" in 1964 and in 1968 the Waco, Texas, Jaycees presented him with their "Distinguished Service Award".

'What makes this man so unique, however, is not the number of awards

he has received but the fact that he has been paralysed from the neck down since 1952 when he was stricken with three types of polio. While enough has been written about his afflictions, and we are sure that he is no doubt weary of the replay of them, we feel that it is necessary to mention them so that our readers will understand the tremendous courage and drive which motivates this man. With special typewriter and photographic equipment he does all of his work with his mouth. While this admittedly can be said of many people, in this man's case his mouth is his only tool and he uses it well.'

Tiddly Tiddlers

ALTHOUGH it seems improbable that the goldfish is ever likely to be pulled in for blood alcohol tests by the law (or by G.S.G.B. judges?), the fish would have an advantage over the motorist similarly under legal scrutiny. Scientists using goldfish for studies on the effects of alcohol have shown that the concentration of alcohol in the water of the test aquarium is the same as that in the fish blood, so to test a sample of the tank water is enough to show the amount of alcohol the fish has on board. By measuring the rate at which the goldfish can use up alcohol it has "consumed" by being kept for a few hours in water plus alcohol, R. Kyback, B. Percarpio and J. Vitale of Harvard Medical School and Boston City Hospital found that the fish can cope just about as well as tipsy rabbits and dogs but not as well as mice or rats, who burn the stuff up at about twice the rate of

goldfish. Because of the way the fish equilibrate with alcohol placed in their aquarium, they are useful subjects for alcohol research, say these workers in their report published in NATURE.

Mollie Hybrid

A FISH produced as the result of a mating between two distinct species is a hybrid, and although the number of fish hybrids known to occur is not great it is usually accepted that these are infertile. As would be expected, a hybrid can look different from both parents, even though it possesses characteristics identifiable with each species that produced it. If a hybrid were to occur that could reproduce itself, then, fairly obviously it would be thought of as a distinct species.

A rather unique instance is the little 'mollie' known as *Poecilia formosa*. Only females of this fish have been collected from the southern American streams that it inhabits. They are known, however, to produce youngsters without the presence of a male, although they will mate with males of either of the two species to which they show similarities, namely *Poecilia latipinna* and *Poecilia mexicana*. Could *P. formosa* really be a *P. latipinna* × *P. mexicana* hybrid and not a distinct species at all? It has often been said that it is a hybrid of this kind, and various anatomical features such as the numbers of rays in the fins have



Glass-bottomed boats for viewing underwater life, mentioned in a Quote in last month's PFM, are popular with tourists at Eilat in Israel writes Mr Brian Furner. His picture shows tourists disembarking from the boats at Eilat after a trip on the Red Sea

been shown to be intermediate in character between the features exhibited by *P. latipinna* and *P. mexicana*.

AS announced in our preceding issue, which was a combined July/August number, no separate issue of PFM for August is being published and this issue is therefore dated September. Subscriptions will not be affected as the full number (six or twelve) of issues will be received by all current subscribers.

A completely new approach to the problem has now made it seem even more likely that this little fish really is a hybrid. Biochemical comparison has been made of constituents (proteins) of its blood with those of the blood of a known hybrid produced from an aquarium mating of the two *Poecilia* species concerned. The blood proteins from the two fish were found to be indistinguishable. This work has been reported in the AMERICAN NATURALIST by P. Abramoff, J. S. Balsano and R. M. Darnell.

Quick Tips

IT'S no use pretending that our modern, siliconed, polyurethaned, all-electric fish rooms don't need a 'spring' clean from time to time, they do, if only to recover the array of objects that have fallen down behind the tanks.

As is usually the case in a 'blitz' of this kind we find lots of buried treasures temporarily discarded and out of circulation either because they wanted repairing or just needed a good clean. To help towards this end, here are a few tips . . .

- When disassembling pumps or electrical apparatus for cleaning or repair, the sequence of the various nuts, bolts, washers etc. can easily be retained if they are placed along a strip of adhesive tape fixed stickyside up to the bench top by a couple of drawing pins. The sticky side holds the parts firmly in place and makes assembly that much easier and quicker.

- Fasten a large piece of cork obtainable at most Woolworth's stores to the wall of your fish house. It comes in handy as a pin-up board on which to fasten the various instruction leaflets that are enclosed with most aquarium remedies and equipment. Then, when you need advice on their use it is always at hand. It can also be used for recording breeding information, holding show schedules or just a favourite article on piscatorial matters.

- Worried because those precious prize cards won at various fish shows are getting shabby? If you are good at the game then you obviously can't afford to frame them all. Take heart, the contact adhesive manufacturers now make a clear sheet that is ideal for preserving cards. Lay the clear sheet on a table sticky side up and pin in position, then place the cards face downwards on to this, leaving a small space between each to allow for trimming. Be sure to smooth out any air bubbles that have been trapped.



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LETTERS

Blind Catfish

YOUR article in the June issue of PFM on talking catfish by Braz Walker has tempted me to write about a fish that I have, which may be of general interest to your readers.

I have a large *Acanthodoras spinosissimus*, 5 in. long (a male). This fish has excellent colour and markings but is a freak of Nature because it has been born without any eyes. Where its eyes should be the head is perfectly smooth, with no trace of eye sockets or anything. He does seem to be able to distinguish light from dark, the same way as an earthworm.

Feeding does not cause any trouble as he has a very keen sense of smell. When TetraMin tablets or worms are placed in the tank he becomes very excited, swimming about in circles until he locates his food—this usually does not take long.

I have had this fish about 3½ years. He was at the back of a dealer's tank when I bought him and I thought he would make a good show specimen. I did not see his disability at the time. I wondered if this kind of thing has been done before?

Old Basford, Nottingham.

B. TORR

Collection of Marine Fishes

WITH regard to my article 'Collecting Native Marines' (PFM July/August), I would like to draw attention to an amendment that should have been made to the sentence on the legality of removing fishes from the sea.

For some time before the writing of the article I had been given to understand that the only legal restrictions existed in respect of flatfishes under 3 inches in length. This information came from a usually reliable source, but proved subsequently to be erroneous. In fact, the restrictions apply to all food fishes, including the rarer delicacies such as sand eels, and are explained (if that is the right word to describe such complexities) in various very confusing and unintelligible papers such as the Sea Fish (Conservation) Acts, some of which date back to the middle of the nineteenth century. Basically the legislation is obviously intended to prevent commercial fishermen (trawlers etc.) from over-fishing immature fishes, but the laws are so worded that any person having in his possession a fish of less than the average adult size is liable to prosecution. Actually the Acts state 'for the purpose of sale', but the wording is such that mere possession is an offence. There are exemptions, of course, but these are only for organisations appointed by the Minister.

However, the regulations were not written with marine aquarists in mind, I am sure, and I do not think that the authorities would consider a collector as contravening the Acts even if he did take one or two juvenile plaice. He would technically be in contravention of the laws

though, and it would then be up to the judge to interpret the intent of the Acts under the relevant Interpretation Laws. The penalties are quite stiff, but I really cannot see anyone being convicted. To sum up, if you are taking an edible fish out of the sea, and it is less than normal adult size, you are probably breaking the law, but nobody is likely to worry about it.

London N.W.6.

T. R. HALL
General secretary,
International Marine Study Society.

Mr Hall gave us the amendment to his article before it was published but through an oversight for which we offer apologies the alteration was not made.—EDITOR.

Quarantine Tanks

MUCH as I agree with Arpee (Personal Comment, PFM July/August) about the need for quarantining all new fishes I do not go along with his suggestion that the quarantine tank should be equipped with usual 'furnishing', if by this he means gravel and plants. What do you do if, as so often happens, the new fish show signs of disease a week after it's put in the tank if there are plants present? Move the fish to a bare tank for treatment and so contaminate another container? So many treatments kill plants or are less efficiently applied in the presence of plants and gravel with its trapped detritus that I think it is most important to use bare tanks (with dark bottom) for quarantine having, at the most, some simple rock or slate shelter.

Arundel, Sussex.

K. PRATT

'Ware Missiles

MAY I heartily endorse the comments made by Arpee (PFM, June) on the subject of checking the environment before putting a tank in a room if children's games are likely to take place there. (Unfortunately, this rules out practically every room in the house!) A strictly forbidden game of ball in our sitting room has shattered the front glass of my 3 ft. tank. Water and fish and glass everywhere! The only good thing that has resulted though is that I can now safely set up a tank in the sitting room without any fear that a front glass will ever again be broken from the same cause. The effect of that ball was so awful to the guilty infants as Daddy's fish came pouring out over their feet that I shall never have to repeat that warning again.

Bootle, Lancs.

L. BETHANY

How to Net Fish

MR FAIRLEY'S disagreement (PFM, July/August) with the hint given in May about catching fish in a polythene bag, may I think, be partly due to the fact that no size of polythene bag was given; but just as Mr Fairley takes care to use 'a large deep net' so a large polythene bag can be a very useful way in which to catch some types of fishes. A large bag, with a mouth opening at least half the depth of the aquarium, held in front of a bunch of plants, a gentle swirl with a planting

stick at a strategic position just behind the fish hidden in the plants is an excellent way of catching loaches, *Plecopterus*, knife fishes and a pretty wide variety. Certainly it is the best way to catch larger fishes.

I would also like to warn the beginner that fish can be removed too quickly from the water. I have seen small fishes netted and lifted out of the water at such speeds that they were completely dazed on being dropped into the carrying jar awaiting them. All this is avoided with difficult subjects such as angels if the bag method is used.

Slough, Bucks.

B. WOODCOCK

Amazon Swords at Home

CONGRATULATIONS on the articles about collecting sword plants in South America. I think it enlarges the scope of our hobby to get descriptions of fish and plant collection at first hand. One thing I read in a recent article (PFM, June) really surprised me and made me think how the word 'tropical' can sometimes be misleading—and that was that the water in one of the rivers only reached about 60°F at midday and was even lower earlier on. This is quite cold and not something I would have expected in connection with 'tropical' plants growing in South America. I really always thought of Amazon swords as coming from the 'steaming jungle' type of country. No wonder plants sometimes rot away when first bought and put into water at 80°F.

London, E.5

S. TERRY

Handle with Care!

IN the article on Prickly Fish (PFM, July/August) it was mentioned that some North American species of catfishes have spines that can wound and poison. The common coldwater catfish sold by pet shops in this country was not named but it can certainly stick its handler and cause extreme pain and irritation at the site of the prick. My catfish has grown to about 5 inches in a 15 inch aquarium and when it jumped out last year I was unwise enough to handle it in putting it back in its tank. The puncture mark in my hand was quite visible for several days, and although the event has not lessened my liking for my catfish I shall certainly handle him with a new respect in the future!

Halifax, Yorks.

R. PERCY

The name of the catfish sold for ponds etc. is usually given as Ameiurus nebulosus but the fish is now regarded as an Ictalurus species. The genus Ictalurus was mentioned by our author of the article on Prickly Fish and your Editor is willing to confirm Mr Percy's observations from personal experience!—EDITOR.

IT is regretted that in the advertisement from Johnson's Aquarium and Fish-E-Quip Ltd in our June issue, reference to the British Killifish Association was made without prior permission of the Association's Management Committee having been obtained.

For Fish to Eat

Difficulties of obtaining the niceties of aquarium fare when you are in a strange country with only good intentions to help you

I HAD been posted to Cyprus and, within a few hours of arriving at my destination, I was 'doing some research in the field'. This sounds most impressive but, as any true scientist will confirm, it involves little more than grovelling in ponds and ditches with a couple of jam jars. The object of this particular hunt was to find promising sources of live foods, since I intended to resume my fishkeeping at the point where it had been rudely interrupted by a draft notice.

After investigating several bodies of water, some of dubious origin, I had found nothing of interest to an aquarist. A group of men at the entrance to their village had been following my progress across the countryside, and I decided to enlist their aid.

By R. S. HOLMES

'Hello!' I called.

'Hello!' they replied in unison.

'Success,' I said. 'They all speak English fluently.'

Unfortunately, it proved to be the only word we had in common. It was necessary, once again, for me to resort to my brilliant mime. You will forgive the lack of modesty, I am sure, when I say that after a few fishkeeping tours abroad I was becoming proficient at performing impersonations of a shubunkin gasping at the top of a badly polluted tank. But my talent was wasted on

these chaps. I succeeded only in learning that they liked English cigarettes, and didn't in the least mind accepting them from a lunatic. Then, inspiration dawned.

'Daphnia?' I enquired, realising that the word, like the names of many fishes and foods, was derived from Greek, their native tongue.

'Daphnia!' they almost shouted. Their vigorous nodding, arm waving and pointing in every direction convinced me that the entire island must be a seething mass of water fleas. I began to wonder whether Cyprus was, in fact, an enormous block of 'freshwater coral', built upon countless millions of the tiny crustaceans' shells. Yet I had found nothing.

Above the clamour of their excited discussion I heard the noise of an approaching motorcycle. It drew up in a cloud of dust, and its rider proved to be my salvation. After a brief conference with the others, he turned to me.

'Good afternoon, Mister. You look for the daphnia?'

'Yes. Is there any here?'

'Plenty!' he assured me. 'Please to

go with my friends to drink coffee, and I bring you plenty!

His refusal of my offer of a jam jar made me suspicious.

'You do know what daphnia are, don't you?' I asked. 'Small things that you put into the water, for fish to eat...'

'All Cyprus men know the daphnia,' he said, obviously offended by my doubt.

'What a splendid nation of potential aquarists,' I said, remembering the number of people in Britain who thought that daphnia was either a half-hardy annual or that nice little girl in their daughter's class at school.

My benefactor disappeared down the hill in an even denser dust cloud, whilst I was escorted by at least half the population to the village coffee shop. During the next riotous half hour, I was given several demonstrations to confirm that we all knew what daphnia is, involving pans of water, eating motions and (I thought) rather amateurish versions of my shubunkin mime. Just when these demonstrations were beginning to

lack originality, somebody must have announced the return of the motorcyclist. I was swept, in the rush, back out into the street.

It wasn't a motorcycle at all. Up the street wavered a motor-propelled, luxuriant, dark green bush. I decided that this must be the brainchild of a member of the National Guard, who was out practising his field manoeuvres. If this was the case, my vocation was settled. I would become a government appointed adviser in the art of camouflage. Apart from the fact that this construction was visible for miles against the pale brown landscape, its occupant had selected what was undoubtedly the noisiest bush I had ever heard.

After a leaf-shedding halt, the bush spoke.

'How you like the daphnia, eh?'

I realised why he hadn't required a jam jar. I broke a leaf, and smelled and tasted it. It was a bay leaf. My expression must have betrayed bewilderment rather than delight.

'No good?'

'Yes, very good,' I assured him.

'But it isn't quite what I had in mind...'

He insisted that they were, indeed, exactly what I had asked for. Hadn't the villagers showed me their purpose? I cursed a misplaced comma, and explained what my daphnia were. My description must have lost something in the translation, because the onlookers collapsed, slapping their thighs, in shrieks of side-splitting laughter. I wondered. Camouflage expert... or comedian?

When they had regained their breath and wiped the tears from their eyes, they unanimously declared, through the interpreter, that they had never heard of such ridiculous little creatures, let alone find them. Neither had the interpreter.

'But, what is this "bailiff"?' he asked.

'B-a-y l-e-a-v-e-s,' I pronounced, clearly and distinctly.

'Cyprus daphnia, English bay leaves. I learn,' he said, going into the coffee shop.

So do I, I thought.

Transatlantic TOPICS

THIS column has always campaigned for better relationships between the fishkeepers of the world—an exchange of know-how and goodwill via correspondence, tapes and club magazines. To some societies in Britain it paid off recently in the visit to these shores of Graham Wood, a bundle of energy from the town of Calgary, Canada, famed for its annual stampede.

No-one would have guessed that this Canadian, complete with stetson and the right accent, was born in St. Helens, Lancs., but the fact that he was just a small boy when his folks emigrated may account for the differences.

Editor of 'Calquarium', official journal of the Calgary Aquarium Society, Graham was able to swap ideas with hobbyists during his month's sojourn, visiting groups and shows all over the country. His past work for aquaristics was rewarded with life membership in many British clubs including Merseyside and the Fancy Guppy Association,

the latter receiving a magnificent trophy from him complete with cowboys, Indians and guppies, for competition amongst sections at their international show each year.

If the Canadian Government had deliberately set out to pick the ideal ambassador from their 18 millions, they couldn't have made a better choice!

Why doesn't your club adopt a similar group over there? I can promise the exchange would be profitable to all concerned, but what is more important is that it would bring the opportunity of meeting nice people like Graham Wood.

* * *

One of the nice things about learning a new language, especially if it is a continental one, is that holidays abroad give you the chance to show off before the family and inject a little humour into the everyday lives of the natives.

Nowhere in the world is this more



By JIM KELLY

true than in the United States where so many children grow up bilingual; it's nothing for them to speak one tongue at school and another at home.

But there are languages and languages, and having just completed 12 months' study of Mandarin Chinese I can sympathise with all

those who have to tackle a tongue full of vocal gymnastics.

Much the same can be said about Greek and Latin, especially when it comes to the proper names of our fish. In fact the majority of aquarists would lose no sleep if these difficult to spell and even harder to pronounce names disappeared from the face of the earth like elephants about to die. But if you do find their pronunciation hard to deal with then steer clear of the Islands of Hawaii—what they call their fish looks like something out of the pages of Edward Lear's 'Book of Nonsense'.

To prove my point, just try and get your vocal chords around Humuhumunukunukuapuaa; having sprayed all and sundry in your efforts, pause and politely announce to the uninitiated that this is the trigger fish. At 10 inches he just about outgrows his lengthy name, which means: 'the fish that sews (?) and grunts like a pig'. For those linguistic acrobats that managed the trigger, how about *Lauwiliwili* (*the unpredictable butterfly fish with the long nose*)? After that little lot I feel like uttering, with the American comedian with a long nose, Schnozzle Durante: 'Boy! Was I mortified!'



Owing to the subtle use of darkened interior corridors the aquaria in zoos and other such public exhibits have always seemed brighter and often more attractive than similar tanks viewed where natural and artificial light abounds.

Now, more and more U.S. aquatic stores are taking a leaf out of the professional's books and are darkening the interiors of their shops.

'Not only does it make the fish easier to see,' says one pet trader correspondent, 'but the saving in electricity bills is enormous. What's more, many of my customers have remarked that they don't feel quite as embarrassed in the dim light when they ask those "obvious" questions about keeping fish.'

So far the dark has been the domain of the horror writer, bats and young lovers. I wonder how our readers feel about their local store adopting this idea? Don't keep us in the dark, write in and tell us, please.

Readers' Queries Answered



Live Food

In a stream near my home there are masses of weeds from which it is very easy to collect lots of aquatic insects that look like woodlice. Could I use these as live foods for my cichlids?

The animals are the water louse *Aeolus* and they are not in themselves harmful in an aquarium, nor do they do any damage there. However, if there are fish in your stream it is possible that the water louse population there could be infested with larval worms, for *Aeolus* is an intermediate host in the life cycle of a worm that parasitises fish, known as *Acanthocephalus*. If a louse carrying these larvae is eaten by a fish, the fish then develops the worm within its intestine. In our experience many fishes will not actually ingest the water louse, although they are attracted by its movements and may keep biting the animal. For these reasons this creature is of limited value as a source of live food.

Putty an Unlikely Cause

My tanks have been set up for only 3 weeks. They were brand new and the putty was quite soft. Could soft putty turn the water 'off'? One tank has turned foul and smells very murky and bad.

It is most unlikely that the putty has had ill-effects on the water. Putty in a new tank should be slightly soft; when the tank is filled with water and the pressure pushes the glasses outwards, there will then be a good

seal. Fresh putty, in new tanks or reglazed ones, sometimes causes a thin film of oil to appear over the water surface. This is harmless but can be easily removed by floating a piece of clean newspaper or absorbent paper on the surface, leaving it there for a few seconds until it is saturated, drawing the paper towards the front edge of the tank and then scooping it out. The oil should be adhering to the paper and is thus removed. The cause of the foul tank conditions is most likely to be the rotting of either excess of food or dead plants.

White Worms

I am feeding my white worms on soaked bread and potato peelings. Is this sufficient food for them?

White worms will certainly eat this mixture but a better white worm population is obtained if porridge, to which a little yeast has been added, is substituted. If bread is used it should be soaked in water and not milk as the latter can make the mixture become sour very quickly. Often in warmer weather, white worm cultures tend to become plagued with flies and tiny creatures. These can be dealt with by exposing the culture beneath a strong light for an hour or two. This sends the worms scurrying to the bottom of the box. Then a lighted taper passed across the surface two or three times will quickly kill any insects or their eggs.

Do your fish nets always seem to wear out around the rims before the rest of the net is fit for the trash can? Then take a tip from a Middle West hobbyist who on buying new nets binds the edges, covering the wire frame with binding tape obtainable from Woolworths.

He not only guarantees it doubles their life but he says you will have

less trouble when netting fish, especially those species with hard dorsal rays that always seemed to catch in the double thickness of net around the rim.

Finally, never hang up a wet net or leave it submerged in the water. A quick shake after use is all that it needs to dry them off.

THE AQUARIUM CATFISHES—12

Some Specials to Watch For

By BRAZ WALKER



A species of *Trochocorystes* from South America, among less readily available types of aquarium catfishes

Photographs by the author

THE South American continent embraces its catfish or Siluriform families with all sorts of conditions, and they in turn have developed suitable survival equipment in most cases to achieve success in a highly competitive race for sustained existence.

Some of the developed systems have unique features, others seem to be composites of features 'borrowed' from several other fishes, and some do a job of mimicry so closely resembling the designs of others that it seems as if they should do very well in show business!

Because of the general similarity of basic equipment among the South American catfishes, most were at one time included in the single family, Siluridae, along with other catfish families from over the world. Actually, there are no South American Siluridae, and several sub-families that were once included in this catch-all family have now received family status of their own. Among these are the fishes of the family Auchenipteridae.

Auchenipterid catfishes are quite closely related to the

family Doradidae, the talking catfishes (PFM, June). To the aquarist, the primary physical difference that can be observed externally is the lack of the thorny, recurved hooks adorning the sides of the doradids. Other features are mostly similar, although auchenipterids have a somewhat more typical 'catfish look' about them in most species than the somewhat tadpole-shaped physique of most doradids.

Family Auchenipteridae

Certainly the two most often encountered genera as far as the aquarist is concerned are *Centromochlus* and *Trachycorystes*, and although they are by no means common in the aquarium, they are imported with enough regularity that a watchful aquarist can usually come across one species or another from time to time.

Although I personally am against the indiscriminate use of popular names for aquarium fishes, I am realistic enough to know that, without them, many fishes would never become popular or never sell at all. When a relatively new hobbyist asks the dealer 'What kind of fish is that?', and receives an answer like '*Brachyconglomeratocichla multicolorata*', the dealer has probably not only lost a sale but possibly also stunted the growth of a budding aquarist. Besides, most dealers would probably not memorise such a name. On the other hand if a name such as 'grasshopper catfish' is used, it is easily remembered and creates a somewhat imaginary appeal of its own. A sale is made. If the fish either looks or acts like a grasshopper, which would be a somewhat extraordinary feature, fine.

One of the most attractive auchenipterids, however, has suffered the fate of having been called, among other catfishes, 'midnight catfish'. While the name is quite appropriate, I have personally bought at least five separate species from three families under the name 'midnight catfish'! A more appropriate name would be 'midnight auchenipterid' or 'midnight *Centromochlus*'.

As the name implies, the midnight auchenipterid is black, except for a snow-white belly and a few white spots variously dispersed over the sides and even on to the forked caudal or tail fin, and the dorsal and adipose fins have various flecks of white also. The scientific name of the fish, *Centromochlus anolygicus*, is almost as long as the fish itself.

There are one or two other *Centromochlus* species occasionally imported, usually in shipments of other fishes or under some wholesale listing which is quite unrecognisable as to just what is being ordered. This is unfortunate, because most dealers do not wish to order pigs in pokes and the fish may become labelled as an unprofitable item, depriving the aquarium hobby of exposure since the fish had no simple, catchy name. In reality, it is hardly more difficult to say *Centromochlus* (cen-tro-mok'-luss) than to say *Corydoras*. They are attractive, small catfishes that do not generally molest their tankmates, and, despite their shyness at first and their generally crepuscular nature, they soon find out when feeding occurs and vigorously participate.

Driftwood Catfish

Trachycorystes fisheri, the driftwood catfish, is well named. Few places on earth could be more dangerous to bite-sized fishes than the Amazon and other similar

South American river systems, for behind every root, rock or stump lies a potential predator. Avoiding the jaws of the hunter can be accomplished through swiftness, skill or cunning, but certainly of prime protective value is the ability for the edible to make themselves appear inedible. Living flesh could hardly look more like unpalatable, waterlogged wood than the driftwood catfish after it assumes its position in a pile of brush or among a tangle of roots with which his coloration blends.

There are several quite similar *Trachycorystes* species, all resembling *T. fisheri*, and others which have the same general body form but distinctly different coloration. Some may reach 5 or 6 inches, others much less, but all are hardy, long-lived and mostly harmless. These and other auchenipterids are rather easily sexed at maturity by the elongated anal fin of the male, which is reputed to serve as a breeding organ.

While the general appeal of the driftwood catfish is oddity, at the times when the fish or his other near relatives display themselves they are quite handsome in both form and coloration, and there is a certain amount of fascination in suddenly seeing a fish of good size appear after having forgotten that the creature was in the aquarium. It is also invariably interesting to visitors to have a fish pointed out to them which has remained completely motionless and so well blended into the scenery that they never noticed the fish before their eyes.

Auchenipterids are usually long-lived, easily cared-for fishes and they are seldom accused of making trouble. *Centromochlus*, at 2 or 3 inches, can certainly be trusted with most fishes of average aquarium size, and although *Trachycorystes* reaches 5 or 6 inches after a few years, these are surprisingly compatible with fishes smaller than themselves. It is, however, never wise to press one's luck too far in such matters!

Family Aspredinidae

The 'banjo catfishes' of the family Aspredinidae were apparently popularly named by the natives of Guyana, since in that country they are referred to as 'banjo-man' or by a similar name. Their obvious resemblance to the musical instrument has made them quite popular when available, especially for the aquarist who likes something harmless and unusual. At whatever point in Nature's assembly line beauty is endowed, the aspredinids are evidently routed around that station, because they are in appearance completely unbeautiful.

Although they have at times been split into two families, Bunocephalidae and Aspredinidae, it is now generally accepted that the two sub-families, Bunocephalinae and Aspredininae, are components of the Aspredinidae (-dae designates family rank; -inae denotes sub-family). Since the aspredinids are primarily found in marine and brackish lowland mudflats and seldom far from sea, they are of less concern to the aquarist than the bunocephalins, which are strictly inland, freshwater fishes.

Bunocephalus coracioides is probably the most often seen banjo catfish in the aquarium. This homely creature possesses all the boundless energy of a tranquillised sloth, and is one of few fishes in my experience that can consistently be caught in the hand without a chase. This is not recommended, for the powerful pectorals can give a quite respectable pinch.

Midnight catfish is a name that has been applied to more than one species of catfish. This one is *Centromochlus outopygius* and is best called the midnight auchenipterid.



Driftwood catfish (*Tetricharys fisheri*). Its camouflage markings enable it to capture other fishes careless enough to swim close to it.

Little need to point to the reason for the popular name of banjo catfish given to *Bunocephalus caracoideus* (Guyana, eastern South America). The view here is of the back of the fish.



Banjo cats bury in the sand quite frequently, and they can be quite useful not only in keeping the sand loosened but also by rooting out earthworms, white worms or tubifex that might have been missed. Other scraps also are hunted at night, and they can often reach scraps which other fishes cannot.

Breeding has been observed in the aquarium, although infrequently. The female carries the eggs attached to her belly.

Although the family is small, there are several possibilities for the aquarium, each uglier than the next in a rather attractive way. I personally hope to see them all.



GUPPY

World

'WE shall overcome' are words too familiar in the world today, often prostituted to mean we shall get our own way! Therefore it was refreshing to hear of the saying being used in its proper context and that the efforts of just a handful of guppy folk had overcome the major stumbling block on the foreign show bench, that of the prohibitive price of shipping entries from one country to another.

The pioneers are The Southern California Guppy Association and in particular Helen Bishop, their secretary, an ambassador to all folks in Europe who have the *Poecilia* near to their hearts. Via a Western Union Telegram she informs us that for the first time anywhere, the S.C.G.A. guarantees the return of your money for freight shipment to their International Guppy Show on 31st August 1969.

No, they haven't rediscovered gold in them California hills but have come up with a priceless idea—and like all such, simplicity is the keynote.

After the show entries from overseas will be publicly auctioned and the money received over and above the entry fees etc., will be sent to the entrant. In the unlikely event of the auction bid not covering the amount, the Association will make up the difference. I should add that, unlike Britain, this State has no laws prohibiting the sale of fish other than by those licensed to do so and having heard of the figures quoted at such sales can assure readers the prices offered are often very remunerative.

Entries must include at least five entries for deltatail and/or veiltail classes in each shipping container. Thank you Helen and the S.C.G.A. for bringing a little of that wonderful Californian sunshine into our lives.

By PETER UNWIN

My mailbag often has letters from readers asking why the results sheets from the various shows never print more than the successful exhibitors and the points awarded. 'Why don't they publish the vital statistics such as water pH, DH etc.?' ask these demons for detail.

One answer could be that time and space do not permit, but I can reveal the vital statistics of one well-known breeder's aquarium water, that of Malcolm Delingpole from Birmingham—winner in major shows all over Europe this year and if my crystal ball hasn't fogged up, will shortly be taking similar honours in the New World.

Malcolm draws his water supply from a well, pH 7.4, and the other figures are, expressed as calcium carbonate in parts per million: total hardness, 550; permanent hardness, 272; temporary hardness, 276; alkalinity (to methyl orange), 308. Chlorides, 94 p.p.m.

Readers who know something about the subject will certainly be surprised at these figures, especially that for total hardness, which should cause the 'guppies-love-soft-water' brigade some sleepless nights!

But that these vital statistics are right for guppies is beyond doubt no matter which way you figure it! Mr Delingpole has a very great number of first prizes to back up the claim.

In common with many more guppyatics I also have other hobbies, one of which happens to be that of

collecting records—not the fastest, longest, quickest kind but those unbreakable round discs that cost the earth! Classical record catalogues list a multiplicity of versions of the same composition and the reason preferred when they release yet another interpretation is that fresh listeners to the work are always appearing and so there is always room for one more treatment.

Here we have a simile for anyone who runs a club or writes regularly for the hobby. How does one draw the line between the beginner and the advanced hobbyist? What is news to one is ancient history to the other, so how to cope with the situation? Too many clubs pay the beginner too little attention, generally only enough for him or her to fill in his application for membership blank and pay his fees—the rest is silence.

One way to enlightenment is the controversial exchange often instigated by the columnist and then carried on by the reader via correspondence to the magazine. To start the ball rolling, knowing you won't let me down...

A thermostat fails and you suddenly find that the temperature in the tank is down in the low sixties (Fahrenheit); most of the guppies are lying on the bottom in obvious distress. Now you can either attempt to save them by bringing the temperature up slowly or you can use extra heaters and hot water so up the thermometer reading as quickly as is possible.

Well, what would you do? Perhaps having experienced this event, you have something practical to add to our sum total of guppy knowledge. Either way, it would make interesting reading; you would get your name in print and by writing in answer to my request restore my belief in the humanity of man.

• • •

When a doctor prescribes for our aches and pains we don't usually question his decision. In court, if we should be unlucky enough to fall foul of the law, we don't question the judge's decision even if we have a good lawyer! Yet in the decisions meted out by the fish judge some

Continued on page 207

Two Killie Men Meet Aquarists in Germany

THE visit that I made to Germany in May this year accompanied by my friend and fellow F.B.A.S. Council member Tom Glass and his wife was, in fact, the third leg of a three-point trip planned in 1968. It followed our visit to Denmark to the International Killifish meeting held in conjunction with the Copenhagen Aquarium Society Show last year, and a second meeting that formed part of The Aquarium Show in London in November.

The time available for our visit was all too short—only a week in which to see the numerous fish-keepers in Germany whom we wanted to visit. In the course of this

By **DAVE ELLIS**
(British Killifish Association)

time, however, we travelled something like 1200 miles and collected a large number of fishes to bring back with us, most of which were killifishes, as might be expected in view of our interests. We could have done with 2 or 3 weeks or even more really.

Our visit coincided with the holding of the Congress of the Verein Deutsche Aquarianer (V.D.A.), the Association of German Aquarists, on 9th-11th May and we were, in fact, taken to the Congress on a surprise visit on the third day of the meeting. The enormous attendance of aquarists at the Congress was a very pleasant finding. There were over 300 people there on Sunday and we were told that on Saturday about 450 had attended the meeting. I'm sure these are the sort of numbers we would like to see at F.B.A.S. gatherings.

The main programme of the day was a film show. During the announcements and discussion that



Left to right: Mr T. Glass, Herr Kurt Huwald and Herr George Cattnach

followed we heard the names 'Herr Ellis' and 'Herr Glass' mentioned by the chairman of the meeting, Herr Werner Morgenschweis, and found that we were being officially welcomed and that the occasion was being recorded as the first time that Council members of the F.B.A.S. had attended a V.D.A. Congress. We met several prominent German aquarists including Herr D. Bormann, secretary of the D.K.G., the newly formed Killifish Association in Germany. Herr E. Somann, secretary of the V.D.A., gave us an official invitation to the Congress taking place in Berlin next year. Tom Glass and myself both became members of the D.K.G. and in turn Herr D. Bormann and Herr E. Schwarz became members of the B.K.A.

Through the good offices of Herr George Cattnach, of Mönchengladbach, a number of meetings were arranged for us with aquarists, mainly killifish enthusiasts, in various German towns. A rare privilege obtained for us was a special visit to the Tetramin factory at Melle. Apparently, admission is accorded to very few visitors and we felt very honoured to be shown the mixing and preparatory processes involved in making TetraMin.

Just as in Denmark last year, everywhere we went we were received with the greatest hospitality. As we accumulated fishes that we purchased on our travels, these had to be accommodated in George Cattnach's fish house and by about the fourth day of our visit it began to look as if we had more fishes in his

tanks than he had himself! This is a slight exaggeration, of course, but we did have a special stand erected in the centre of his fish room holding over 20 tanks to keep our fishes in temporarily.

Close to George Cattanach's home was the fish house of Herr Rudi Stroben, a fish house in a basement with a remarkable collection of fishes. Herr Stroben is severely disabled because of war injuries but nevertheless manages to run his fish house in a most impressive way. He is, in fact, planning to double the area available for tanks in the coming months. Among the fishes I saw that were new to me was a Polish tetra that is in fact a long-finned black widow, and there were also some very small, attractive, characins that caught the fancy of Tom Glass but which we did not chance bringing back because of their small size. Another friend of George Cattanach, Herr Willi Schmitz, also has a basement fish room, approximately 10 ft. by 6 ft. in area, and here we saw some interesting killifishes and in addition some golden Lake Malawi cichlids and two young black arowanas that were most attractive.

At Osnabrück we visited the house of Herr Kurt Huxwald, a top killifish enthusiast in Germany, long a famous name to me and a man I am pleased now to be able to call a personal friend. Herr Huxwald's fish room was again an underground one, this time in a cellar.

Another prominent killifish man in Germany that we visited at his home in Woerns is Herr Detlev Luehring, whose fish house was at the top of a block of flats. It was very comfortably equipped with a desk so that Herr Luehring can also use his fish house as a study. Banks of tanks occupied most of two walls and the remainder of the tanks were housed in a cupboard fixed with frontal glass doors. When these doors were closed air conditions were of course kept extremely constant for this batch of tanks. A very large number of fishes was being produced in this rather small fish room, and only by running the room with very great efficiency could such results be achieved. I was honoured to receive a gift of *Rachosia hummelincki* eggs from Herr Luehring as a pleasant memento of our visit.

In Cologne we visited the large fish room of Herr Erik Schwarz, a

photographer by profession and a well-known killifish fancier, about whom I think we will be hearing a lot more. His fish room is not yet complete; it measures about 15 ft. square, but from the methods he is using and what I learned of his plans, it does seem that his activities are yielding very promising results.

The contrast of German methods with the methods that British aquarists commonly employ to breed killifish is very striking. In this country, on the whole, bare conditions are the rule. For top spawners, perhaps a few mops in a bare tank; for bottom spawners, some peat or silver sand on the bottom and perhaps a mop or two floating plants for the female to hide in. Also, we use very little lighting with tanks being shaded for breeding. In Germany, however, the killifish breeding tanks that I saw all contained Java fern and Java moss with sometimes a little peat on the bottom to give a dark base and all of them had strong lighting overhead, either fluorescent or strip lighting. Many of the tanks in use were plastic ones. This was a most striking contrast—the use of lots of light and lots of plants in Germany compared with the reduced lighting and bare tanks used for killifishes breeding here.

George Cattanach lives in a ground-floor flat but his fish house is eight flights of stairs above the level at which he lives. Not only has he to make this climb to see his fishes, he also has to carry water for his tanks up these stairs and similarly convey any waste water, when tanks are emptied, down the stairs for

disposal. To carry on one's hobby in these circumstances demands great enthusiasm! In all, when George Cattanach's fish house is complete, he plans for 50-60 plastic tanks to be accommodated within it.

Apart from the eggs of *Rachosia hummelincki* that I have already mentioned as being one of the biggest prizes we brought home, we obtained several new types of *R. gerysi*, *C. whitei*, *A. cognatum* and a golden *A. australe*. A variety of *A. waltheri* with very brilliant orange showing in the finnage was also obtained and a new *radigii* (S.L. 29), some first generation specimens from wild stock collected by Herr Roloff from Sierra Leone. These were brought back for distribution to B.K.A. members. A *Cynolebias nigripinnis* in which the female had very beautiful markings was another acquisition, also *A. fallax*.

Other species obtained were some *N. guentheri* with red spots on the gill plates, *N. neumannii*, *N. racheosi*, *C. bellotti*, *A. labareei*, *A. striatum* and a pair of *Haplochromis defon-tainen*.

It was fortunate that before my journey I had prepared a number of tanks with peat and soft water in my fish house at home. On my return with 170 fishes I found it just possible to place all of them, though only by making divisions in some of the tanks. Most of the fishes survived the long journey home very well.

By the end of the trip we were feeling pretty tired but we were in no doubt at all that our visit had been welcomed by fellow German aquarists and that the venture was a most worthwhile and enlightening one for us.

Book Review

THE GOLDFISH by Leonard C. Betts. Sixth edition. Illustrated. Soft cover. 45 pages. Hiffe Books Ltd. 5s.

THE edition of THE GOLDFISH just published has been given a completely new look, with a glossy soft cover bearing a colour picture on the front and having a pleasing type and layout of the text. The book describes clearly the varieties of goldfish that

have been developed and outlines the history of the categorisation of basic types for showing purposes (although, surprisingly, it does not disclose that F.B.A.S. and G.S.G.B. have now adopted common standards for goldfish). Keeping and breeding goldfish in ponds and aquaria are dealt with in a way that will meet most of the beginner's requirements, and if the advice given is followed there is no doubt that many more people will be able to develop the enthusiasm for this fish that the book's author has shown for more than 50 years.



Personal COMMENT by ARPEE

EACH year more and more people are buying aquaria and joining in what is one of the most popular of present-day hobbies. I always hope that newcomers will have benefited from the literature on the subject, and from the experience and advice of their fellows, but here and there someone comes to grief and it's not always easy, even for the experts, to say exactly what went wrong. Every book on the subject will give good guidance about the principal lines to follow, and in fairness most beginners do much as the writers say.

The most common failing is to give too much food, and in this case retribution is swift and unequivocal. The wrong can be quickly righted and a new and successful start can be made. It will be gradually evident, after mixed success and failure, that some things are more easily explained than others, whilst still more cannot be explained at all. The simplest example of all is the pair of tanks, side by side, ostensibly set up in exactly the same manner, at the same time, and so on. In one there is dense vegetation and vigorous fish life; in the other are plenty of good fish and hardly any plants. I will coin a sort of shorthand for this (and readers may get bored to death with it in future articles—but we might as well get used to it!): I will call the actuating force behind these odd quirks the *l-factor*, or the factor of locality.

It is an expression of unknown variable factors in a local situation which give rise to the total situation there. It is, perhaps, an admission that we don't know everything, that we cannot readily account for a circumstance: whatever it is, it is important that we recognise it. The degree of uncertainty it introduces into our activities enables the hobby to put out its challenges even to the old hands, and to confound them as easily as the novices. This will give heart to the newcomer who may be inclined to 'chuck it' one day because his guppies have died. (I expect Jim Kelly will readily admit to this having happened to him once or twice in his career!) It also provides each episode of your time in the hobby with a uniqueness of its own.

It would be dull indeed if your tiger barbs bred, trouble-free, every time you put them together, and if every plant you put in flourished without check. The *l-factor* will give us food for a lot of thought, and will keep us going when we begin to think we have never learnt anything from our experience. But above all, at this particular juncture I hope it will help to anchor our new friends to the hobby and enable them to realise that patience and experiment, discussion and reading, observation and record, together with many other things, including pure luck, are essential ingredients of fish-keeping. It follows that newcomers should communicate

their experiences to those who, although having already passed that way, have failed to notice the one thing that was important—the *l-factor*!

I hope this may encourage increased correspondence from beginners who want to relate what their successes or failures are. One thing is quite certain: no-one need be in any fear that he will be laughed at for admitting to a certain failure, however elementary it may appear to have been, as the tabling of the problem may well stimulate investigation hitherto not undertaken, and this could end up as an important all-round benefit.



Some time ago I recorded the confession that I had never kept a catfish. I was referring, of course, to the enormous family of tropicals including the *Corydoras* genus, and not to that gruesome scourge of the coldwater world—the European catfish, which even today one finds on sale by dealers who ought to know a jolly sight better.

This latter creature is the olive and black monster one finds available each spring with the first importations of goldfish from the continent, and hundreds are sold to unwitting beginners who are glibly assured that they are the best possible scavengers. For those who dislike goldfish this is probably true, as they soon thin their ranks with most savage attacks and clear up what is left. They are best left on the dealer's hands; it is then his problem what to do with them, not yours.

Reverting rapidly to kinder topics, the tropical catfish are of altogether different disposition and present even the beginner with the greatest possible rewards for no more than average care and attention. They are completely peaceful, have no peculiar requirements apart from alkaline water, and put up with overcrowding more willingly than most aquarium fishes. This is because they are able to store atmospheric air—which they gulp in periodically after lightning darts to the surface—in an internal cavity. They grow to about 3 inches, but take their time getting there, and the only ultimate problem is with which other species one should associate them. They usually average a little over an inch in size when bought, and if they are not given every opportunity for growth they will never attain full dimensions. In this event it is safe to use them in rearing tanks, where they will fossick around the bottom and clear up all the scraps, and where the fry (presumably of middle or upper water dwellers) will act as foil to them.

I have had a dozen cats in a rearing tank containing thirty or so White Clouds, and the results have so far been satisfactory and pleasing. They may be slightly more difficult to absorb as adults, as at full size they really demand quarters of their own. Somehow I picture them with sharks and tinfoil barbs—in the mind's eye the prospect is quite agreeable, though I am not able to speak from experience as yet. The *Corydoras* are not particularly bold, and although they harmonise well with the water bed, seem to get quite alarmed when you approach the tank and scutter away rapidly to the security of the nearest hiding places. For this reason their tanks

should be furnished with plenty of rockwork; there is no need to worry that they will disappear behind it for all time, as they are always on the move, and only occasionally take time off to 'bask' on the smoothness of a convenient plateau.

It is always foolish to handle fish, and if you attempt to do so with a catfish this may well be underlined when you get a sharp jab from the hard rays which emanate from the pectoral fins (and from the dorsal and the adipose, too!). You will be asking for trouble, too, if you put catfish into an old malmy tank, as the water will be transformed into thick soup before your eyes, and as the *Corydoras* generally prefer lower temperatures, choose their associates most carefully. You will find them amusing creatures, if a trifle distant. None is likely ever to take worms from your fingers like the botias, but their nervousness is tolerable and not the irritation it can be with some fish. You may be sitting quietly and hear a persistent rattling from the catfish tank, and this is almost certain to be the sand or gravel from the bottom of the tank being hurled against the glass whilst one of the inmates tunnels vigorously for some titbit which has penetrated the surface.

The leopard cat is easily the most popular variety, followed by the bronze and the peppered or mottled. There are dozens to choose from and it is a real poser to know when to stop. You should not ignore the claim of the dwarf catfish when setting up your collection. This (*C. hastatus*) is the only one that swims in mid-water, and the possibility immediately arises that here is the ideal companion for many of the bottom dwellers if introduced in sufficient numbers. If you decided on this, great care would have to be taken not to introduce any other fish that might harm this little beauty. It is not robust, and deserves the rather privileged treatment it demands.

Breeding of *Corydoras* is not out of the question, and many aquarists have had success with the commoner varieties. I often wonder whether the similarity of the colour pattern of the fish with that of the sand or gravel of the tank bottom may have any effect on the likelihood of breeding, and the *Corydoras* may present a good opportunity of putting this to the test. It is certain that the cleanest possible surroundings are essential, so this is a good starting point.

Incidentally, I wonder how *Corydoras* etc., first got the name of cat fish? They are not particularly pussy-like in either appearance or habits, and they remind me much more of mandarins or old-time music hall comedians. Perhaps their habit of picking things out of dustbins tipped the balance!



Last summer the club was asked to put on an exhibit at a horticultural show on a date which clashed with that of the club's own annual exhibition. As members of the aquarists' society were entering their own fishes for their own annual show it looked as though it would be a job to muster much to impress the gardeners. However, our dealer came to the rescue with some equipment and promised some fish if they were needed. We decided to furnish one tank really well and to stock it with one large shoal of the same variety. As some splendid cardinals

had just arrived at the shop we pictured a really imposing display. Nearer the day I got cold feet and decided to substitute my own minnows and poonies for the cardinals, as, if anything went wrong, the loss would be rather more bearable.

Everything went off perfectly well and we resolved to try and repeat the performance next year, using cardinals or neons this time just for a change. Now the other evening I was talking with a friend of mine who shared the exhibition work with me last summer, and who has contributed certain items to the tank. He mentioned that he had some losses of fishes in a new tank he had recently established, and that these had comprised neons and cardinals and glowlights. The trouble was traced to the gravel, which had been emitting alkali all over the place. Since this very gravel had been used in the tank at the annual show, my accidental choice of minnows for the subject fish was a very lucky one.

It was ironic to learn that my colleague had bought his tank and contents from an aquarist who was giving up the hobby because he kept losing fish! If only he had kept zebras or minnows he might have been well up in the business by now.

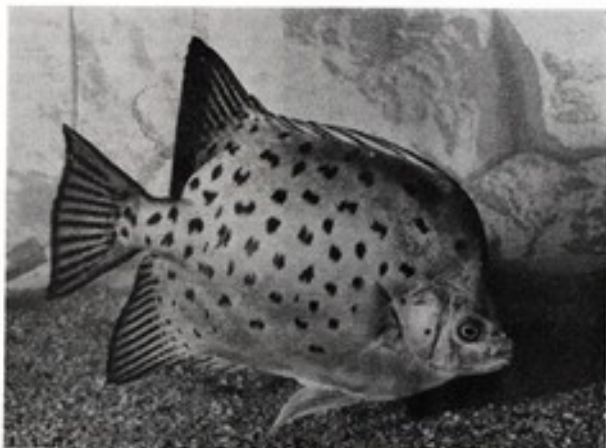


From time to time one hears of a club or society running into the danger of extinction for one reason or another. With the hobby achieving greater and greater popularity all the time it is not easy to understand quite why this happens. In the interests of those who are having a thin time I wonder whether organisers of the more successful and thriving clubs could offer some practical advice to their less fortunate contemporaries! All clubs experience the dearth of organising talent from time to time, and the energy of their members seems to vary for no readily accountable reason. Bridging these gaps calls for the utmost patience and hard work, coupled with some sort of basic faith on the part of the committee.

There must be some golden rules affecting the general success of a club, and if we can collect enough of them from your reactions we might try to assemble them in some sort of shape in a future issue. It may well be that fringe events like sales of stock, car rallies and similar social events may help hold clubs together, but if such trivialities form the main structure it is not surprising that it gives way in the long run. There are two factors which seem to me to be especially important, but I have no doubt at all that practically every reader will give different personal ratings of what makes a club tick. My first impression is that communication, and regular communication at that, with all members is of prime importance. The best medium for this is a news sheet of some sort. It need not be written in literary style, but it must be typed and put together accurately; nothing is worse than a bulletin full of errors, as it makes the club look absolutely inefficient and inept. If you have a bulletin arriving each month it gives you a nudge to get along to the next meeting or the opportunity to stay away and send

Continued on page 205

Brackish Water Tropicals



Photo

BARRY PENGILLEY

A brackish water fish commonly kept by aquarists is the scat: this one is the 'silver' scat, *Scotophagus argus*

These in-betweens of the water world—fishes that live where sea and rivers meet—include some quite popular aquarium species

By N. POLUNIN

AMONG the best-known tropical brackish water fishes are the puffers, the archer fish, the monodactyls and the scats. Such fishes do not necessarily live totally in brackish water, for, like the salmon, many ascend rivers to spawn. The monodactyls, for instance, ascend rivers in huge shoals, whereas the archer fish tend to remain in mangrove swamps where there is a great wealth of insects upon which they feed.

Other tropical brackish water fishes include the half-beak (*Dermogenys*), the bumble-bee (*Brachyogobius*), the leaf fish (*Polycentrus*) and the stripey (*Therapon*). They are therefore a most varied group of fishes in shape, coloration and habit. It will be found that for nearly all tropical brackish water fishes a small amount of sea salt in their water is needed if they are to reach full size. Changes from fresh water to salt water or vice versa should not be carried out too quickly, and ideally should take place over a number of days.

For these reasons members of this group provide excellent tests of the ability and skill of the would-be marine aquarist, for they can give him a taste of what he will come up against in keeping tropical marine fishes

Puffers

Of the puffer fishes, family Tetraodontidae, some can live only in fresh water and some only in sea water, whereas such species as



The archer fish (*Toxotes jaculator*) is another 'freshwater' fish that is tolerant of salty water

Photo
RUDA ZUKAL

Tetraodon lineatus and *T. catenatus* are found in both.

These fishes as their name implies, are capable of blowing themselves up into a ball with water or with air whenever danger threatens; this method of defence is used far less in smaller specimens than in larger ones.

Tetraodon lineatus has a white underside, and the rest of the body is mostly green with large black spots at intervals. The green colour is much brighter on the upper half of the head, and the fins are transparent. The coloration of *T. catenatus* is less striking, being made up of patches of olive brown, but it has a reddish eye.

Puffers have very strong beak-like teeth with which they are able to crush the hard shells of crustaceans such as crabs—a feat of which most other fishes are incapable. They are therefore best fed on pieces of crab meat, shrimp or earthworm; they will hardly touch *Tubifex*, let alone dried foods.

An unfortunate characteristic of puffers is their aggressiveness, both to their own kind and to other smaller fishes, and they also tend to be greedy. This means that they are almost constantly fighting one another, if kept in groups, and that any other smaller fishes with them frequently are so deprived of food and have such tattered fins that they die. Puffers are therefore better kept alone as single individuals or with different larger fishes, and it is for this reason that they are extremely difficult to spawn in captivity though this has been done.

For locomotion puffers use their pectorals, though with slight undulations of the dorsal and anal fins. They are capable of swimming at high speeds over short distances, and use their tails for steering; movement of the latter is more marked when the fish is frightened—in which case the tail is curved around at right-angles to the body axis.

Archers

The archer fish, family *Toxotidae*, of which the most common species is *Toxotes jaculator*, are possibly the most amusing and interesting of all the tropical brackish water fishes. The shape of the body is almost triangular

and the fish has a very flat head, as do most surface fishes. It is mainly silver in colour, with six black vertical bands—the first of which passes through the eye, the last across the caudal peduncle. At the base of the dorsal and anal fins can usually be seen a yellowish tinge.

The archer fish is so called for its ability, by means of a jet of water, to shoot down small insects resting above the surface. In the roof of the mouth is a narrow inverted V-shaped groove, which, when the tongue is placed over it, forms a sort of tube, and it is from here that a jet of water of great accuracy and considerable range—up to 4 feet—is ejected. The Archer sees an insect above the water, aims, fires, and, if its 'archery' is accurate, as it usually is, the victim falls and is devoured.

In captivity the archer becomes fairly tame and is best kept in shallow water in a deep tank. Long creepers, planted outside the tank to hang down over the water, give the whole a more natural look as well as providing suitable surfaces for insects to perch on. Although adapted to this sort of hunting, archers will also take other kinds of food such as pieces of shrimp. As yet, consistent external sex differences are unknown in *Toxotes*, as with the puffers and, apparently, most other tropical brackish water fishes. Archers have, however, been spawned successfully in captivity.

Archers are slightly less aggressive than puffers, though in a tank containing a number of the fish, the younger specimens tend to be killed off. Like the puffers, they are capable of swimming quite fast, but they use their tails much more in doing so.

'Monos'

Monodactylus, family *Monodactylidae*, live mostly in the brackish water near the mouths of large rivers, which they ascend in shoals to spawn. Among them *Monodactylus argenteus* is the most common, in captivity though *M. sebae* may occasionally be imported into England.

Their body shape is vaguely triangular and very similar to that of the freshwater angel fish, though more

rounded, for the first rays of the anal and dorsal fins are thicker and longer than the rest; in the monos, however, these projections are covered with scales. *M. argenteus* has a much more rounded, disc-like shape than *M. sebae*, and is mainly silver in colour, especially in older specimens. There are two vertical, but slightly curved, black bands—one through the eye, the other just crossing the operculum—which almost join at the top. The anal fin is fringed with black, and in younger specimens the anal and dorsal fins have a yellowish colour. *M. sebae* has three bands—the same two as in *M. argenteus* and a third, which runs in a slight backward curve from the tip of the first ray of the dorsal fin down to that of the anal fin.

The monos are comparatively harmless, gregarious fish. Feeding them is not too difficult as they will take *Tubifex*, brine shrimp, and some dried foods, though plant matter, either in the form of lettuce or pond algae, should be given occasionally. As with the next family, these fish have apparently not been spawned in captivity.

Scats

Scats, family Scatophagidae, like the monodactyls, tend to live in large shoals and spawn in fresh water; they are therefore not abnormally aggressive. Unlike the archer fish, they have no particularly interesting characteristics, and are only enjoyable to look at, though this beauty decreases with age.

Scatophagus argus is mainly silver in colour, with black spots. The spiny dorsal and anal fins are much darker than the others, which are mostly transparent; younger specimens are far more orange in colour.

The feeding habits of the scats are very similar to those of the monodactyls, but they are more herbivorous than the latter and must be given plant matter occasionally. This may be given either in the form of lettuce, or as pond algae, if there is none present in the tank. As with the previous family, spawning has apparently not been achieved with the scats in captivity. The generic name *Scatophagus* means 'excrement-eater' and refers to the claim by one of the first Indian ichthyologists that he had discovered excrement in the stomachs of several specimens.

How Much Sea Salt?

ALTHOUGH there is no precise salinity requirement for brackish water species the aquarist who wants to try to keep some plant life in his aquarium needs to ensure that the tolerance of his plants for salt is not exceeded. Few aquatic plants will survive for long in the 1:1 or 1:2 mixtures of seawater and freshwater often recommended for brackish water fishes (in the presence of scats few aquatic plants are likely to survive for long in any conditions, since they are great plant-eaters!).

Some plants will become habituated to a 20% sea water (i.e. 1 of sea water : 4 of freshwater) and such a salinity will be acceptable to the fishes. When topping up the brackish water aquarium to make up evaporation losses always use freshwater, not seawater or brackish water; water removed from the tank by siphoning and discarded must, of course, be replaced by a mixture of seawater and freshwater of the same composition as that used in the tank originally.

Of the other kinds of fishes that will thrive in the brackish water aquarium *Polycentrus* is the only fish that is particularly difficult to change from fresh water to salt water. It looks rather like a leaf, as its popular name indicates, and tends to feed mostly on small fishes; it usually moves around slowly, so as not to attract attention, but can strike very quickly when prey is within reach. The half-beak is viviparous, usually silver in colour, and rather cannibalistic for its size (maximum 4 in.). The bumble-bee has a maximum length of about 2 in. and is one of the few members of the Gobiidae who can live in freshwater.

Personal COMMENT

Continued from page 202

a donation instead if the evening's speaker is the club bore on his pet subject again. Once a newsletter goes by the board the links with members weaken or snap, so for my money it is a vital part of the works.

I am personally much less impressed with table shows and lectures than meeting others and having a chat with them, and I have often got up from a club evening after an indifferent lecture and heard members saying what a waste of time it was, and what a pity it was that old Jones went out half way through as they wanted to know how he was getting on with his new killies. Thus I place a high premium on the inbuilt goodwill and company of the membership who take the trouble to turn out for a club

evening both when the sun is shining or in the middle of winter. A really good line in light refreshments and the pleasure of meeting some of the better halves of members can make the difference between a pleasant evening out and a duty visit that won't be repeated in a hurry.

A recent innovation—but this seems to be somewhere on the way to desperation—is for meetings to take place in the local pub. The distractions are obvious, or it may be that the members have discovered something of aquatic interest in the beer, but I cannot see a really great future in this sort of manoeuvre. If the annual exhibition is to be anything of a success the club must first be on a sound footing in respect of its membership. I am sure our hobby will benefit very much if the club structure can be strengthened and widened, and I hope this column will draw some of the expertise from where it is greatest to where it is most needed. So if you can think of any formula for baiting, cajoling or shaming the non-active member into more fruitful participation, please let me know and I will see that everything printable is published.

The Aquarium Show 1969



Wednesday 29th October to
Sunday 2nd November
at the Royal Horticultural Society's Old Hall
LONDON S.W.1.

● **TABLEAUX** arrangements of furnished aquaria again promise to provide one of the major spectacles at the **AQUARIUM SHOW 1969** in London this year. Arrangements to accommodate more tableaux than last year have been made and entries are still being received. Any society requiring details of the Tableaux section and an entry form should write to PFM's offices. Last year's participants found that quite a boost to membership was given as the result of the displays they put on.

● **TRADE** displays at the **AQUARIUM SHOW** promise to be the fullest seen at any public event since last year's show and several leading firms additional to the foremost manufacturers and suppliers who were represented in 1968 will have their products on view.

● **SPECIALIST** societies who will be displaying the arts and crafts connected with their interests at the **AQUARIUM SHOW** include the British Killifish Association, the Fancy Guppy Association, the Federation of Guppy Breeders' Societies and the Goldfish Society of Great Britain. Internal competitive events are also being held by some of the specialist groups. Visitors to the show will be able to obtain specialist advice on the fishes represented in these groups.

● **BEST** society tableaux will be judged from the results of a ballot in which everyone attending the show can take part.

● **THE AQUARIUM SHOW** will open to the public at 2.0 p.m. on Wednesday, 29th October, and at 10 a.m. on succeeding days. The show will close each evening at 9.0 p.m. (earlier on Sunday). Tickets at the reduced rate of 2s 6d for adults, 1s 3d for children, can be obtained by ordering (with remittance sent in advance) from PFM's offices for parties of 12 or more. These concession rates apply only to advance cash bookings and cannot be made available to unbooked parties arriving at the door during the course of the show.

● **SHOW** schedules and entry forms for the individual fish competitive display have been sent out and additional copies can be obtained from the Show Secretary, Mr H.

Towell, at PFM's offices. Entry is open to all, society member and non-member alike. There are 25 classes and each entrant can put two fish in each class (final closing date for entries is 30th September):

- B Barb
- C Characin
- D A.o.s. Cichlid
- DA Angel
- E A.o.s. Labyrinth
- EA Siamese Fighter
- F Egg-laying Toothcarp
- G A.o.s. Catfish
- H *Corydoras* and *Brochis*
- J *Rasbora*
- K Danio and W.C.M.M.
- L Loach
- M A.o.s. Egg-layer
- O A.v. Male Guppy
- P A.v. Female Guppy



Last year's tableaux by Portsmouth A.S. showed furnished tanks surmounted by harbour scene with realistic submarine

- Q Swordtail
- R Platy
- S Mollie
- T A.o.s. Livebearer
- U Singletail Goldfish
- V Doubletail Goldfish
- W Native and Foreign Coldwater

Goldfish classes U and V are subdivided:

- UA Common Goldfish
- UB London Shubunkins
- VF Orandas
- VII Lionheads
- VB Fantails

Some specially attractive trophies are being awarded in all classes as well as the special challenge trophies.

● **JUDGES** at this year's Show are (from the F.B.A.S.) Mr D. Ellis, Mr D. Hancock and Mr F. Tomkins, with Mr J. M. Skinner of the F.N.A.S. There will also be specialist society judges for goldfish (G.S.G.B.) and guppies (F.G.A., F.G.B.S.).



Remember "Tubby Isaacs" and his stall! Detail of models that formed part of the East London & D. A.S. tableau at The Aquarium Show 1968

Guppy World

Continued from page 198

competitors question and probe with such vehemence they make the Spanish Inquisition look like a stage musical!

Worst offenders seem to be those showmen who on examining the judging sheets find that their entry has no marks against it and immediately jump to the conclusion it hasn't been judged. A terminological inexactitude.

With increased entries on the show bench, coupled with a shortage of both trained adjudicators and time, the system of 'gate judging' is often employed. The judge visually examines the fish in question and discards 50% of the entries. This takes experience and know-how but I have found the snap decisions of judges to be extremely accurate.

SECOND International Livebearer Show (end of August): Mönchen-Gladbach Fish Society (Mr G. Cattanaach, 405 Mönchen-Gladbach, Bergerstrasse 118, Western Germany).

Hence the barren columns against some of the exhibit numbers.

Should you find your guppy to be one of these why not have a quiet word with the judge! It may have been that your fish was too small, a fault that time and good husbandry

can correct; or maybe that the particular strain is displaying some major fault that future breeding can alter.

Having paid your money you have little more to lose so why not try it? Too often the squawk of anger finds solace in the squeak of complaint.

What's New?

Small Grolux

OF special interest to the small tank owner is the news from Smart & Brown Lighting Limited (Mitcham, Surrey) of three new additions to their range of **Grolux** fluorescent tubes. This firm is now supplying 21 in. (13 watt, $\frac{1}{4}$ in. diameter), 15 in.

(14 watt, 1 in. diameter) and 12 in. (8 watt, $\frac{1}{4}$ in. diameter) lengths. Control panels for these sizes are also available.

Foods for Small Species

SMALL fishes have received special attention in the new food formulations from **TetraMin**. One of the two new complete balanced-diet foods issued by TetraMin, Tetra FD-Menu, has been especially developed for small fish. The second food, TetraTips, it is claimed, is suitable for even delicate species such as the clown loach. TetraMin large-flake Staple Food, however, is still recommended for the larger species, as the TetraTip tablets get swallowed whole by angels and large cichlids, which is not the way they were intended to be fed.

National Furnished Aquarium Exhibition

Bradford's second national show draws increased entries and attendance



A DISPLAY of marines and 'miniature sharks', an alligator pool and a water garden display all added to the enjoyment and interest of the crowds of visitors who went to the second National Furnished Aquarium Exhibition—the queue to enter the hall was a permanent fixture throughout Saturday and Sunday afternoons.

There were over 100 decorated tanks on display, and some commendable effects were achieved. It was also clear that the quality of the fishes themselves played an impor-

Photographs by
**BARRY
PENGILLEY**

Fish in the furnished aquarium judged first were *Barbus orullus* (entry by Mr J. E. Taylor of Blackpool)



Second best furnished aquarium: red-eyed characins (*Arnoldichthys spilopterus*). Entry by Mr D. Shields of Halifax, who also gained third prize with the set-up pictured opposite

Third furnished aquarium. The fish are *Rasbora elegans*



tant part in gaining points for the prize-winning tanks. The *Barbus arulius* used in the winning display were particularly fine. This tank was set up by Mr J. Taylor of Blackpool, using Indian fern, wisteria, *Cryptocoryne*, *Sagittaria* and *Myriophyllum* displayed against red stone.

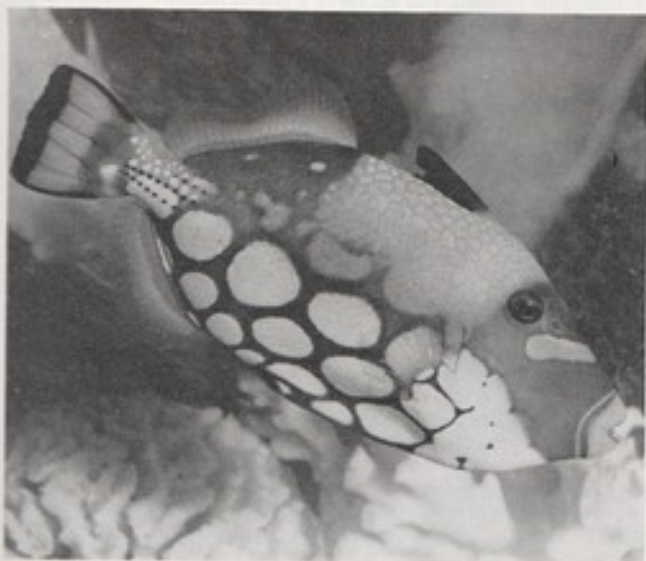
The first award-winning tank in the marine section attracted a lot of interest. This had been entered by Mr Sanderson of Southport, who

had gathered the starfish, hermit crab, sea anemones and the rocks and shells locally in Southport.

The list of prize-winners is as follows:

1. Mr J. E. Taylor (Blackpool), 82½ points, *Barbus arulius*.
2. Mr D. Shields (Halifax), 81½ points, *Arnoldichthys spilopterus*.
3. Mr D. Shields (Halifax), 80 points, *Rasbora elegans*.
4. Mr T. A. Hardman (Bury), 79½ points, Tiger barbs.
5. Mr J. E. Taylor (Blackpool), 79 points, Harlequins.
6. Mr R. Johnson (Bradford), 76½ points, *Hyphessobrycon serpaes*.
7. Mr H. Greenwood (Wilsden), 76 points.
8. Mr P. Hughes (Mold), 73½ points.
9. East London A.S., 73 points.

Best Marine, Mr D. W. Sanderson (Southport), 76 points.



This beautiful clown trigger fish *Lottsoides conspicillum* attracted (Bolt) of attention at the Furnished Aquarium Show in a display marine tropical aquarium.

An Experience with *Pelmatochromis guentheri*



Both fish display to one another with fins held rigidly outspread and gill covers raised. The female of the pair is at the front.

By **RUDOLPH ZUKAL**

Photographs by the author

Translation by F. MARSH

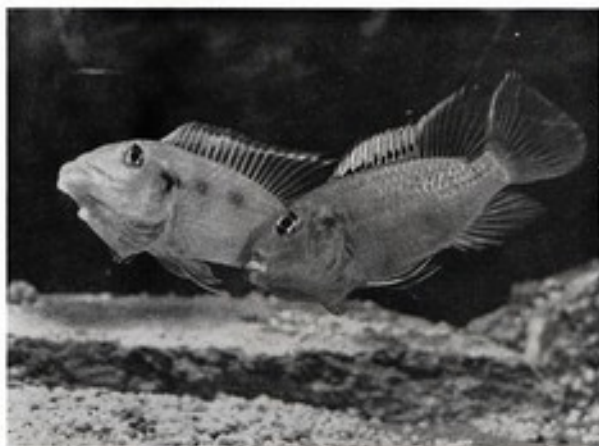
A GOOD aquarist friend of mine surprised me one day when he said that he wished to get rid of a pair of beautiful, though large, fish that he possessed. They were continually stirring up his tank and he thought he would have to destroy them as he could not find anyone to take the fish off his hands. Attracted as I am to all living things, I could not let this happen and said that I would myself take them on.

I prepared a 30 in. tank for them, filled with normal tapwater brought up to a temperature of about 78° F (26° C) and furnished with big stones but without plants, since my friend had already warned me that the fish were expert at uprooting plants. However, when the fish were put in the tank they seemed to be extremely timid. Their colours were very pale and they had suffered a certain amount of fin damage during the journey from their home tank to mine. So I left them in peace to settle in and sought some information about them in the literature.

The fish originate from the coastal waters of West Africa, which lie in the tidal zone and in which the salt content varies considerably as a result. They were described as early as 1882 by Sauvage and again in 1898 by Boulenger under the name *Pelmatochromis kingsleyae* (Herr Meinken indicates that *P. guentheri* and *P. kingsleyae* are closely related if not fully identical).

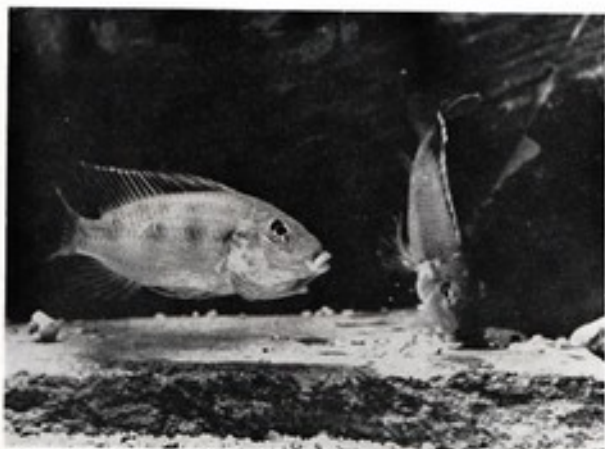
These mouthbreeders are very strong, with large, puffy lips. Professor Günther Sterba gives the size of the male as something over 6 in. though the female remains substantially smaller. The colouring is very variable. The adult female is beautifully coloured. Fins are darkly bordered and the dorsal fin carries a line of dark spots.

Here the female is seen pushing against the side of the male, who a few seconds before had been tugging at her fins. This behaviour is all part of the courtship in *Pelmatochromis guentheri*

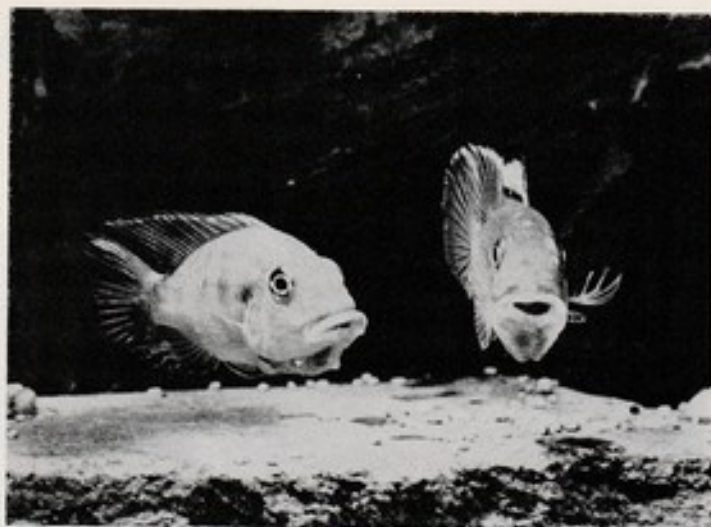


They are undoubtedly territorially minded fish, and they will take over their chosen area and defend it from other fishes. With my pair, they hid in different corners for several days and whenever the female approached the male she was very roughly handled by him. They eat large quantities of food and are not at all fussy about what food they take though they do prefer food that sinks to the bottom. They must, of course, have some live food and should also be given some vegetable matter, such as spinach, lettuce, duck weed. They also certainly did churn up the bottom of the tank, though they never did it during the daytime. Then they remained timid and hidden. The only time they approached the glass was at feeding time, when they would snap up the food like lightning and immediately swim back into hiding.

One night, at about 11.0 p.m., I heard loud noises coming from the



Cleaning the flat slab of stone selected as spawning site begins. The male (left) watches the female before taking his turn



Both fish over the spawning stone. The large puffy lips to the mouth of this species are clearly visible in this picture

tank, just as though someone were throwing tiny stones against the sides. When I put the light on over the aquarium a lovely sight met my eyes. The fish had started to breed. I rushed to get my camera and took the photographs accompanying this article. Amazingly enough, these fish that were usually so timid were not at all disturbed by my photography.

The spawning preliminaries lasted for about 2 hours. Both fish were now beautifully coloured and swam about the tank with fins widespread. As they drew closer the male would try to tug at the female's fins, which would cause the female to turn, spread her gill covers and push violently with her jaws at the male's belly. The female chose a flat stone for the spawning place and proceeded to clean it while the male continued the courtship display. Sometimes the fish changed roles and it was the male that would be doing the cleaning. Large stones were also taken into the mouth and immediately tossed out.

When the time came for the eggs to be laid (the female's ovipositor was quite small and not easy to recognise), the female ejected the eggs in a stream and moved away to enable the male to fertilise them. Each time, after this process was completed, the parents took the eggs into their jaws, turn by turn, first the female and then the male.

It was quite funny to observe the pair after the spawning was completed. Beforehand the male was clearly 'master of the house'; afterwards, his colouring changed, the striping became evident, and he hid himself timidly in a corner of the tank behind a stone.

Since some experts assert that a certain amount of jealousy becomes apparent over the care of the brood, I decided to exercise prudence and took the female out. Unfortunately, she spat the eggs out of her mouth in her nervousness. I threw the eggs back into the tank with the female but she scurried away and wouldn't pick any more up. The next day she took up food, the eggs were lost—apparently devoured. The male continued to care for the other eggs without taking nourishment for 4 days. Unfortunately, after this his eggs were also eaten, probably through him being disturbed in some way.



THE DINNER and dance held by the **GOLDFISH SOCIETY OF GREAT BRITAIN** to celebrate their twenty-first year proved a most enjoyable occasion for the 73 members and guests present, some of whom had travelled vast distances (two from America) to attend. Guest of honour was Mr Ted Jessopp, chairman of the F.B.A.S., who commented on the very close and friendly liaison that existed between the two organisations.

The Society's A.G.M. has also taken place and the officers now stand as follows: president, Captain L. C. Betts; vice-presidents, Mr M. D. Chase, Mr O. D. Taylor, Mr B. J. Upchurch; chairman, Major G. H. O'Neill; secretary, Mr W. L. Wilson (57 Constable Gardens, Edgeware, Middlesex); assistant, Mr G. A. Fleming; treasurer, Mr W. F. Walters; show secretary, Mrs P. Whittington; public relations, Mr J. Linnale; bulletin editor, Mr H. Whittington; technical co-ordinator, Mr J. H. Bundell; lay members, Mr A. R. Sutton, Mr E. Palfrey, Mrs W. Wilson. Details concerning the objects of the Society and membership may be obtained from the secretary.

CLASS winners at the BURTON & D.A.S. annual show, at which the best in show award went to Mr D. Toplin, were as follows.

Anabantids: Mr C. Parker. Fighters, Mr D. Hartsheave. Barbs, Mr D. Toplin. Characins, Mr C. Parker. Cichlids, Mr T. Bowler. Barboras, danios and minnows, Mr D. Toplin. A.O.V. livebearers, Mr D. Toplin. Cats and loaches, Mr J. Hunt. Cichlids, dwarf, Mr G. Mead. Sharks and loaches, Mr E. Peaton. Guppies, Mr J. Hunt. Killifish, Mr R. Peaton. A.O.V. tropical, Mr G. Degg. Egg-layer pairs, Mr P. Peaton. Livebearers pairs, Mr T. Bowler. Common goldfish, Mr H. Collins. Fancy goldfish singular, Mr J. Hunt. A.O.V. coldwater, Mr J. Hunt. Furnished coldwater aquaria, Mr R. Walker. Furnished tropical aquaria, Mr G. Mead. Best tropical fish, Mr D. Toplin. Best coldwater fish, Mr J. Hunt.

BRISTOL A.S. members were very pleased with the results of the exhibition that they were invited to put on at a Pet Show given by the local branch of the R.S.P.C.A. The Society's exhibit took the form of a closed-club competition with six classes each for coldwater and tropical entries. The public proved to be immensely interested and put many questions to members who are sure

that quite a few new members will result from this venture.

Mr H. Jago won in the classes for goldfish, fantails, a.o.v. coldwater and the special award for coldwater fish. Mr F. Brown took first place in the classes for cichlids, labyrinth, barbs, a.o.v. livebearers and a.o.v. egg-layers and the special award for tropicals. The class for shubunkins was won by Mr S. Lloyd, for moons by Mr N. Grimston and for pond and river fish by Mr W. Ham. Mrs P. Kimber won in the class for characins.

At the June meeting, Mr V. Capaldi demonstrated that his talent as an aquarist is only equalled by his experience with a camera when he presented to fellow members a slide show of his own transparencies.

BINGLEY HALL is the venue (*Broad Street, Birmingham*), the **MIDLAND OPEN SHOW** is the name. *M.A.P.S. look forward to greeting old and new friends at their four-day Show from 13th to 16th August. Opening times are Wednesday, 2.30-10.0 p.m., Thursday and Friday from 12-10.0 p.m. and from 10.0 a.m. to 9.0 p.m. on Saturday.*

THE BEST fish in show award at the **CARDIFF A.S.** very successful third open show was won by a *Corydoras julii* entered by Mr P. Wright. The entrant who achieved the highest number of points was Mr Wheeler. Class winners are as follows.

Male guppies, Mr Wheeler. Female guppies, Mrs Piere. Mollies, Mr B. Small. Swords, Mrs Gregory. Platts, Mr B. Powell. Siamese fighters, Mr T. King. Labyrinth, Mr Gadd. Barbs under 3 in., Mr G. Churchill. Barbs over 3 in., Mr C. Harding. *Hypoclineryzom* and *Hemigrammus*, Mr D. Noble. A.O.V. characins, Mrs Barber. Large cichlids, Mr W. Gorwill. Dwarf cichlids, Mr Watkins. Angels, Mr Wheeler. *Corydoras*, Mr P. Wright. A.O.V. catfish, Mr Scudamore. Minnows, barbora, danios, Mr B. Small. Sharks, loaches and botias, Mr B. Small. Toothcarps, Mr Chard. A.O.V. egg-layer, Mr Willett. Breeders egg-layers, Mr Wheeler. Breeders livebearers, Mr Wheeler. Sexed pairs, Mr T. King. Furnished jars, Mrs P. Harding. Junior livebearers, C. Brooks. Junior egg-layers, D. Bateman.

ENTRIES for the fourth International Guppy Show, organised by the **FANCY GUPPY ASSOCIATION** of Great Britain, were received from Sweden, Austria and Germany as well as from all parts of the British Isles. There was a fine array of trophies and silver and bronze medals for the class winners from more than 400 guppies entered and a magnificent trophy brought over from Canada by Mr

Graham Wood, who presented the trophies and prizes, from the Calgary Aquarium Society. This is a section award trophy and will be presented annually to that section acquiring the most overall points; this year it was won by the Birmingham section of the F.G.A. The best in show award went to the metropolitan female entered by Mr A. Charlton; the best opposite sex award to the bottom swordtail entered by Mr T. Hallett; the best breeder award to Mr P. J. Duffy, and the master breeder award to Mr D. Curry. Details of the first awards in each class were as follows (numbers entered are given in parentheses).

Deltatails (15), Mr P. J. Duffy, 76. Fantails (14), Mr H. Beecher, 71. Original veiltails (10), Mr M. Delingpole, 72. Short dorsal veils (24), Mr R. Cheshire, 31. Long dorsal veils (23), Mr C. W. Davies, 77. Scarftails (15), Mrs J. Croft, 76. Colortails (8), Mr F. Jinks, 74. Loyetails (6), Mr G. Fletcher, 73. Top swordtails (15), Mr P. Walker, 72. Bottom swordtails (6), Mr T. Hallett, 78. Double swordtails (6), Mr M. Delingpole, 74. Roundtail males (7), Mr D. Beucham, 75. Spouttails (4), Mr P. J. Duffy, 74. Pintails (6), Mrs J. Croft, 74. Colour males (22), Mr D. Beucham, 74. Superfis (12), Mr L. Smith, 75. Wedgetails (6), Mr A. Swain, 72. Metropolitans (6), Mr A. Charlton, 75. Roundtail females (16), Fowles & Vinal, 79. Scalloptail females (6), Fowles & Vinal, 74. Colour females (6), Mr B. Frenson, Mr E. Heil, 75. Experimental males (1), Mr W. J. Orton, 69. Experimental females (3), Mr S. Rigby, 74. Breeders males (10), Mr P. J. Duffy, 75. Breeders females (15), Mr M. Delingpole, 73. Breeders pairs (18), Mr T. Hallett, 77. Master breeders (8), Mr D. Curry, 75. Juniors (any standard variety), 6. Master P. J. Duffy, 76. Juniors (breeders), 21. Master B. Parker, 74. Ladies (any standard variety), 4. Mrs E. Duffy, 76.

THE FIRST of its kind in East Lincolnshire and the coastal region and the first open show held by **BOSTON A.S.** was a great success. Considering the isolated geographical position of the town, the entry of 174 was more than satisfactory and competitors had travelled from as far afield as Norwich, Hull, Stockbridge and the Midlands to be present. Councillor N. Whitehead, Mayor of Boston, presented the prizes, most frequently to members of Alfreton A.S. who carried off all the major awards, Mr David Wragg won the best fish in show award and best tropical fish, and his club-fellow Mr J. Wright received the trophy for the best coldwater fish. First award winners were:

Guppies, Mr Easton (Grimaby), Mollies, Mr D. Wragg (Alfreton), Swordtails, Mr S. Gerard (Alfreton), Platts, Mr J. Derrin (Dukeries), Small barbs, Mr S. Gerard (Alfreton), Large barbs, Mr J. Wright (Alfreton), Small characins, Mr D. Wragg (Alfreton), Large characins, Mr Parker (Grimaby), Killifish, Mr D. Wragg. Minnows and danios, Mr Gregory (Grassham), Sharks and loaches, Mr J. Derrin (Dukeries), Barbora, Mr S. Gerard (Alfreton), Dwarf cichlids, Mr J. Derrin (Dukeries), Large cichlid, Mr Beese (Nottingham).

Angels, Mr Allsopp (Alfreton). Catfish, Mr Baker (Preston). Loaches, Mrs Balamant (Nottingham). Fighters, Mr N. Woodley (Dukeries). A.o.v. anabantids, Mr Bunzage (Lincoln). A.o.v. tropical, Mr Jackson (Dukeries).

Breeders livebearers, Mr Binn (Nottingham). Breeders egglayers, Mr D. Wragg (Alfreton). Pairs livebearers, Mr Metcalf (Grimston). Pairs egglayers, Mr D. Wragg (Alfreton). Goldfish and comets, Mr Parker (Grimston). Shubunkins and fancy goldfish, Mr J. Wright (Alfreton). A.o.v. coldwater, Mr A. Sands (Boson).

Mr A. Lindley and Mr B. Inman (P.N.A.S.) judged the show, which over 350 people visited during the day.

AWARD winners at the SOUTH-END, LEIGH & D.A.S. open show held on the 3rd May were as follows:

A.v. guppy (S. and J. Norris Cup): Mr S. Norris (Southend, 80). A.v. piety (S.L.A.D.A.S. plaque): Mr R. Wallings (Southend, 2nd place, 81). A.v. swordtail (T. King plaque): Mr P. D. O'Brien (Thurrock, 2nd male, 74). A.v. roly (S.L.A.D.A.S. plaque): Mr D. Cherrington (Southend, black female, 77).

A.v. cichlid (Stamwood Radio Cup): Mr R. Passmore (Southend, discus, 80). A.v. barb (D. Edwards Cup): Mr P. F. Capon (Southend, chaquar barb, 81). Characins (G. Passmore Cup): Mr R. Nield (Southend, headstander, 81). Egg-layer livebearers (S.L.A.D.A.S. plaque): Mr S. Morgan (unattached, 81). Danio, rasbora, minnow (S.L.A.D.A.S. plaque): Mr P. D. O'Brien (Thurrock, pearl danio, 76).

Male fighters (S.L.A.D.A.S. plaque): Mr D. Durrant (Thurrock, red fighter, 70). A.o.v. labyrinth (S.L.A.D.A.S. plaque): Mr C. Wallford (unattached, thickly covered, 81). Caridean catfish (J. Cooper Cup): Mr E. Nield (Thurrock, 81). A.o.v. catfish and loach (S.L.A.D.A.S. plaque): Mr Panton (unattached, Pimobella, 81). A.o.v. tropical (S.L.A.D.A.S. plaque): Mr R. Kendrick (Frodoan, flying fox, 81). A.v. coldwater (P.N.A.S. trophy): Mr Stradwick (Thurrock, goldfish, 81).

Breeders egglayers (Chas Cup): Mr D. Edwards (Southend, Bolivia, 22). Breeders livebearers (S.L.A.D.A.S. Cup): Mr D. C. M. Durrant (Thurrock, *Lima nitana*, 71). Furnished aquaria (S.L.A.D.A.S. Cup): Mr E. Nield (Thurrock, 41). Marine (Windermere Perpetual trophy): Mr J. Clark (Bilminster phobos, 74).

The Society meets every first and third Tuesday in the month at St Andrews Hall, Electric Avenue, Westcliffe-on-Sea (entrance in Westborough Road) and further details will be supplied by the secretary, Mr R. Wallings, 93 Salisbury Avenue, Westcliffe-on-Sea.

The Year Book of the FEDERATION OF SCOTTISH AQUARIST SOCIETIES contains sections covering programme aids, public aquaria etc. with articles on breeding procedures written by the winners of the breeders classes in F.S.A.S. Conventions. Copies can be obtained from Mr J. A. B. Jeffrey, 17 Mountgomery Street, Kirkside, Fife at 6s. 6d. including postage.

PAYMENT of half the entrance fee to the Brighton Aquarium for all the guests was the novel way in which **BRIGHTON & SOUTHERN A.S.** members entertained their visitors when they were hosts to Mid-Sussex, Littlehampton & Bognor, Hastings & Bechill members participating in the four-way inter-club table show. Highlight of the visit was a demonstration at a special training session of the skills of the dolphins. Their young trainer, Mr Stewart Burnham, is an ex-member of the club. A heavy storm, of the type common in the area from which the bottlenose dolphin comes, was simulated with the aid of coloured lighting and water jets playing across the pool.

Back at the club's headquarters, Mr Ted Jessopp, chairman of the F.B.A.S., was judging the 64 fishes benched. He commented on the unusually high standard of the exhibits. The system of pointing was a little unusual in that 10 points were awarded to the winning club, 8 to the second, 5 to the third and 1 to the fourth. On this basis, the final positions were: 1, Brighton; 2, Mid-Sussex; 3, Littlehampton & Bognor; 4, Hastings & Bechill. Individual winners were: livebearers, Mr K. Williams (Brighton). Barbs, Mr A. Thompson (Littlehampton). Rasboras, Mr D. Soper (Mid-Sussex). Characins, Mr E. Cox (Brighton).

THE TROPHY for the best fish in show award went to club member Mr Haynes at the **DERBY REGENT A.S.** seventh open show. Club president Mr A. M. Deakin presented the awards. First award winners were:

Guppies, Mr Warburton (Derby Regent). Livebearers, Mr D. T. Delves (Bullington). Danio, minnow, rasbora, Mr S. Hill (Alfreton). Barbs to 1 in, Mr J. Wright (Alfreton). A.o.v. barbs, Mr Haynes (Derby Regent).

Dwarf cichlids, Mr and Mrs Simpson (Bedworth). Cichlids, Mr Harrow, Angels, Mr Kendrick (Derby Regent). Characins up to 1 in, Mrs Delves (Bullington). A.o.v. characins, Mr and Mrs Pearson (Rugby). Fighters, Mr J. D. Fellows (M.A.F.S.). A.o.v. anabantids, Mrs Delves (Bullington).

Catfish and loach: Mr R. Shakespear (Bedworth). Sharks and loach, Mr Moss (Derby Regent). Livebearer pairs, Mr Nightingale (Birmingham). Egg-layer pairs, Mr Sherry (Coventry). Breeders livebearers, Mr D. T. Delves (Bullington). Breeders egglayers, Mr J. Wright (Alfreton). A.o.v. nospala, Mr Cooper (Derby).

A.v. coldwater, Mr C. Hill (Nottingham). Killifish, Mr Hudson (Derby Regent). Decorative aquaria, Mr Kendrick (Derby Regent). Junior livebearers, T. Warburton (Derby Regent). Junior egglayers, R. Shakespear (Bedworth).

DETAILS of the first award winners at **BRADFORD & D. A.S.** Open Show are the following.

Guppies, Mr and Mrs Walls (Stonewall, 75). Swordtails, Mr T. Douglas (Hall, 80). Millies, Mr T. Collinwood (Hall, 76).

The Council of the FEDERATION OF BRITISH AQUATIC SOCIETIES has announced the award of a Certificate of Merit to Mr Fred Riddle for outstanding services to the hobby, following the nomination by Independent A.S. Mr Riddle served the Federation well, being a class 'A' judge, and at one time was chairman of the Federation. He has served the F.G.B.S. and held high office in B.A.S.S.

The Judges and Standards Committee announce that Mr B. Coombes is now an 'A' class coldwater judge and Mr M. Careter a new 'B' class tropical judge.

Fishes, Mr W. Fletcher (Bradford, 75). A.o.v. livebearers, Mr D. Kennedy (Bradford, 58). Section winner, Mr T. Douglas. Barbs, up to and including 2 in, Mrs S. Barry (Swillington, 74). Over 2 in, Mr and Mrs Howard (Barnsley, 76). Section winners, Mr and Mrs Howard. Characins up to and including bleeding heart, Mr and Mrs Firth (Bradford, 84). Over bleeding heart, Mr J. A. Whiteley (Airedale, 82). Section winners, Mr and Mrs Firth.

Carps and minnows, Mr A. B. White (Kighley, 75). Sharks and loach, Mr A. B. White (Kighley, 80). Toothcarps, Mr S. Dixon (Mansfield, 75). Section winner, Mr A. B. White, 80 points. Fighters, Mr N. Spencer (Halifax, 75). A.o.v. anabantids, Mr and Mrs Firth (Bradford, 76). Section winner, Mr and Mrs Firth.

Dwarf cichlids up to P. boltoni, Mr J. A. Whiteley (Airedale, 78). Cichlids over boltoni, Mr D. Kennedy (Bradford, 81). Angel fish, Mr B. Tate (Airedale, 79). Section winner, Mr D. Kennedy. Catfish, Cyprinoid species, Mr A. G. Laver (Top Ten, 78). Loaches and loach, Mr D. Kennedy (Bradford, 80). A.o.v. catfish, T. & W. (Stonewall, 81). Section winners, T. & W. A.o.v. tropical, Mr D. Kennedy (Bradford, 81). Section winner.

Breeders livebearers, Mr H. Gunter (Airedale, 78). Section winner. Breeders egglayers, Mr and Mrs Firth (Bradford, 84). Section winners, Pairs livebearers, Mr and Mrs Bone (Huddersfield, 80). Pairs egglayers, Mr and Mrs Grimshaw (Stonewall, 81). Section winners, Mr and Mrs Gunshaw. Fancy goldfish, Mr Eason (Sheffield, 76). Common goldfish, Mr Eason (Sheffield, 76). A.o.v. coldwater, Mr Hooper (Bradford, 78). Section winner, Mr Eason. Best fish in the show award, Mr D. Kennedy (Bradford, 81 points).

JUDGES Mr A. J. Jones, Mr R. J. Biddle, Mr R. H. Heap, Mr R. Tedds and Mr A. Nicholson gave the best fish in the show award at the **COVENTRY F. & A.S.** open show to Mr B. C. Roberts of Solihull for a neon tetra. Class winners were as follows.

Guppies, Mr S. Dean (Tunsthorpe, 71). A.o.v. livebearers, Mr and Mrs Delves (Bullington, 76). Danio, rasbora, minnow, Mr Trotman (Atherstone, 60). Barbs up to 1 in, Mrs J. Smith (Leamington, 77). Barbs over 1 in, Mr R. J. Hoagh (North Warks, 75).

Dwarf cichlids, Mr and Mrs Simpson (Bedworth, 74). Cichlids, Mr R. J. Hoagh (North Warks, 77). Characins up to 1 in, Mr B. C. Roberts (Solihull, 75). Characins over 1 in, Mr R. J. Hoagh (North Warks, 74). Anabantids, Mr Shakespear (Bedworth,

77). Killifish, Mr and Mrs Cox (Nuneaton, 75). Corydoras catfish, Mr Shakespear (Redworth, 74). Catfish, Mr G. Stead (Tamworth, 75). Loaches, Mr Harris (Long Eaton, 75).
 Livebearers pairs, Mr Davies (Redworth, 74). Egglayers pairs, Mr Harris (Long Eaton, 71). Breeders livebearers, Mr and Mrs Davies (Bullington, 74). Breeders egglayers, Mr L. Bell (Atherstone, 77). A.O. tropical under 4 in., Mr S. Woodhouse (Coventry, 75). A.O. tropical over 4 in., Mr P. Skisner (North Warwick, 68). Bi-axial shubunkins, Mr B. Bromfield (Coventry, 84). A.O.V. coldwater, Mrs S. Leigh (Nuneaton, 69).

39 CLUBS were represented in the 793 entries benched at the KINGSTON & D.A.S. open show, the guppy section being staged by the West London section of the F.G.A. The best in the show award went to the snakeshead entered by Mr R. King. Mr R. J. Pawley was awarded the Committee Bowl for a pike cichlid. The Greenhalf Cup went to Mr B. Morgan, the Ellis trophy to Mr J. D. Wilson, the Norbiton Bowl to Mr P. Grovener and the Hunt Cup to Mr C. Stott. Class winners were:

A.V. sword, Mr J. Stephens. A.V. play, Mr L. G. Little. A.V. mollie, Mr J. D. Wilson. A.O.V. livebearer, Mr B. Blake. A.V. barb, Mr P. Grovener. A.V. characin, Mr J. Pollard. A.V. dwarf cichlid, Mr M. Clark. A.O.V. cichlid, Mr B. Pawley. A.V. damie etc, Mr W. D. Harper. A.V. toothcorp, Mr G. Stott.
 A.V. Corydoras, Mrs M. Nicol. A.O.V. catfish, Mr B. Morgan. A.V. loach and botia, Mr M. Carter. A.V. labyrinth, Mr J. D. Wilson. A.O.V. tropical egglayers, Mr R. King. Breeders egglayers, Mr J. D. Wilson. Breeders livebearers, Mr G. Russell.
 Goldfish, Mr M. Beets. A.V. singletails, Mr M. Jones. A.O.V. fancy goldfish, Mrs G. Longstaff. A.V. native and foreign, Mr R. E. Dudley. A.V. tropical pairs, Mr J. Pollard. A.V. plants, Mr G. Greenhalf.

ENTRIES were satisfactorily up on last year's total at the ALFRETON & D.A.S. open show. Special award winners were: best fish in the show, Mr D. Wrang (Alfreton); A. Dooley shield, Mr P. J. Duffy (Alfreton); D. Wrang shield, Mr R. F. Senior (Sheffield); J. Lindley shield, Mr D. Wrang (Alfreton); the Wright shield, Mr D. Wrang (Alfreton); the Cox shield, Mr J. Derric (Dukeries); S. Gerrard shield, Mr D. Wrang (Alfreton); M. Lindley shield, Mr D. Wrang (Alfreton). Winners in the classes were the following.

Guppies, Mr P. J. Duffy (Alfreton). Flurry, Mr R. F. Senior (Sheffield). Mollie, Mr V. Powell (Grantham). Swordfish, Mr N. R. Gibson (Huddersfield). Small barbs, Miss S. Gerrard (Alfreton). Large barbs, Mr R. F. Senior (Sheffield). Small characins, Mr D. Wrang (Alfreton). Large characins, D.M.L. (Chappleton). Killifish, Mr D. Wrang (Alfreton). Minnows and danios, Goodwin Bros. (North Staffs). Sharks and ferox, Mr B. Walker (Sheffield). Rasbora, Mr S. Hill (Alfreton). Dwarf cichlids, Mr K. Ross (Sheffield). Angels, Mr E. Mackinson (Ratworth). Catfish, Mr D. Sewell (Ratworth). Loaches, Mr R. Walker (Sheffield). Siamese fighters, Mr J. Amott (Alfreton). A.O.V. anabantids, Mr M. Woodley (Duker-

ies). A.O.V. tropical, Mr E. Jackson (Dukeries).

Pairs egglayers, Mr D. Wrang (Alfreton). Pairs livebearers, Mr P. J. Duffy (Alfreton). Juniors livebearers, Master Gerry Senior (Sheffield). Juniors egglayers, Mr Andrew Bull (Derby Regent). Goldfish and comets, Mr E. W. Eason (Sheffield). Shubunkins and fancy goldfish, Mr C. Hill (Nottingham). A.O.V. coldwater, Mr E. W. Eason (Sheffield). Breeders egglayers, Mr D. Wrang (Alfreton). Breeders livebearers, Mr P. J. Duffy (Alfreton). Novice, Mr D. Moody (Dukeries). Mini-jars, Mr P. Reynolds (Dukeries).

ONE of the 13 trophies competed for this year at the **ABBEBOROUGH & D.A.S. members'** show was a large copper fish presented by a club member who is working in Zambia. The fish was made by the natives there. Mr A. M. Deakin, F.N.A.S., A.Y.A.S., judged the 87 fishes benched and gave the best in the show award to the high-fin female swordtail entered by Mr H. Gardner. Winners in the classes were:

A.V. guppy, Mr H. Gardner, 72. A.O.V. livebearer, Mr B. Megson, 73. A.V. barb, Mr J. Whitley, 71. A.V. characin, Mr G. Monk, 74. A.V. cichlid, Mr R. Taylor, 74. A.V. fighters, Mr R. Taylor, 68. A.O.V. anabantid, Mr J. Whitley, 72. A.V. flying foxes and sharks, Mr J. Whitley, 75. A.V. catfish and loach, Mr J. Key, 72. A.V. novice, Mr J. Sutton, 70. A.V. junior, Mr D. Shaw, 73. A.V. coldwater, Mr R. Lister, 70. A.O.V., Mr J. Key, 74. A.V. pairs, Mr H. Gardner, 74. A.V. breeders, Mr G. Monk, 74. Furnished mini-jars, Mr B. Megson.

In our item 'Badge of the Month' in the May issue, we stated incorrectly that the Society had sole distribution rights to the tape-recorded lectures of Mr W. L. Whitem. We apologise for any difficulties this may have caused.

F.B.A.S. JUDGES Mr C. A. T. Brown, Mr R. D. Eason, Mr A. G.

A MEETING held in Bristol at the end of May between members of BRISTOL A.S. and representatives from the MIDLAND AQUARIUM & POOL SOCIETY agreed that a 'National Standard' for goldfish varieties should be aimed for and that such a standard should be entitled: 'National Show Standards for British Goldfish Varieties'. Thirteen fish are included in the list and a proposal that these fish should be referred to as either scaled and/or calico was accepted; voting on the thirteen fish was unanimous in each case. Three representatives from each body were elected to discuss further details with the G.S.G.B., these being Mr Emery, Mr Thomas and Mr Jago for Bristol and Mr Dodge, Mr Roberts and Mr Cose for M.A.P.S.

Jessopp, Mr F. C. Tomkins and Mr J. Stillwell had over 340 entries to judge at the **CATFORD A.S.** open show. The best fish in the show was judged to be the combtail entered by Mr F. R. Kendrick, who received the Cobden Rosebowl. Best furnished aquaria (Lee Aquarium Cup), Mr S. Mooney; best coldwater (Olive Cup), Mr A. D. Simmons; best killifish (Iris trophy), Mr J. Bolton; best sexed pairs (Welling trophy), Mrs J. E. Wilson; best breeders (A.J. shield), Mr A. J. McCarthy; F.B.A.S. trophy (best Mollies), Mr J. D. Wilson; highest pointed club (Jamicson shield), Catford A.S. Class winners were:

Individual furnished aquaria, Mr S. Mooney (Tomsham). Barbs, Mr W. D. Harper (Kingston). Characins, Mr J. W. Gower (Bethnal Green). Cichlids, Mr A. Jamieson (Catford). Angels, Mr P. Todd (East Dulwich)—the F.B.A.S. judges were so impressed that this entry be awarded a Diploma of Merit. Dwarf cichlid, Mr J. A. Pollard (Kingston). Labyrinth, Mr F. R. Kendrick (Frotoness). Egg-laying toothcorp, Mr J. Bolton (Eritch). Tropical catfish, Mr G. Greenhalf (Kingston). Corydoras and Brochis, Mr G. Greenhalf (Kingston). Rasbora, danio, minnow, Mr J. W. Gower (Bethnal Green). A.O.V. tropical fish, Mr L. Smith (Bethel Green). Tropical sword pairs, Mrs J. E. Wilson (Catford).
 G.A. guppy, Mr L. Goff (Bethnal Green). Swordtail, F. E. T. Smith (Catford). Flurry, Mr F. R. Kendrick (Frotoness). Mollie, Mr J. D. Wilson (Catford).
 Single-tailed goldfish, Mr L. Jones (Catford). Twintailed goldfish, Mr A. D. Simmons. A.O.V. coldwater, Mr L. Jones (Catford). Breeders egglayers, Mr A. J. McCarthy (Catford). Breeders livebearers, Mr F. Love (Catford).

THERE was 'full house' in the club rooms when **KEIGHLEY A.S.** were hosts at their annual inter-society table show. 170 entries were benched and the home team were joint winners with Bradford (50 points). Aireborough were second and Mixenden third. Mr Greenwood of Bradford won the best fish in the show award. First place winners in other classes were:

Livebearers, Mr Bickle (Keighley). Characins, F. & R. Robinson (Aireborough). Anabantids, Mr Fairclough (Bradford). Carps and minnows, Mr Monk (Aireborough). Barbs, Mr and Mrs Brown (Mixenden). Cichlids, Mr Kennedy (Bradford). Catfish and loach, Mr Holdsworth (Frotoness). Sharks and flying foxes, Mr White (Keighley). Toothcorp, Mr Dixon (Mixenden). A.V. breeders, Mr Dixon (Mixenden). A.V. pairs, Mr and Mrs Brown (Bradford). A.O.V. Mr Greenwood (Bradford). Coldwater, Mr and Mrs Moorhouse (Bradford).

A RATHER special visitor presented the prizes at this year's very successful **MERSEYSIDE A.S.** open show. This was Mr Graham Wood, Director of the Calgary A.S., Alberta, Canada, and editor of the Calquarium magazine on a visit to England to see his grandparents in St Helens. Quoting from the Mersey Beacon, Mr Wood 'assures us that



Mr Graham Wood (left) on a visit from Alberta, Canada presents Merseyside A.S. award to secretary Bob Moorcroft.

he had a "whale of a time". The whole concept of an Open Show in Canada differs from ours and Graham was impressed very much by the strict standards by which our fishes are judged.

Secretary Mr Bob Moorcroft received the best fish in the show award for his *Scatophagus*. Merseyside won the Merseyside Open Show shield (2, Ashton A.S.; 3, Sunnybrow A.S.). Details of class winners are as follows:

Guppies, Mr and Mrs Wells (Sunnybrow, 76). Madies, Mr and Mrs Hoop (Bellevue, 77). Platys, Mr A. S. Entwiss (Top Ten, 74). Swordtails, Mr and Mrs Wild (Salford, 76). Small barbs, Mr Lennox (Salford, 77). Large barbs, Mr C. Brimom (Ashton, 75). Labrets and sharks, Mr and Mrs Hoop (Belle Vue, 77). Loaches, Mr B. Parkin (Ashton, 77). *Corydoras* catfish, Mr A. Newell (Glossop, 28). A.S.V. catfish, Mr R. Phillips (Ashton, 81). Anabantids, Mr W. J. Smith (M.A.S., 28). Fighters, Mrs Davies (Heywood, 28). Small cichlids, Mr W. J. Smith (M.A.S., 76). Large cichlids, Mr K. Parkin (M.A.S., 80). Angels, Mr N. Peterson (M.A.S., 77). Small characins, Mr Grisy (Sunnybrow, 76). Large characins, Mr B. Parkin (Ashton, 81). Toothcarps, Mr J. McGivry (Independence, 77). Rainbow and dawns, Mr R. Moorcroft (M.A.S., 28). Breeders egg-layers, Mr R. Damon (Chester, 84). Breeders livebearers, Mr A. Middleton (Sunnybrow, 76). Pair egg-layers, Mr B. Parkin (Ashton, 81). Pair livebearers, Mr Grisy (Sunnybrow, 81). A.S.V., Mr R. Moorcroft (M.A.S., 84). Junior A.S.V., B. Seabright (Gorton, 86). Ladies, Mrs V. Parkin (M.A.S., 77). Fancy Goldfish, Mr. Walsh (Accrington, 28). A.S.V. coldwater, Mr and Mrs Miller (Belle Vue, 77).

BRISTOL A.S. members are working all out to make their Open Show a huge success in this, the Society's fortieth year. The Show is being held at the Bishopston Parish Hall, Gloucester Road, Bristol, and Mr S. Lloyd, 4 Curlew Close, Frenchay, Bristol, will answer all enquiries.

In Brief . . .

... **BOREHAM WOOD & D.A.S.** held an Open Day for the public at Whitsun to introduce more people to the hobby. The display featured six furnished aquaria, smaller tanks and many show jars; and a wide variety of fishes were on view from small livebearers to a giant *Plecostomus*. A great deal of interest was aroused.

... MR A. L. McCORMICK won in the table show for characins held by **HASTINGS & BEXHILL A.S.** (2, Mr C. Jenner; 3, Mr J. Watson), which Mr A. G. Jessopp judged after giving a most entertaining talk on many aspects of the hobby.

... **INCREASED** membership brings a change of venue for **HAMPSTEAD & D.A.S.** to Bacton Residents Hall, Lismore Circus, London, N.W.5. Table shows are being well supported and members have been enjoying a series of lectures on genetics by Mr R. Eason, Mr F. C. Katritsky, a vice-president of the F.B.A.S., has accepted honorary membership of the Society.

... **THE BRITISH AQUARIST STUDY SOCIETY** held its second spring meeting at the Haslemere Museum in Surrey. After an excellent talk and demonstration by the assistant curator, Mr H. L. Jones, on "Water life under the micro-projector", Society members were able to make use of the equipment themselves and study samples of aquatic life taken from the ponds in the Museum's grounds.

... **BARNSELY T.F.S.** propose to hold fortnightly meetings in future. At the June meeting, Mr F. Buxton presented a slide show on killifish and Mr J. Brown from Maiden organised a very enjoyable quiz. The plaque for furnished aquaria in the table show was won by Mr J. Howard and medallions for the catfish and loach class were won by Mrs B. Deaves, Mr Howard and Mr Claypole.

... A 12-A-SIDE return match with **SOUTH BUCKS A.C.** was won by the host team, **BRACKNELL A.S.**, by 505 points to 896, the second victory for the club. Mr A. Blake from Basingstoke judged the entries and awarded first to Mr M. B. Field (S. Bucks) for an angel (2, Mr M. Carter, Bracknell, *Botsa sithimushi*; 3, Mr D. Armstrong, Bracknell, C. white).

... **PIPEFISH** were some of the interesting fishes collected by members of **OXFORD A.S.** on a recent trip to the coast. Most members have successfully established their new pets, with blennies proving a real favourite and eating from the hand within days. The outing proved most successful and popular. Fishkeepers who would like to join in these and similar activities should write to secretary Mr Mick King, 11 Crafts End, Chilton, Berks.

... **NEW** secretary of **HINCKLEY & D.A.S.** is Mr D. Sparrow, 172 Brookside, Burbage, Leics. Mr Sparrow won the tetra class with a black neon at the June meeting at which Mr R. Tedds was the judge (danios: 1, Mr M. Bishop; anabantids, 1, Mr P. Morris). New members are very welcome—please write to the secretary for details.

... A **NEW** meeting place for **CAMBRIDGE & D.A.S.** This is the Working Men's Club, Fitzroy Street, East Road, Cambridge. Meetings are still held on the first Tuesday in each month at 7.30 p.m. and visitors are most welcome.

... **MANY** of the peripheral interests of the members of **EALING & D.A.S.** are being skilfully integrated to widen club activities through the formation of Study Groups. The newly formed photography group lost no time in arranging a meeting. A taped lecture on fry feeding, made by a member, was played to illustrate the use of tape as a medium for Group reports to the club. Members are also awaiting reports from two intrepid pioneers into the marine side of the hobby. The home furnished aquarium competition has been held and judged, the winner being Mr Jim Hesley (the resident card-taker' says press officer Mr R. C. Mills) followed by Mrs May Barbidge, Mr Ray Savage and Mr Bob Sellers.

... **OFFICERS** elected at the first A.G.M. of the **WALES & THE WEST FEDERATION OF AQUARIST SOCIETIES** were: chairman, Mr F. Brown; treasurer, Mr L. Nightingale; secretary, Mr F. Barry (18 Foxcote Road, Ashton, Bristol, BS3 2BZ). Member societies met six times in the year, a new set of inter-club show rules was formulated and a panel of speakers and judges formed. For the benefit of clubs in South Wales and the South Coast area, regional meetings are to be held and the first of these will be in Torquay.

... **IN** 1949 when **RIVERSIDE A.S.** was founded at Hammersmith the club met in a small hut on the

towpath. The Society's new venue is still only a stone's throw from the river at a hall in the grounds of St Etheldreda's Church, Fulham Palace Road, London, S.W.6. Meetings are held on the first and third Monday of the month and all are welcome. A most successful outing to the Brighton A.S. open show combined fish-showing with trips to the beach for the family. The next outing will be a visit to a fish farm near Portsmouth.

... **AMESBURY & D.A.S.** members have plans well formulated for a car rally, auction and gadgets evening and a public draw. The problem of maintaining the local hospital's tank has been solved by drawing up a roster of volunteers. Mr Snell won the barb class at the June table show and Mr Rose the class for female guppies. The winning team of the evening's quiz consisted of Mr and Mrs Rose, Mr Lane and Mr Snell.

... **THE EAST LONDON A. & P.A.** were hosts at the second round in the inter-club show with Southend, Basildon and Thurrock. Results were: Ramboras, danios, minnows: 1, Mr Wallings (S); 2, Mr Mitchell (S); 3, Mr Corby (EL). Male guppies: 1 and 3, Mr S. Norris (S); 2, Mrs J. Norris (S). Toothcarps: 1, Mr Len Baker (EL); 2, Mr E. R. Nicoll (T); 3, Mr Wallings (S). Cichlids: 1, Mr B. Corby (EL); 2, Mr Passmore (S); 3, Mr Edwards (S).

... **VICE-CHAIRMAN** of **TONBRIDGE & D.A.S.**, Mr John Bellingham, gave a most interesting talk on fishkeeping from 'why' to 'how' he keeps fish, an ideal subject for the first meeting that seven new members were attending. A talk by Mr C. A. T. Brown of the F.B.A.S. on judging gave some very useful pointers to would-be exhibitors. When Mr Brown judged the table show at this meeting he said how pleased he was to see so many killifish on show in a comparatively new club. Mr R. Taylor took first and second place in the killifish class, and Mr I. T. Mathieson first in the *Corydoras* section.

... **HORSFORTH A.S.** members were delighted to have a Canadian aquarist guest presenting a slide show at their June meeting. He found our fishkeeping customs very similar in many ways except in fish showing, for it was customary for all show tanks and jars in Canada to contain plants, and of course gravel and rockwork. Table show results at this meeting were: Special class, Mr M. Parker; a.o.v., Mr J. Girdham; junior a.o.v., Master J. Dugdale.

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How can I vary the types of live foods for my fishes?

GNAT and mosquito larvae abound at this time of year in stationary waters and are excellent live foods. Larvae of the gnat (*Cuculines*) are the creatures that hang head down in the water, penetrating the surface with their breathing tubes. On the approach of the collector they twist and turn violently as they descend to the bottom of the stagnant water, hence the common term 'wrigglers' given to them by aquarists. The commonest species here is *Culex pipiens*.

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... AT the first of two 12-a-side 'friendlies' with **FARNBOROUGH**, host club **BRACKNELL A.S.** took first three places in the table show judged by Mr Dick Dove. The club is also doing very well in the Three Counties six-fish bottle league. In the second round they took second place which now gives them an overall lead of 20 points (187) over Basingstoke (167) and High Wycombe (164).

... **BISHOPS CLEEVE A.S.** enjoyed the talk by Mr J. Wheeler of Trowbridge on show conditioning and judging tropical fishes. Club member Mr P. Fredgold was very successful at the Harlech open show when he obtained firsts for both native marines and tropical marines.

... A **SUCCESSFUL** year both financially and on the show benches was reported at the **ILFORD & D.A. & P.S. A.G.M.** Principal officers for the coming year are: president, Mr Arthur Stebbings; vice-presidents, Mr L. J. Jarvis, Mr M. Braham; chairman, Mr Joe Sanders; secretary, Mr Ron Ruth (103 Heath Road, Chadwell Heath, Essex); treasurer, Mr Michael Brill; show secretary, Mr Harry Berger; press secretary, Mr Noel Reade; librarian, Mr Ken Ellis. Visitors and new members are welcome to attend meetings at 8.0 p.m. on the second Monday of each month at St Laurences Hall, Hamilton Avenue, Barkingside, Essex.

... **MEMBERS** of **NOTTINGHAM & D.A.S.** have been having an extremely successful showing season so far. Mr K. Binns won in the cichlid class at Sheffield and Worksop, Rainworth, and Boston (large cichlids). At the last-named show he also won first breeders livebearers, second dwarf cichlids and third small barbs. Mr C. Hill and Mrs I. Bulleyment won cards at Stockbridge, Sheffield, Mr Hill winning a first at Derby Regent and Mrs Bulleyment a first at Boston. Other winners have been Mr W. Selby and Mr Pearson.

Badge of the Month



Gorton & Openshaw A.S. Secretary: Mr G. Mills, 73 Ashdale Crescent, Droyliden, Manchester.

Dates for Your Diary

15th-16th August. **MIDLAND OPEN SHOW** (M.A.P.S.). Ringley Hall, Beoad Street, Birmingham. Schedules from Mr J. Wills, 120 Franklin Road, Kings Norton, Birmingham 30.

17th August. **BEDWORTH A. & P.S.** first Open Show. St James Parish Hall, Bulkington, nr. Nuneaton, Warks. Schedules from Mr M. Lee, 57 Grant Road, Exhall, Coventry, Warks.

17th August. **BLACKPOOL & FYLDE A.S.** Open Show. Harrowside Solarium, South Promenade, Blackpool. Programmes from Mr B. Simmons, 15 Warstead Crescent, Blackpool.

24th August. **OSRAM A.S.** Open Show. The Recreation Hall, Refuge Street, Shaw, Oldham, Lancs. Batching 12.0-2.15 p.m.

28th August. **CLEVELAND A.S.** Open Show. The British Legion Club, Guisborough, Yorks. Details from Mr C. B. Taylor, 19 St Annes Road, New Marske, Redcar, Teesside.

30th-31st August. **HARLOW A.S.** third Open Show. (Harlow Town Show). Schedules from Mr J. Jarvis, 143 Carter's Mead, Harlow.

31st August. **ROCHDALE & D. A.S.** second Open Show. Kirkalt Community Centre, Rochdale, Lancs. Details from Mr P. Dunster, 61 Redcross Street, Rochdale, Lancs.

6th September. **F.B.A.S.** General Assembly. Conway Hall, Red Lion Square, Holborn, London, W.C.1.

6th September. **RHONDDA A.S.** Open Show.

6th September. **BETHNAL GREEN A.S.** Open Show. Schedules from Mr J. Coombes, Bethnal Green Institute, 229 Bethnal Green Road, London, E.2.

6th-7th September. **MID-HERTS A.S.** Open Show. Show secretary, Mr C. S. A. Withers, 15 Charmouth Road, St Albans, Herts.

7th September. **MIDLAND AQUARIST LEAGUE** Show (Open Classes). St James Parish Hall, Bulkington, Nuneaton, Warks. Schedules from Mr M. Lee, 57 Grant Road Exhall, Coventry.

7th September. **REIGATE & REDHILL A.S.** Open Show. Colman Institute, Redhill. Details from Mr S. Perham, 3 Bolsover Grove, Merstham, Surrey.

12th-13th September. **BRISTOL A.S.** Open Show. Bishopston Parish Hall, Gloucester Road, Bristol. Enquiries to Mr S. Lloyd, 4 Curlew Close, Frenchay, Bristol.

13th September. **SOUTH PARK AQUATIC (STUDY) SOCIETY** Open Coldwater Show. Sutton Adult School, Benhill Road, Sutton. Details from 161 South Park Road, Wimbledon, London, S.W.19.

14th September. **EALING & D.A.S.** first Open Show. Schedules from Mr R. Barrett, 8 Grove Court, The Grove, Ealing, W.3.

14th September. **NOTTINGHAM A.S.** Open Show. Drill Hall, Triumph Road, Nottingham. Schedules from Mr N. B. Kenney, 34 Leonard Avenue, Sherwood, Nottingham.

14th September. **OLDHAM & D. A.S.** Open Show. The Study Centre, Werneth Park, Oldham, Lancs.

20th September. **HOUNSLOW & D. A.S.** Open Show (to be confirmed). Youth Centre, Cecil Road, Hounslow. Schedules from Mr F. Smith, Anafra House, 7 The Greerway, Hounslow, Middlesex.

21st September. **STONE A.S.** Open Show. Walton Community Centre, Walton, nr. Stone, Staffs. Schedules from Mr M. Dale, 14 Lavender Close, Great Bridgeford, nr. Stafford.

27th-28th September. **CAMBRIDGE & D.A.S.** Open Show. Guildhall, Market Square, Cambridge. Schedules from Mr L. Geogeson, 16 Leys Road, Cambridge, CB4 2AT.

28th September. **NORTHAMPTON & D.A.S.** Open Show. Kingsthorpe Community Centre, Northampton. Schedules from Mr R. Memory, 121 Booth Lane South, Northampton.

28th September. **MEDWAY A.S.** Convention. Details later.

5th October. **ASSOCIATED SOUTHERN AQUARISTS' SOCIETIES** Convention. Portsmouth Community Centre, Twyford Avenue, Portsmouth.

18th-19th October. **BRITISH AQUARISTS' FESTIVAL**, Belle Vue, Manchester.

29th October-2nd November. **THE AQUARIUM SHOW '69** at the Royal Horticultural Society's Old Hall, London, S.W.1.

8th-9th November. **HEYWOOD & D.A.S.** Open Show (joint event with Heywood Horticultural Society).

6th December. **F.B.A.S.** Annual General Meeting. Conway Hall, Red Lion Square, Holborn, London, W.C.1.

14th December. **HORSFORTH A.S.** first Open Show.

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Continued on page 220



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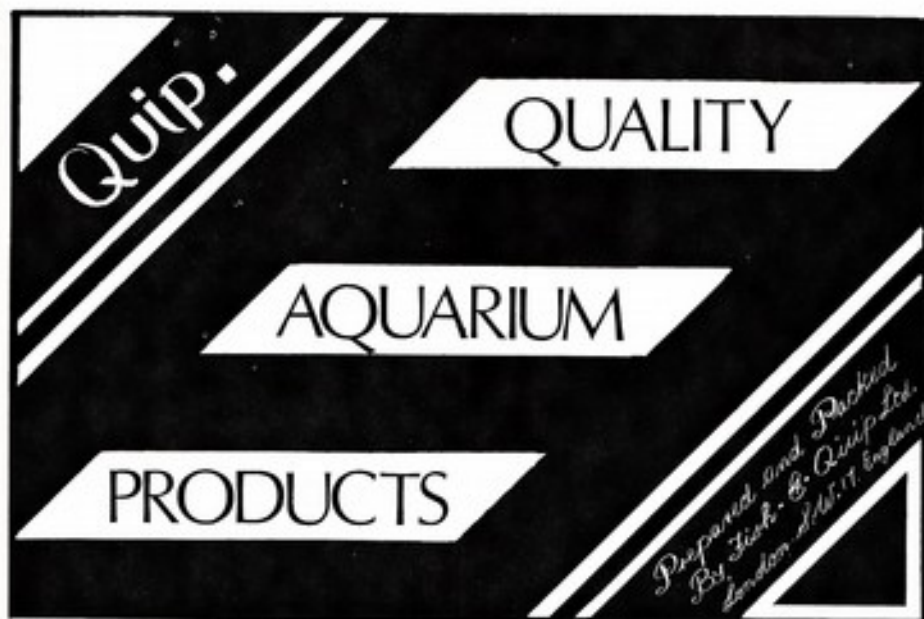
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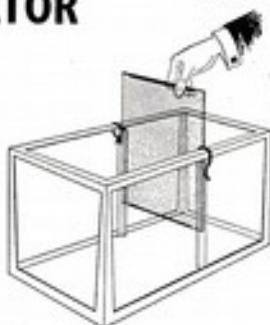
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