

JULY 1970

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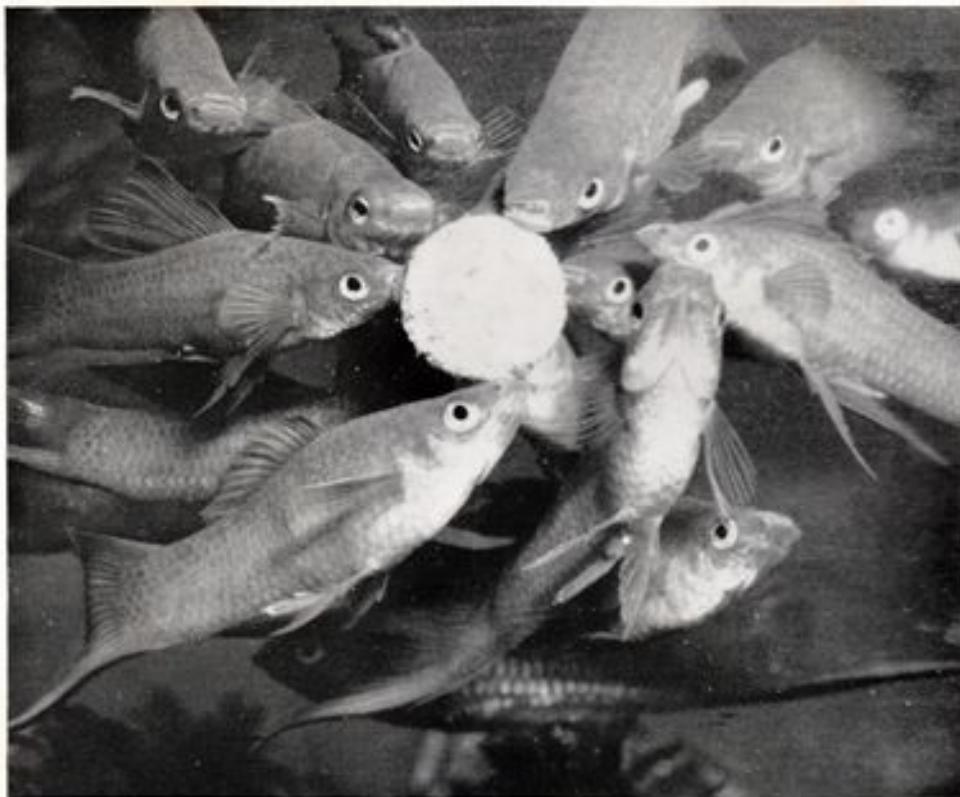
# Pet Fish

monthly

*The* PRACTICAL FISHKEEPING MAGAZINE



**Breeding the Black Widow**  
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**Seahorse Breeding Behaviour**



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**Monthly 3s**  
Vol. 5 No. 3  
July 1970

Subscription rates: £2 2s for  
12 issues; £1 2s for 6 issues  
(U.S.A. and Canada \$5.50)

Editor: Anthony Evans

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## Comments and Quotes

- Pretentious presentations
- Wild fish and insecticides

### Technical Inaccuracies

WHY, we wonder, are some people so anxious to print technical material about which they know nothing, by authors on the subject who know slightly more than nothing, for readers of whom no more than about 0.001% know anything on such technical matters or indeed wish to know more. Is it to impress the majority, who, caring little about it anyway, might nevertheless be deceived into thinking that they have in their hands a valuable tome or article for future reference?

Our best example is given by two books on marine aquarium-keeping (both unfortunately from a British publisher). One book (atrociously in error throughout) includes a set of chemical analyses of sea water and recipes for synthetic mixtures. Its use of chemical formulae discloses the author's complete ignorance of matters chemical. The other book (a later work and marginally better) uses much the same sets of formulae and reproduces faithfully all the misprints and errors of the first book. It could be answered that as chemists would soon spot the errors and since the readership is little concerned about these minor parts of the books the errors matter little, and we would agree, but it brings us back again to the question—why do authors and publishers include such useless technical data? (The end of the joke about the two books referred to is that the inaccuracies and misprints have all been copied, down to erroneous full points, from an American book published 6 years earlier!)

Last month a further example came to our notice in a British magazine in an article on aquarium pollution. Here it is not entirely clear to what extent the ignorance disclosed is the author's (who fortunately is not named, although the name of his London society is blazoned over his work) or whether

the damage has been done in part in the presentation of the material. Names of micro-organisms are inaccurately printed, the chemical 'facts' are in error and the general fumbling use of technical terms shows the near-lost condition of the unseeing who would like to lead others who are in the same state. The author does, in fact, conclude by offering to answer questions on the subject he has mangled, which we thought was a magnanimously compensatory feature.

Make no mistake about what we complain of: the occasional misprint is a hazard of the printed communications game and we all suffer from it (on this page last month we allowed 'Monks Wood' to appear as 'Marks Wood', we confess to our shame, and even *THE TIMES* gave the contents of the egg aimed at Mr Harold Wilson as 'yoke' in its front-page report). It is the careless publication of poor material, given a spurious air of authority by inclusion of technical details that very few readers can challenge, is what we believe to be irresponsible, and harmful to the image of this hobby for informed outside beholders.

### Eight Years On

INSECTICIDES have been in the news again. The Oklahoma Wildlife Federation has asked for a complete ban on the sale or use of DDT and Dieldrin throughout the State. OUTDOOR NEWS reports that tests carried out had shown a high concentration of both substances in wild fish examined. Two other American States have already banned DDT and several other pesticides.

Is it really 8 years ago, in 1962, that the series in *THE NEW YORKER* first warned us all about the dangers of these pesticides? Those prophetic pieces were later to form the book *THE SILENT SPRING*, by the late Rachel Carson.



# LETTERS

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

### Arpee's 3-footer

ARPEE'S insistence on putting a 3 ft. tank at floor level 'in a rather dark situation' (PFM, June) is giving himself problems that might well cause him to utter a plea for suggestions about filling it. My answer would be to forget this space altogether as far as tanks are concerned. Floor level aquaria are a dead loss for tropicals because of draughts and they are very likely to get knocked and broken even if used for coldwater fish. For any purpose artificial lighting would have to be fitted. Arpee's quarantine tanks should be close to the floor and not have other healthy tanks beneath them. Falling drops of water, dripping nets and splashes downwards can carry disease just as well as a transferred fish.

Halifax, Yorks.

R. LOFTHOUSE

ARPEE wants suggestions for occupants of his 3 ft. tank at the bottom of a tier. Unless he is determined that these shall be fish I would suggest to him that he makes the tank an aqua-vivarium and tries keeping a pair of terrapins or caimans in it. These are a lot of fun. I think he should raise the tank off the floor if at all possible or else he will have trouble in keeping a siphon going.

Bournemouth, Hants.

L. R. KING

### Cryptocoryne Disease

I WAS interested to see Mr Jim Kelly's reference to 'cryptocoryne disease' in *Transatlantic Topics* (PFM, June). He states that this is an infection and infers that bacteria cause the trouble. I wonder whether these are a particular disease organism or whether they are merely putrefactive bacteria attacking damaged leaves? Also is it quite certain that this is not a virus infection? Particularly I am interested because my *Cryptocoryne cordata* established in a tank for about 18 months quite suddenly lost all their leaves. The only change I could pinpoint was the introduction of a few new *Cryptocoryne* plants 3 weeks before the rotting, but the new plants have not so far shown the symptoms. I will try the remedy Mr Kelly suggests but I'm going to remove the fish first to avoid risk of poisonous effects.

Darlington, Staffs.

J. CAULDWELL

### Fly Diet

THE sycamore trees in my garden are absolutely thick with green fly this year. The underside of every leaf is crowded with them. I don't know whether to groan as a gardener or cheer as a fishkeeper as the fish love them. It's not a very good idea, however, to carry the leaves as they are through the house because all the flies come off on the way. I have found the best way to carry them is to shake some leaves into a clean polythene

bag, pull out the leaves and insert the bag into the tank. My archer fish is very pleased with life as a result (but here it's just a case of shaking the bag under the lid because the archer does not want his green fly under the water).

London, E.2

J. FITTS

### Show Hopper

THANK you for publishing such a full list of advance dates for shows in PFM. In my (non-aquatic) job I have to travel around the country and with 'Dates for Your Diary' in front of me I can plan my trips to be near a show at the right date. Already this year I have been able to get to well over a dozen shows and see what is happening in different areas.

Birmingham

P.D.

### Too Much Fish Talk

I WAS amused to read Arpee's comments on becoming a 'fish bore' to his friends. For us, it's the other way round. I have a very nicely set-up community tank now but the first intense excitement has worn off with the family and we just enjoy having it in the corner. Like the early days of T.V., however, its presence has ruined conversation with friends who call. They now tend to chat in a disjointed way while trying to keep one eye swivelled on the tank, and every now and then make a quick gallop up to the glass to peer in. I've had to give innumerable 'lectures' on the subject and it really has become quite a bore. I hope the novelty for our friends will soon wear off, and we can get back to discussing something other than fish.

Kingston-on-Thames, Surrey

L. WILLIAMS

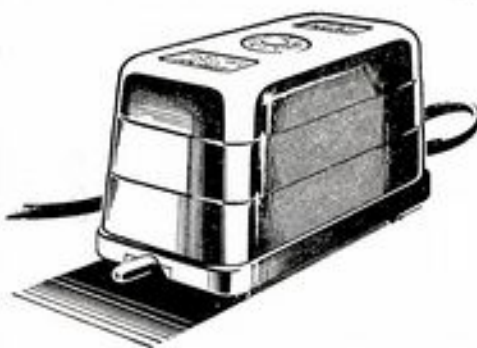
### Better Advice Wanted

A QUERY in a recent issue of PFM (June) explained that the writer had acquired an elephant-nose fish and was feeding it on Liquefy. The query does say that the fish was 'acquired' but if it was from another fishkeeper it's almost impossible to believe that an aquarist would pass on an elephant-nose without explaining that it would need live food. If it was bought from an aquatic shop, I just don't understand the shopkeeper. Aquatic shops get very crowded and it can't always be easy to give detailed advice, but surely it would be to the shop's advantage to explain to the buyer of a specialist fish what its food requirements are to prevent the creature dying of starvation?

Minhead, Somerset

B. WRIGHT

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## Transatlantic TOPICS

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By JIM KELLY

To those who think that china ornaments in a tank are as out of place as a bulldozer in the living room, please note that Frank L. Staplin from Calgary, Canada, provides you with some ammunition to fire off at the pro-ceramic Brigade.

Frank discovered that some of the china ornaments imported from the Far East are toxic to fish because the glazes used contained lead. 'Apparently, because these tank decorations are not used by human beings they are not checked by our Federal Health Agencies. Complaints to them caused an investigation and the withdrawal of certain ceramics and aerators from public sale.' (The italics are mine.)

At the risk of sounding like a gramophone record stuck in the groove may I repeat the warning so often put to PFM readers. If you are ever in doubt about the toxicity of anything you want to place in your tank, try immersing it for a couple of weeks with some live *Daphnia*. If the fleas survive, so to will the fish.

\* \* \*

With the untimely death of Rachael Carson, authoress of SILENT SPRING, the world lost a fine champion for the cause of clearing up our countryside from the pollution caused by effluents and pesticides. That man's inhumanity to his fellow creatures is still going on was evidenced when I received this report from Mexico.

Along the Costacoalcos river basin, industry has mushroomed: just 5 hours' ride from Mexico City, Jalisco (in this part of the world the letter 'j' is sounded like our 'h') lies a sulphur-producing plant, and at Minatitlan are oil and petro-chemical refineries, all providing work and prosperity for Mexico's unemployed.

3\*

Yet just a few years ago this area was the haunt of the rivulids, especially that little jewel the *Rivulus marmoratus*. They are still there, but instead of fleeting glances in the water of blue streaks, their bodies float on the surface and the air is foul with the stench of death. They are killed by the waste products thrown out by the encroaching industry. This must happen, you may say, and I quite agree, but couldn't something have been done to collect some of these fish and save them from extinction?

My report, though gloomy, ends on a happy note. Near Tuxpan, a few pools have been discovered of almost pure sea water in which a few rivulids are living. Though the water is hard and alkaline and choked with masses of *Boopis caroliniana*, Nature was proving that she could adapt—but with the smell of sulphur heavy on the air, it looks as if even here, she may be fighting a losing battle.

\* \* \*

Yet another move in the attempts to curtail the take-over bid from natural species by the introduced Asian catfish, *Clarias batrachus*, was announced by the Ohio Wildlife Council, who have now passed a law prohibiting the importation, sale, and possession even, of this popular species.

\* \* \*

Describing the flying habits of the hatchet fish, Dr Breder, from the American Museum of Natural History, states that they have been observed to leave the water and cover distances ranging from 5 to 10 feet. Quite a prodigious leap when one considers their size.

Members of the Gasteropelecidae common to our aquaria are: *Carnegiella strigata*, the marbled hatchet; *C. mothsar*, black-winged hatchet; *Gasteropelecus sternicla*, silver hatchet; *G. levis*, giant silver hatchet.

Even the last-named reaches an adult length of only 2½ in. despite its tag. Not so common to aquaria ever here is a third genus, *Thoracocharax*, containing two species, *secaris* and *stellatus*.

This explanation of just how far these fishes can jump will probably clear up a few mysteries encountered by our readers: (a) how hatchets seem to have mysteriously disappeared from the aquarium, and (b) why their desiccated bodies were discovered so far away. Moral: if you keep hatchets—keep the hatches battened down with an all-over, close-fitting cover.

\* \* \*

Would you be willing to pay a shilling a week to keep your fish tanks free from airborne impurities? That is the figure quoted by Biozonics Corporation to run their D-Tax air purifier, which they claim gets rid of everything from tobacco smoke and cooking oils to paint fumes and aerosol sprays.

Plugged into the air system mist pump and tank, it is a five-layer filter system that last 3 months before it needs changing. One unique feature is a date tag to remind the aquarist when this 'change' comes round. Retail price is about 160 per unit.

\* \* \*

Having the number taken of your parked car usually means that you end up paying a parking fine—not so in some parts of the New World. Latest sales gimmick by pet stores over there is to list car licence numbers in Press advertisements—numbers collected from the vehicles parked round their establishments. Claimants receive a five dollar (£2) prize voucher redeemable for goods or fish at the store. It must make a pleasant change to receive a reward for parking—something that we British car owners would appreciate: it would also provide a more appropriate use for those plastic bags, familiar sights on our windscreens.

## Garden Pool Embellishments

By BRIAN FURNER

**A**QUATIC plants not only beautify a garden pool but also perform several useful functions. Those which spread their leaves on the surface provide shade to the fish in summer and this shading also restricts the growth of green algae. Bubbles of oxygen rise in continuous streams from submerged oxygenators in sunny weather and cleanse the water. Water clarity is most desirable and is only possible where there is sufficient plant growth to utilize surplus mineral salts in the water.

In a new pool the water may be expected to become green in colour within a week or so after filling but as the aquatic plants get into their stride this condition abates and the water gradually clears. Continued good growth of aquatic plants continues because their roots feed on further supplies of dissolved salts obtained from decomposing matter such as fish droppings and other debris.

It is rare to come across a garden pool without water lilies and our native *Nymphaea alba* is the more usual species. The leaves are handsome and the white flowers very attractive but what a strong grower

this lily is. If planted in soil at the base of a garden pool this water lily rapidly makes a take-over bid for the whole surface area. If the pool owner fails to check this rampant growth then he will rarely see his pet fish in the pool between June and November when the mass of lily foliage blankets the surface.

Although other water lilies are not so renowned for their rapid growth I do not favour planting any of them in loose soil in a pool. I plant water lilies and all other aquatics (apart from floaters) in plastic plant containers. The use of these containers not only prevents rampant growth of any particular plant but it also means there is less work to do when the pool is emptied and cleaned up. It is then so easy to lift out the containers, prune or replant where necessary and put them back again in the cleaned pool.

For my own pool I chose the white water lily *Gonnere*. This is a semi-double and very attractive. But one

need not stick simply to white and I also have *Rose Arey* (pink) and *Froebeli* (red). Many of my visitors have never seen pink or red water lilies before and it seems a pity to me that they are not better known among pool owners.

Ideally the growing medium for water lilies is fibrous loam rotted down from turves sandwiched with cow dung for 6 months or so. Like most pool enthusiasts I had none of that around when stocking my pool with water lilies so I used unmanured garden top soil. My soil is on the sandy side and would not stay in the baskets until I lined them with pieces of old sacking.

Plants come first, with fishes a few weeks later. This is the rule when a new pool is being stocked. The time gap permits the plants to settle down and to start growing before the fish start nosing around them. This nosing around not only stirs up mud but can lead to the uprooting of plants and their death. After planting aquatics I prevent this from happening by pressing large stones over the surface of the soil in the containers. The stones prevent the fish from reaching the soil in them. It is



Above: lining the planting basket with old sacking is helpful if the planting medium is slightly sandy. Right: after plants have been arranged in the basket a few large stones are placed on top of the soil to avoid disturbance and the whole is lowered carefully into the pond





Left: the native *Nymphaea alba* is one of the commonest water lilies obtainable for the garden pool and is easily cultivated



Right: a prefabricated basin and cascade placed above the pond can be supplied with a flow of water from a pump at the pond bottom

Photographs by the author

simple to lower a basket carefully into the pool if one wishes the plant to grow near the side. Where the plants are to grow near the centre of the pool there are various ways of setting the baskets in position. If the pool is empty the containers may be positioned immediately before filling the pool with water. If there is water in

the pool it may be possible to wade (bare-footed or in Wellingtons) through a shallow part and lower a basket into deeper water. Alternatively a plank may be placed across the pool so that one may reach any desired spot.

Depth of planting is an important point in water gardening. One can

hardly go wrong with many aquatics which need no more than an inch or so of water over their roots. A few, particularly some of the water lilies, do best beneath a foot or more of water. Even with these I find it pays to plant them at first in shallow water and to move them to greater depths a month or so later.

### A selection of plants for the garden pool

	Colour of flowers	Depth of water over the crown of the plant (in.)	Shallow marginals	Colour of flowers	Height of plant (in.)	Depth of water over the crown of the plant (in.)
<b>Water lilies</b>			<b>Bog arum</b>	White	6	2
Albatross	White	7-24	<b>Creeching brooklime</b>	Blue	6	0
Gladstoniana	White	10-36	<b>Double kingcup</b>	Yellow	12	0
Gonore	White	7-24	<b>Great reed mace</b>	Brown	48	4
Colonel Welch	Yellow	10-36	<b>Great spearwort</b>	Gold	30	3
<i>Pygmaea helvola</i>	Yellow	3-10	<b>Irises</b>	Various	24	0-4
Sunrise	Yellow	7-24	<b>Miniature reed mace</b>	Brown	18	2
Firecrest	Pink	7-24	<b>Monkey musk</b>	Yellow	12	0
Rose Arey	Pink	7-24	<b>Pickerel weed</b>	Light blue	24	3
Escarboucle	Red	10-24	<b>Sweet flag</b>	Yellowish green	30	4
Froebeli	Red	3-15	<b>Water forget-me-not</b>	Blue	6	0
Gloriosa	Red	7-24	<b>Water plantain</b>	Pink	24	3
			<b>Water mint</b>	Lilac	9	0
<b>Deep marginals</b>			<b>Floater</b>			
Arum lily	White	12	<b>Duckweed</b>	—		
Golden club	Yellow	6-18	<b>Frogbit</b>	White		
Water hawthorn	White	6-18	<b>Water soldier</b>	White		

Marginals mask the edge of the pool and link it to the rest of the garden. Their habit of growth provides shallow areas of water in which fry may spend their early days in comparative safety. Although water hawthorn and golden club grow well at a depth of 18 in., the majority of marginals require very shallow water conditions. Which—out of the many marginals—one chooses depends on personal wishes and on the size of the pool. Kingcups are the first to provide a rather startling and welcome splash of colour in my pool during April. Pink-tinged white flowers of the bog bean follow in May when the yellow kingcups are fading. Later in May and during June I have a fine display of variously coloured irises. By that time the water lilies have come into their own and they continue flowering on and off all summer. Birds probably brought seeds of the great reed mace and the small clump of these reeds provides an early autumn display of brown 'bullrush' seed heads. Several other marginals are being planted this month so that my water garden flower display may be even more varied.

Waterfalls and fountains are two other pool embellishments worth considering for a new pool or as additions to the pool one already has. To install a waterfall or a fountain was at one time an expensive business requiring an elaborate plumbing system and overflow arrangements to deal with piped water from the mains supply. All this has changed. No plumbing has to be done these days because modern electric pumps make use of the pool water itself—

Above: the white flowers on the water surface are formed in early summer by the submerged water plant called water crowfoot

Right: among the season's first aquatic plants to bloom are the kingcups. This is a splendid double variety



circulating and aerating it to the benefit of the fish. Apart from any additional electric cable over and above the 10 ft. supplied a waterfall or fountain kit of the 'Otter' type costs no more than around £10. With this submersible type of pump the installation is simple and there is no noise apart from the pleasant running of the waterfall or splashing of the fountain.

## Meetings and Changes of Officers

**BRISTOL T.F.C.** Meetings (change of venue and times): now on the third Thursday of each month at 7.45 p.m. at the National Dock Labour Board Social Club, Welsh Back, Bristol.

**GUILDFORD & D. A.C.** Meetings: Second and fourth Wednesday in month at the Guildford Trades and Labour Club, The Mount, Guildford.

**HASTINGS & ST LEONARDS A.S.** (Change of name from the Hastings and Bechill A.S. owing to formation of the Bechill A.S.). Chairman, Mr G. Pryke; vice-chairman, Mr P. Husband; secretary, Mr P. R. Martin (26 Silverlands Road, St Leonards-on-Sea); assistant, Mrs C. Philard; treasurer, Mr G. Chaloud; show secretary, Mr A. McCormick; P.O. Mr A.

Barnard, Meetings (change of venue): Station Road, Hastings.

**HINCKLEY & D. A.S.** (Change of secretary) Mr D. E. Sparrow, 31 Rugby Road, Hinckley, Leics.

**HOLME VALLEY A.S.** (New Society). Chairman, Mr R. Flynn; vice-chairman, Mr J. Burton; secretary, Mr D. Milnes (26 Long Lane, Hensley, Huddersfield, Yorks.); treasurer, Mrs B. Flynn; show secretary, Mr N. Gibson. Meetings: fortnightly at Hensley Youth Centre.

**HUDDERSFIELD T.F.S.** Chairman, Mr J. Blamires; vice-chairman, Mrs P. Robinson; treasurer, Mr J. Bolton; secretary, Mr J. Wike (200 New Hay Road, Outlane, Huddersfield, Yorks.); show secretary, Mrs M. Bose; magazine ed., Mr B. Robinson.

**ILFORD & D. A. & P.S.** Meetings: Second Monday of month at St Lawrence Church Hall, Hamilton Avenue, Barkingside. Enquiries to secretary Mr R. F. Ruth, 101 Heath Road, Chadwell Heath, Romford (phone 390 1966).

**ISLE OF WIGHT A.S.** Chairman, Mr S. G. Stevens; vice-chairman, Mr D. Crisp; secretary, Mr E. Davison (89 High Street, Shanklin); treasurer, Mr J. Salter; curator, Mr S. G. Stevens; judge, Mr D. Crisp; show secretary, Mr J. Nolan; press and publicity, Mr R. L. Norton.

**NEW FOREST A.S.** Chairman, Mr A. Williamson; vice-chairman, Mr C. Knapp; secretary, Mr R. Travers (6 Oakland Avenue, Brockenhurst); treasurer, Mr D. Tuckwell; show secretary, Mr D. Harding; assistant, Mr D. Lane; P.R.O., Mr K. Hinson.

**STONE A.S.** Chairman, Mr A. Smith; vice-chairman, Mr J. Sanders; secretary, Mr P. J. Clements (135 Fairbrook Avenue, Stafford, Staffs.); treasurer, Mr I. Brough; show secretary, Mr N. Plant (18a High Street, Stone); social secretary, Mr C. Hindley; minutes secretary, Mr D. Plant.

## GOING BRACKISH—2

# My Brackish Community

By ROY PINKS

ONE of the first things that struck me after setting up my brackish water tank was the extraordinary brilliance of the scene. Under Gro-lux lighting the red organ pipe coral contrasted vividly with the groups of white varieties; the light colour of the sand also contributed to the overall attraction by reflecting light upwards and illuminating certain planes of the coral in a particularly appealing fashion. The ease of striking an acceptable layout was also noteworthy. I have tussled long and tediously with conventional freshwater arrangements in an effort to arrive at something that pleases, but I think this comes much less readily, often at the cost of broken plants and frayed tempers.

Freshwater layouts also take longer to settle because plants have to get their roots down into the compost and it is seldom that we are satisfied with the look of the rock-work until we have looked at it from all angles for anything up to a week. This in no way detracts from the pleasures of constructing a freshwater group, but it does emphasise how simple is its brackish or saltwater counterpart, even for the complete beginner.

A further factor which will influence one at this stage is the thought that the tank will exist purely to display the inmates and never to breed them. Perhaps this is a bit defeatist but in view of the pronounced lack of success in breeding the brackish water fishes in captivity it is not altogether unreasonable to assume that you are more likely to derive visual pleasure from your charges than families. In circumstances like this it seems legitimate to plan to spend rather more on it in the interests of decorative impact than would be the case in aquaria which might have to be transformed or adapted suddenly as a consequence of an unexpected spawning or livebearing.

The overall range of fishes for a brackish community is not large, but what this lacks in quantity is more than compensated by quality, or so I have always thought. I can always recall gazing spellbound at a solitary specimen of *Mosodactylus sebæ* in an exhibition tank some 20 years ago. It was a superb specimen and everything about it was a tribute to its class. For the average aquarist *M. sebæ* is a remote acquisition indeed and would be likely to outgrow any but the biggest tanks. It is also notoriously panicky and is likely to drop dead on you any moment. The commoner *argenteus* mono is well known as the Malayan angel but tragically seems to die off sooner than most of its admirers would like, possibly because it is given the wrong sort of surroundings and company. It is a gloriously proportioned shining silvery fish which looks every inch a true 'marine', with its vivid yellow and black markings, and how it flicks itself through the water, so effortlessly, just like so many others of the open sea. They

'blush' to a shade of black when under pressure from fear or anger, but soon regain their normal hues when the mood passes.

The fish most likely to be associated with monos are the scats, most usually referred to as *Scotophilagus argus*. Discoid in shape, with striking finnage, these are available in various sizes and two main colour groupings. One group is coloured yellowish green with black spots and the other is purplish with black spots and carries prominent orange markings on the head and back. The former are called spotted scats and the latter are dubbed tiger scats, but there is a terrible lot of confusion about the nomenclature and all sorts of theories about the reasons for the colour variations. It is sometimes held that it is sex which determines colour whilst other authorities hold that the one is an adult form of the other. It would be nice to know the facts, though in practice all that seems to matter is that you have representatives of both colour groups in your collection, as they are equally worthy.

I think the lighter coloured fish has a slight edge over what I term the tiger scat because it stands out more readily, but on the other hand the darker fish is undoubtedly the more handsome. Unlike the monos they are not normally very graceful—though they can move like lightning if they so choose. Of normality they amble around the tank and often assume such curious positions—head up or head down—that the uninitiated are inclined to thumb up the disease books to discover from what particular form of swimbladder trouble they may be suffering. A recent contributor to *PFM* did them less than justice by asserting that they have no interesting characteristics and are only enjoyable to look at. The latter characteristic is surely a great point in their favour, and furthermore their size, shoaling habits and willingness to feed from their owner's hand put them well up the table for popularity.

I chose bumble-bee gobies as the third of my initial selection. These diminutive creatures, so like their namesakes as to be almost uncanny, are technically *Brachygobius xanthocephalus*, which is a terrifying label for such a charming midget. This fish has a small sucking disc on its underside with which it attaches itself to selected anchorages from which it surveys the passing scene with its large unwavering eyes. It is much more active than many give it credit for and it assiduously explores every nook and cranny which it encounters. It is extremely colourful and charming and several, not ones and twos, are the right proportion for a collection of brackish fishes.

Continued on page 118

# Breeding Behaviour of Seahorses

By KARL PROBST

Photographs by the author

**W**HENEVER it comes into the conversation that I have for many years had a number of seawater aquaria, as a rule I am asked if I also have seahorses. Hardly any other type of creature from the sea is as loved by man as are seahorses. For this reason many people know that with these fish it is the male that 'brings the young into the world'. And the belief is also true that these males behave very courteously to their wives. Aquarists would be the first to doubt this, because in the spawning of fish they seldom see behaviour reminiscent of cavaliers!

In mating seahorses behave like turtledoves and the love play is full of tender elegance. It proceeds according to a strict ritual, which zoologists have been trying for decades to record. Up to now, however, only line drawings and faked photographs which were taken of dried seahorses have been published. Therefore it gives me all the more pleasure that I can show here real photographs and thereby add to the previous observations of scientists.

There are many different kinds of seahorses throughout the world, which one can classify according to the following definite characteristics: (1) how the armour-plated body rings are spiked; (2) to what extent the head bears a helmet-like top or 'crown'. The European prickly or spiny seahorse (*Hippocampus gutturostus*) is most familiar

to us, and occurs in the Atlantic (as far as northern Europe and West Africa) as well as in the Mediterranean. It most resembles the tropical prickly seahorse (*H. hystrix*) and is also called the 'maned' or 'horned' seahorse because two largish spikes reminiscent of horns are on the head. From the Mediterranean to western France the Mediterranean helmeted seahorse (*H. antioqueum*) is distributed. This has no spikes but shows a 'helmet'. The old name 'short-snouted seahorse' should not be used any more because now tropical varieties with short snouts have been recognised.

Seahorses are hardy in numerous ways: on the one hand they are so well armoured that there is hardly an enemy who wants to eat them. On the other hand, they are exceedingly resistant to rough methods of capture and are very hardy introductions to the aquarium. They would make good beginners' fish but for the difficulties with their feeding; they only accept living food which they can take in through their tubular mouths. And if one does not feed them several times a day they are unlikely to survive more than a year. Freshly hatched brine shrimps are accepted only by dwarf seahorses (*H. zosterae*). For the larger ones, older *Artemia* and small *Mysis* are ideal. The best food from freshwater is the phantom (gnat) larva or 'glassworm', chiefly because this creature can live up to



An early breeding sign in the European seahorse is the enlargement of the male's breeding pouch by continuous pumping movements which causes the tail to be pushed to the front.



Male and female come together in the coral. Both have adopted breeding coloration (yellowish-white in the female and the male is covered with glittering spangles).



First attempt is made by the male to embrace the female with his tail. Despite the clear distinction of the sexes by colour seahorses often appear initially to select a partner of the same sex.



With tails curled around and held by one another the pair swim together. A swift uplift of the female's head is the signal for the next stage, occurring in open water



The pair swim hastily to the water surface close together. The black frontal stripe developed during breeding from throat to breeding papilla is a conspicuous feature



Frontal surfaces of the pair are brought together as they circle round and round at the water surface and the female endeavours to insert her breeding papilla into the male's open brood pouch

3 days in seawater. Then mosquito larvae (*Culex*), *Cyclops*, *Daphnia* and young guppies. Freshly dead food will only unwillingly be taken from the bottom. Aeration does not hold such food in movement long and one avoids a fine bubbling emission, otherwise swimbladder disease can occur.

In a seahorse aquarium there should always be objects to which these animals can cling with their prehensile tails. They are so awkward in their feeding habits that one dare not keep them with quick-moving fishes. Furthermore they can fall victims to larger anemones by mistake or be snapped up by rapacious crabs. Although breeding can be achieved with several species, suitable care is needed. The photographs show typical moments in the breeding behaviour, which in previous literature have been little regarded or not described.

The most complete publication on the mating of European seahorses was delivered by Kurt Fiedler in the form of his Dissertation (University Munich, 1954). In this he alluded to the difference in the behaviour of *H. antiquorum* (= *H. brevipinna*) and *H. guttulatus*, of which he had obviously studied the first more closely than the second (he had not seen the egg-laying of *H. guttulatus*). The distribution he explains partly through the hypothesis that these species live in different biotopes (*H. antiquorum* more on a sandy base, *H. guttulatus* amongst sea grass *Zostera marina*). My observations digress in the following points:

(1) Fiedler many times alludes to the point that with *H. guttulatus* the mating does not begin on the bottom, as occurs with *H. antiquorum*, but immediately between plants. I believe that the hypothesis of Fiedler can only be pertinently demonstrated if no open sand surfaces are available. On the contrary, the *H. guttulatus* pair also prefer these open surfaces and glide over them with tails dragged along behind and stretched-up heads. The *H. guttulatus* male, while pumping his breeding pouch,



After spawning the pair allow themselves to sink to the bottom, usually back to back. Sometimes their tails remain entwined and an ascent for a second attempt is made. These procedures may last days or weeks until successful egg deposition is achieved

mostly stretches the tail so far forwards that overall he appears rectangular, and the tail can reach right up to his breast.

(2) That the intertwining of the tails comes soon after the pressing of the heads together, Fiedler alleges to be characteristic of only *H. antiquorum*, also the fact that females ready to mate 'at last come to gripping by the

tail'. This behaviour, as well as the fact that while ascending the female pulls on the male's tail, I have also observed with *H. guttulatus*, and with this species the male also does it. *H. guttulatus* males are apparently more active in that they show the female their distended pouch much more and by striking with the tail. It further appears that these males recognise the female's sex earlier, because with them there is seldom long distractions with pairs of males together.

(3) The black stripe on the front (from the throat to the laying-papilla or brood pouch), previously unmentioned in the literature, appears to fulfil an important marking function. (The contrast is much clearer with the female, because while stimulated she is almost white.) The pair see clearly, because of its presence, that their

body fronts are exactly together as soon as the black marking stripes stand out in the middle of the light surround. Throat and head indeed lie in a plane with the body and the eyes of the seahorse, which are easily swivelled, 'squint' forwards and down. Then the lower ends of the marking stripes need only to be aimed at each other, to bring the laying papilla into the brood pouch. *H. guttulatus* appears to have more need of this aid, because the union must take place more frequently, until all eggs are laid. According to Farzago (1874), at each union only a very few eggs are transferred (perhaps just one), but with *H. antiquorum* there are more than 200. Accordingly the length of the mating process is variable: with *H. antiquorum* about 10 seconds and with *H. guttulatus* only about 2 seconds.

## My Brackish Community

*Continued from page 115*

My final selection was a solitary glass perch. This has always been a favourite of mine and I have often regretted giving up the small collection I made a year or so ago. They were, however, in a badly positioned tank and never got the attention and lighting which they deserve, so they were never revealed to best advantage. In some ways this fish was the odd one out in my brackish collection because it has none of the truly 'marine' looks possessed by the others. I was unable to secure any puffers when I first set the tank up, but I was determined to add some later, as these contribute further flavour to the scene I had set, and were much more appropriate to it than the glass perch.

In making my selection of fishes enthusiasm for procuring species new to me undoubtedly showed up one serious fault. I had been (well) advised to get small specimens, and to stock to near the capacity of the tank, totally disregarding the fact that the fishes would grow. The idea is that they will all remain at much this size, and all will survive—a sort of 'dwarfing' technique. My initial purchases, of scats, complied with this injunction. I bought three tiger scats, and within as many days two had died, leaving one which was hale and hearty. These had been accommodated in an ordinary angle-iron tank which contained freshwater to which salt had been added at the rate of a teaspoonful per gallon.

It is possible that the saline water reacted against the metal and poisoned the fish, but I think not, as the time was too short for this to have happened, and I am more inclined to the belief that I had bought hollow-bellied specimens which always seem to succumb sooner or later. This obvious liveliness of the survivor strengthened this conclusion. A couple of weeks later I secured some magnificent monos and two equally splendid tiger scats which were about 3 in. long. Three bumble-bees joined them. The settling-in period was of about 3 days' dura-

tion, and whilst this was taking place all the fishes with the exception of the gobies were extremely nervous and were off their food.

Considering that each fish had cost me between 20 and 30 shillings I was not enamoured of the prospect that these, too, would take the vapours and leave me. Nothing seemed to appeal to their taste until I offered them some white worm, and this really got them going. Despite all the sneers I find this is the most popular live food which is available the whole year round, though, of course, it should not be overfed. Once the fishes were feeding they got away very well and were soon displaying signs of superb condition. All that was wrong was the disparity in size between the large scats and the rest of the collection, and I wish that I had held back until some smaller specimens had become available.

I was getting quite frustrated about my total failure to track down some puffers of suitable size, and hence when I was presented with three *T. somphongsi* I was delighted with the possession of a species which is noted for its docility and at the same time its unique colour—it is rather like a little tortoiseshell cat with blue eyes. Many aquarists are deterred from keeping any of the *Tetraodon* because they are snappy things with a taste for tails of their own kind as well as others. Some come from freshwater and others from the sea, but most are said to be happy in brackish conditions. The three *somphongsi* I secured were not given much chance of survival by their donors, since I had a 100 mile car journey before I could quarantine them, but ever-optimistic, I did not share these views. They certainly stood the journey without a qualm and it was not long before they were putting on size; they took food as soon as I got them home, and this is always encouraging.

After some 10 days in isolation I put them into the main tank with the scats, monos, bumble-bees and the glass perch. They seemed to settle down peacefully and managed to get their share of food without any difficulty so one might have concluded that the surroundings were quite satisfactory. By this time I had added more salt to the water and the concentration was about a tablespoonful of Meersalz per gallon. Everything was happy enough and feeding normally. These conditions prevailed for a fortnight, then the roof fell in.

*To be continued*



# Pond Life and Live Foods

**FEEDING with live foods is very important, especially for the fish breeder, but many aquarists are unaware of the different types of live foods available to them. In the interests of better fishkeeping the author has been collecting and feeding live foods to his fishes for over 25 years and passes on some of his experiences in this article.**

TO keep our fishes in the best of condition, in good colour and to maintain overall harmony in the tank, I believe that live foods should be fed as well as the prepared dried products, and with the many varieties of live foods available to the aquarist with a little knowledge on the subject, it should be possible for our fishes to receive some form of live food throughout the year.

*Daphnia* can be found in our ponds and even streams right through the winter unless conditions are so severe that the ice is too thick to break through. Some people believe that *Daphnia* as a food has no solid foundation and that the creature's hard shell merely produces a laxative effect. It is not, of course, a complete food in itself but all fish seem to find it a wonderful food and will eat it with relish. There are many species of *Daphnia* to be found in this country, and they come in all sizes and colours from  $\frac{1}{2}$  in. across down to brine-shrimp size, red, greenish, grey or almost black depending on what they have been feeding and the sort of water they have been collected from.

Large numbers of *Daphnia* die off during the winter, of course, but their method of reproduction ensures the reappearance of the crustacean when in spring and summer conditions are once again favourable. For long periods the females go on producing eggs and their young without the presence of the male. When conditions require it, the males reappear and fertilised eggs (resting or winter eggs) are produced. These eggs lie dormant for long periods, awaiting suitable conditions when they will hatch out.

Another wonderful live food is the *Chironomus* larva. It goes under several names such as ghost or phantom larva and glass worm and varies in size from  $\frac{1}{4}$  in. to  $\frac{1}{2}$  in. The larvae can be found in ponds and lakes from November right round to the following April or May according to weather conditions. They are transparent creatures, tapered at both ends, and move through the water in horizontal jerks. They are suitable only for the larger species of fishes, such as angels and the larger characins and barbs, which seem to find them delicious. These larvae should not be fed in breeding tanks because of the risk of their eating the fry. I have never witnessed this, but since they feed naturally on *Daphnia* it is very possible.

In the same ponds from which we obtain our *Daphnia* and ghost larvae can be caught another species called *Cyclops*. These are also plentiful in winter. They grow to slightly less than the size of a water flea (*Daphnia*) and look like small darts or tops, according to how they catch the imagination. These creatures live on small animal life, such as rotifers, Infusoria, tiny *Daphnia*, and thrive in green water and on green algae. *Cyclops nauplii* (a stage of young *Cyclops*) are a very suitable food for some of the

smallest species of fishes we breed in our aquariums. I believe that this live food has been grossly under-rated. Some aquarists say that their fish will not touch them, or that they are too hard on the fishes' mouth, but over the years I've found this food to be rated high in the fishes' diet and is more than appreciated when no other live food is available.

From the pond also comes our finest food for the smallest baby fish, pond Infusoria. Cultures of Infusoria can, of course, also be produced at home with lettuce leaves, dried hay, dried banana skins or potato peel. These should be placed in vessels of cold water and allowed to stand for a few days. The bacteria that arise provide the food for the Infusorians, the spores of which are airborne and will find their way into the vessel.

Perhaps Infusoria cultured at home are safest as our ponds unfortunately not only hold valuable live foods but also unwanted aliens. One of these that can be brought in with *Daphnia* and glass worms are ugly-looking *Hydra*. These may be white, green or brown and can be seen sticking all over the glass sides of the tank and on the

By J. LEE

plants. They will breed into large harvests if not checked. They lie in wait for fry and use their long hair-like tentacles to poison and devour small fry or *Daphnia* or *Cyclops*.

From clear-running freshwater streams we can also obtain excellent live food suitable for the larger fishes. This is *Aeolus*, the freshwater louse. If bunches of plants from such streams are taken and shaken into a container, *Aeolus* of all sizes, from  $\frac{1}{4}$  in. to  $\frac{1}{2}$  in. or more, will come tumbling out of the weed. Another similar creature that many fishes will relish is *Gammarus*, the freshwater shrimp. These grow to about  $\frac{1}{4}$  in. to 1 in. long and like *Aeolus* are grey in colour. Large numbers of these can be found in clear streams, around rocks and plant roots.

*Tubifex* or mud worms can be collected from dirty, stagnant ponds where there are plenty of rotting branches and leaves and mud round the edges. But it's a messy job collecting it and seems hardly worth the while when any amount of these worms can be purchased from local aquatic shops at a very low price. A great deal of *Tubifex* worms are collected from the Thames. Years ago I used to collect my own *Tubifex* from a pond that has since been filled in, but the worms were a really deep crimson colour, probably because of the different environment in which they lived. This is a live food that can be obtained all the year round. A lot of aquarists will not use these worms

and say that they cause disease, but if they are kept properly and cleaned thoroughly the risk of disease is no greater than with any other live food found in water. The best way to keep large amounts of Tubifex is to use a small sink, the bottom of which has been covered with clean, coarse sand, and direct a continual stream of water onto it.

Bloodworms (the larvae of *Chironomus* midges) lay their eggs in a large mass formation that can be seen on plants just below the water line, where they hatch out and settle round the edge of the pond under leaves, twigs and in the mud itself. They move through the water with a figure-of-eight movement, are over  $\frac{1}{2}$  in. in length and are blood red. It is not good practice to give them to small fishes, which can choke on them, but they are very acceptable to larger fish.

Another tasty dish is the mosquito larva, to be found during the summer months. The eggs are laid in 'raft' formation round any pond or ditch where there is water and the larvae can be collected with a fine net. I've often taken these 'rafts' from the top of a little water found in cart tracks in a field. This is a delicious food for tropical fish but it must be used as soon as possible after it is obtained.

Often, dips with the *Daphnia* net in the summer pond bring up a good supply of different sized water tigers or dragonfly larvae. I agree that these ugly-looking brutes are very frightening, with their scorpion-like pincers at the front end and a nasty-looking tail end, but, in spite of their reputation, never throw them out. They are good food for certain types of fishes—the centre of their bodies is very soft and killifishes, the panchax group, revel in eating them. I get the large water tigers up to 2 in. or more in with the *Daphnia* and they all go in the tanks for food.

Away from the pond, there are four species of worm that must be mentioned in any discussion of live food. Perhaps the richest food of all is the common earthworm (*Lumbricus*). There are a lot of different species of worms and some are to be avoided—I learnt this a long while back, being an angler for the biggest part of my life and engaged for many years in collecting worms for fishing. I always avoid worms from smelly dung heaps. The best are the small pink or red worms about 1 in. to 2 in. long, which anglers call 'brandlings', and the best place to find these is under old privet hedge and lawn cuttings. If a wet sack is placed over these you will soon have a small colony of these precious worms. When the worms are gathered they should be placed in some nice green moss where they will thread themselves through and clean themselves of the mud they contain. These worms can be bred in very large earthenware flowerpots. The pots should be kept in the dark and cool and the worms fed on porridge. To get the worms out of the soil I have found that a most effective method is to pour a little mustard water over the surface; as a rule the worms then come up.

Enchytrae, or as we all know them, white worms, are another good solid food for fish that can be found in the garden. These worms range in size from  $\frac{1}{2}$  in. to 1 in. and by far the easiest way to start them is to obtain a culture from a shop or those who supply them. They are very easy to culture and breed. A small wooden or plastic container is required containing a mixture of soil, peat and a little charcoal and sharp sand. They should be kept in a cool, dark, moist place preferably, such as a cellar, and fed regularly on porridge, potato mash or bread soaked in

milk. A small piece of glass put flat on top of the soil after feeding keeps the worms together and makes it easier to collect them off the glass. White worms are excellent for conditioning fish, along with other live foods, to spawn.

A smaller worm, very similar to white worms, are Grindal worms and they are bred and fed in a manner similar to that described for white worms. The worms grow to about  $\frac{1}{4}$  in. in length and are excellent for feeding to fishes too small to take white worms. They should, however, be kept at 60-70°F.

Finally, the smallest worm of all, the micro worm. These tiny creatures are cultured in porridge, potato mash or oatmeal and after a few days the top of the medium is swarming with thousands of them. They can be seen as a shimmering mass and as a food are wonderful for baby fish and play a big part in their successful rearing after the brine shrimp stage. The worm is just visible to the eye and sinks in the water fairly fast. It is pointed at both ends and under a strong magnifying glass has been seen to use its pointed ends to dig its way out of sight below the compost. However, when kept correctly they will swarm up the sides of the container in a web-like pattern. A scrape round the side of the container with a finger or matchstick will leave the worms adhering to the implement, which can then be dipped in the tank. These cultures require changing every so often or they will turn sour and smell. Micro worms are best kept in the seventies.

There are many forms of insect and other animal life that is available for the taking in an abundant and ever-flowing supply. So, this summer, if you are prepared to put yourself out a little for your fishes, why not take a large *Daphnia* net and a small box and look for a meadow with tall grass. If you take a few long sweeps through the grass with the net and look at your 'lucky dip' you will, I am sure, be very surprised at the number of small insects trapped there which will make tasty meals for your stock. Together with the creatures in the water, there is an enormous variety of life available to make a constant supply of live foods for our fishes.



'Liven it up you chaps—no. 3 is getting restless'



# GUPPY

## World

THOSE old codgers like myself, who were around in the early days of organised guppy breeding in Great Britain, know that the aquarist in those halcyon times was often called upon to perform miracles and often did! The impossible took a little longer.

On 31st May, this year of 'Aquarius', contemporary hobbyists saw the impossible happen when The Fancy Guppy Association staged its Fifth International Show at Glebe Farm, Stechford, home of their Birmingham Section. Just look at the record: 848 entries brought some 1200 guppies to the bench. Exhibits came from both the Pacific and Atlantic coasts of America, from Germany, Austria, Denmark and Singapore.

If the names of their owners were a little strange to our Saxon ears, the product of their efforts spoke a common language to fishkeepers everywhere. The 15 Class 'A' judges had their work cut out trying to sort out the best from guppies that would have done justice to any show. One class alone, the Short Dorsal Veiltails, boasted 90 entries. Even classes normally thinly supported, like Lower Swordtails, had 33 figures that would make any show secretary's mouth water.

There are not enough superlatives in our language to describe the high standard of fish and the efforts of the organisers. Sufficient to say that after a decade the guppy folk of these isles had realised the ambition of staging the world's largest show. A big effort from aquarists who boast such a little fish!

\* \* \*

The gestation time, the period between the female being fertilised and her giving birth, is usually reckoned to be between 22 and 24 days, though the optimum conditions

created by the hobbyist when he brought the fish into captivity has resulted in this figure being increased to 25 to 30 days.

Once so fertilised by the male, the guppy mother can have up to a further six broods without any further attention from her spouse. Experiments just completed have shown that the time intervals between successive broods of guppies can be shortened by increasing the number of hours the tank containing the female is illuminated. A warning: leave the lights burning too long and sterilisation can result.

By PETER UNWIN

For quite some time now aquarists have been making use of sponge as a filter medium. Its availability and low price have tempted many hobbyists to use it as a substitute for other filter media. And, seeing as it is used in many of the smaller types of manufactured internal filters, why not?

Unfortunately, many of the pieces of sponge on sale at the ironmongers and supermarkets contain toxic dyes and resins, definitely not suitable for immersion in the aquarium. Don't blame the manufacturers; after all, they didn't make it for this job.

One letter from a guppy breeder told of a complete tank full of fancy guppies, which after such a sponge had been in use for some weeks suddenly started to whirl around like some Indian dervish. Death came quickly, despite rapid attempts at medication. Tests carried out by an expert on both the fish and the tank water revealed that the dye and resins used in the manufacture of the sponge sheet that the breeder had used in an external-type filter had produced the poisons; these had not

made their effect felt until sufficient time had elapsed to lull the aquarist into a feeling of security.

Play safe and, if you are not sure, use only the sponge sold for such purposes. Try leaving a piece of the sponge in water along with a few live *Daphnia* as 'guinea pigs'.

\* \* \*

Do guppies emit sounds? Like the familiar dolphins, do they have a language all of their own?

Research into the subject gives the answer 'yes.' The noises emitted by *Poecilia reticulata* under test varied from a very low volume 'cheep'-ing, rather like a box of newly hatched chicks, to the squeaking of baby mice and certain insects. The report adds that only those guppy keepers with acute hearing capable of detecting sounds slightly above the normal human hearing range will be able to detect the sounds.

I'm not even going to try! Between the row in my fish room that emanates from the argumentative voices of visiting hobbyists and a pump that emits noises like the boiler room of a sinking ship, you would need acute hearing indeed. I doubt whether the guppy equivalent of a sergeant major could be heard above that little lot!

\* \* \*

Readers of 'Guppy World' often write and ask for the names and addresses of pen friends overseas interested in guppies. Knowing what the publication of such information can result in—mail that would rival a pop singer's, I hesitate to publish these without the permission of the correspondent. However, here are some folk who actually ask for letters. After each name I have listed their particular guppy interest.

Dr Victor Scholz (genetics), 7530 South Western, Los Angeles, California, U.S.A.

John R. Parrot (black and cobra guppies), 4488 Paula Street, Lakewood, California, U.S.A.

May Chase (blues and reds), 1135 East 7th Street, 4 Lond Beach, California, U.S.A.

Arnold Setz (guppy photography), Terry Setz (reds and cobras), 1934 Robinson Street, Radondo Beach, California, U.S.A.

Conine Burch (blue and half-black), 5717½ Priory, Bell Gardens, California, U.S.A.



## Personal COMMENT

by  
ARPEE

**D**URING the last year or so dealers have been offering for sale a very attractive little fish which they variously advertise as the platignum, the platinum or the golden tetra. So far as I am aware there is absolutely no connection between this and the famous make of fountain pens, so we will therefore concentrate on the last-named labels.

If you refer to standard works on the subject you will find that the platinum tetra is listed as *Gephyrocharax atrocaudatus*, and if you compare its description with that of the fish, which, perhaps, are disporting themselves in your tank, you will find yourself taking issue with authority. 'Body elongate, strongly compressed. Dorsal fin inserted far back. Lower supporting ray of caudal fin detached, spine-like in the male . . .' and so on. Sterba seems to be talking about something altogether different, and so he is.

If we consult him on the matter of the golden tetra, however, the picture becomes very considerably clearer, because here he sketches a fish that exhibits a beautiful shining gold . . . an intensely shining spot on the nape . . . a dark lozenge shape on the caudal fin root. This goes by the tag of *Hemigrammus armstrongi*, or Armstrong's tetra. It is a fish to which I took an instant dislike when I first saw it a couple of years ago. I saw a tank of them in a dealer's and although they were of good quality there was something not altogether straightforward about them that made me suspicious. As I couldn't quite rationalise this feeling I asked the dealer some questions about them but he turned the tables on me and asked me what was upsetting me.

I answered that it was the uneven iridescence that seemed not quite natural and almost suggested that the fish were in some way diseased. Not altogether to my surprise I was told that it was to some form of minute parasite that this species owed its unusual appearance, that this only existed naturally in the home waters of the fish, and that it did not reproduce elsewhere. As a consequence, although the fish would spawn fairly readily in captivity its offspring were always of sombre tones and never achieved the brilliance of the parents. This seemed a fascinating story and convincing enough, but I have not since seen corroborative evidence of the parasite and its ecology.

It is perhaps sufficient to say that most authorities confirm the disappointing characteristics of fry which are reared in strange waters, so it seems that we have to accustom ourselves to buying in these fish if we wish to take advantage of their charms in a community tank.

I have kept a weather eye on this species for some time now and there seem to be those which exhibit a golden glow and those which exhibit a distinctly more

silvery hue. Then there are those with blacker markings in the tail, then others in which the markings are either almost absent or markedly red. The latter are especially eye-catchers but I am unable to say whether one can rely on any of these forms retaining the features that are evident at purchase.

Some months ago I overcame my initial repugnance when I saw some adult specimens for sale and I decided to give them a trial, though I was far from optimistic about the likely outcome. They were an absolute dream during quarantine and took food almost as soon as they had been rehoused. They never showed any signs of nervousness and put on weight and just a little size. When they joined my other tetras they were immediately evident and have remained so ever since, and it is not being unfair to any other species to say that they rank only a little lower than the cardinals as being the most noticeable fish in the tank.

Whatever the conditions we can be sure of getting signals from these two: then come the glowlights and the fire rasboras and the tiny 'fireflies' in the form of the green-eyed rasboras and the lampeyes. Evidently I was fortunate in getting a pair of these golden tetras, as they have already spawned in the community tank, but this is as far as I shall bother about their procreation unless some different and more favourable light is thrown on the likelihood of producing high quality fry. The fact that they are a pair no doubt helps keep their colour high, but even without this I think I would be tempted again and again to have some of these fish around, as I have been completely converted to them after not such a long acquaintance. I shall be very interested to see how they fare in the longevity League Table, and if they do well in this test they should become firm favourites within a few years.

For those thinking of following my example and trying their hand with this fish, there seem to be no problems connected with their welfare, given normal conditions. They eat almost anything and push their way to the head of the feeding queue quite fearlessly. They seem very happy in the 75-80°F (24-27°C) temperature range, in which the smaller tetras always seem brighter and more active than when they are in the lower reaches of the seventies (°F). If you have room for a shoal they should look superb. I am always on the lookout for fish which will behave well as shoals in community tanks but since I buy so many pairs and trios of different species I never seem to have the vacancies. Since this seems to be the lot of so many fanciers perhaps those who have had particular success in this direction would make their own recommendations in the 1970 'Letters' columns.



One mistake frequently made by beginners setting up their first tank is undue economy in the purchase of plant life. Sometimes this is because of the dilemma of every schoolboy, the perpetual lack of ready cash, but failure is caused by over-confidence in the ability to raise twelve vallisneria from one plant within a month! I nearly always advise the overstocking of a tank in terms of plants, as the reverse process seems to create a

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PETFISH MONTHLY visits

# Mr and Mrs R. E. Dudley at Home

MR R. E. Dudley is a particularly well-known figure around the club shows, and over the last 2 or 3 years has been steadily building up his position as one of the most successful exhibitors of coldwater fishes in the south-east. Ron, as he prefers to be called, is ready to admit to the pleasure he derives from an informal chat and friendly exchange of ideas with his fellow hobbyists, and when PFM visited his Wimbledon home recently it was only with the greatest difficulty that the conversation was steered to cover his own background and achievements in the hobby.

Ample proof of his popularity is to be found in the numerous visitors he entertains each week, and he is also host to the South Park Aquarist Study Society, which he and his wife, Marguerite, founded some 3 years ago. Their 16 year old son, David, has helped them and is now developing an equal skill in his own aquatic activities. All three are members of the Goldfish Society of Great Britain, and Ron is particularly enthusiastic about a new venture he is planning for the development of fancy goldfish varieties: he aims to establish a small nucleus of GSGB members, with sufficient time and tank space to spare, who will each concentrate on the breeding and improvement of a single variety. By specialisation in this manner, it is hoped to preserve the past quality of the fish and avoid the deterioration of stock which Ron fears could cause a serious setback to coldwater fishkeeping in the next decade.

The Dudleys' experience in fish-keeping goes back over 20 years, when Marguerite invested in an aquarium for Ron's birthday—complete with a pair of green tetra. Their serious pursuits began with the arrival of their original fish house in 1950, and since then they have worked as a team to breed and raise various strains of fancy goldfish: this 'team' concept is particularly appropriate since Ron

tends to work on long-term ideas,

leaving the feeding, cleaning, topping-up and other routine duties to the other members of the family. The earliest successes were with globe eyes, joined more recently by pearl-scales; American sunfish have also earned a place in their fish house, and although a spawning of pumpkinseed bass was lost last year, high hopes are held out for 1970. Marguerite succumbed, albeit briefly, to the tropical side of the hobby a short while back, but despite successes with breeding *Cichlasoma xeruum*, blue acaras and convict cichlids she found they did not offer the challenge and satisfaction of the coldwater species (tropical

enthusiasts please note!).

Having heard of the great faith the family have in their own foods, such as live daphnia, white worms and dried ox heart, the visitor would no doubt be taken aback to discover an enormous collection of empty proprietary food drums around the fish house; David, however, is quick to explain that these are the fruits of the various raffles and awards at the club shows they have visited. The secret of success, Ron assures us, is good feeding, plenty of natural light and clean tanks. On this last point, Ron has always been an enthusiastic supporter of sub-gravel (biological) filters and his own aquaria are kept in

Interviewed and photographed  
By CLIFF HARRISON

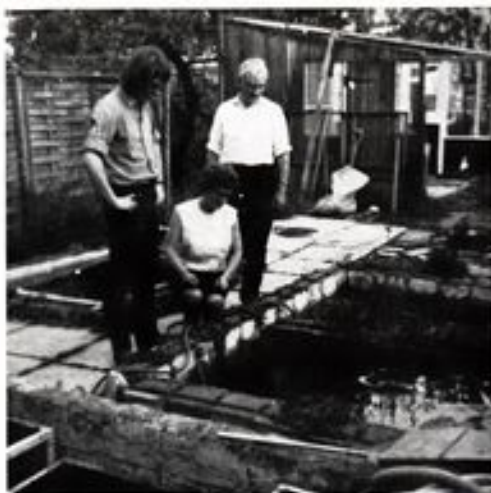


Mr Ron Dudley and son David at work on their new fish house that will have a water-circulating system

good order with them: "This type of filter is the closest one can get to Nature, and surely that would be hard to improve upon". Certainly he has some of the cleanest coldwater tanks to be found, and by avoiding any overcrowding appears to have found the ideal balance.

The Dudleys' garden is fast becoming a maze of concrete ponds, and the aim is to build even more each season to cope with the increase in stock. Ron has always found lack of space to be a big problem and his latest creation—a new fish house to his own design—should help to solve it. The inside is being planned around the late Dr R. J. Affleck's original principles of continuously moving water to achieve optimum growth in young fish, and will hold three 10-ft.-long trough tanks at different levels. Water will be flowing continuously from tank to tank, and between each one there will be a special biological filter to remove the waste and debris. A shallow, circular pool is also to be built, with another water pump to ensure the constant movement of its contents. Although there is still much work to be done during the summer, it is pleasing to see a complete break being made from the jumble of odd-size tanks so often seen in fish houses. When everything is finally in working order, Ron should not be too surprised if he finds other people adopting similar ideas for their own use.

Back indoors, over coffee, Marguerite brought out some of their collection of trophies and awards, including those from the 1969 Aquarium Show. Their proudest possession is a 10 in. high model of a veiltail goldfish, beautifully sculp-



The Dudleys' garden is mainly devoted to ponds. In one of these a spawning of American sunfish occurred last year

tured in German Silver by dockyard apprentices in the early fifties, awarded to them last year at the Portsmouth A.C. Open Show: on this occasion, as at an increasing number of such shows, they managed virtually to sweep the board in the cold-water classes. At most weekends during the summer the family are to be found at some show or convention, representing in strength the cold-water scene. In this way they hope to foster new enthusiasm for what has been regarded for many years as an area of declining interest in the hobby, the 'Cinderella' side of fishkeeping,

and thereby to restore fancy goldfish to their pre-war importance.

Ron Dudley will no doubt be envied by many for the undoubted success he (and his family) have achieved for their efforts in recent years. But in spite of all these successes, perhaps his most important characteristic is one of contentment, reflecting the genuine enjoyment he still gets from fishkeeping—whether it is browsing through his collection of aquatic magazines, collecting *Daphnia* and plants 'in the wilds' or just planning new ventures. And isn't that, after all, just what any hobby is about?

## Personal Comment

*Continued from page 122*

situation in which the plants neither increase nor decrease.

It is in conditions such as these that I find invasions of algae are most likely to arise, and these are very serious setbacks indeed and difficult to control. In my own early days I remember that from the ridiculous I moved to the sublime and bought every different plant I could lay hands on. As with fish, prior knowledge of their habits and ultimate size will save many disappointments. Particularly infuriating in retrospect is the knowledge that I destroyed many resting rhizomes or tubers in the belief that they had died, or seriously affected their future progress by overplanting them with more vigorous plants.

It is also very much of a mistake to imagine for one moment that the initial layout of plants will in any way resemble the way in which Nature will have rearranged it within a year or so. People often say kind things about the plant arrangement in some of my tanks, but I have to tell them that, more often than not, the disposition was only very slightly of my own making. One learns from some of the less expected reactions of plants, but these vary from tank to tank, and from district to district, so that not every failure need be attributed to personal misjudgment. Provided that one keeps an eye on the trends of the more vigorous varieties and holds back their invasions into smaller clumps by judicious pruning, pleasing general contours can be achieved, but it is a mistake to let things just take their course because this is the certain way to get a tankful of just one plant, and the chances are that everyone else for miles around has a surplus of the very same!



## THE AQUARIUM CATFISHES—16

# “All Persons Turn Away”

## (Family Chacidae)

THE more familiar one becomes with the world of fishes, the more difficult it becomes not to notice certain similarities and parallels appearing in completely isolated families and species. It is apparent from this that certain ideas of design and function score proportionately more evolutionary successes than others. While we can only speculate concerning the exact reasons, we can imagine that certain procedures appear in different places at the same time simply because the design was a good and functional one which filled a need and therefore was successful when presented with its mutational chance at establishment.

The idea of a sedentary, bottom-dwelling life sustained by a proportionately enormous mouth is by no

short tentacles on their heads and rings of tentacles around their eyes, others do not. Whether this is a sexual characteristic or is possibly seasonal in nature is not known, but specimens which I have seen appeared not to have them.

This is quite an interesting fish which in spite of its remoteness both geographically and according to family is not dissimilar in its actions to the banjo catfishes of South America (*Aspredinidae*), since it will burrow in the sand and even when touched or dug from beneath the sand with a finger makes little effort to get away.

A predator in Nature, in the aquarium live earthworms or small fishes such as guppies are advisable foods, since

By BRAZ WALKER

*Chaco chaco*, drawn from above (from Day's fishes of India)



means a novelty in the fish world, but the Indian catfish family Chacidae in some ways seems almost to be a low-cost imitation of the goosefish, *Lophius*, which is without any doubt one of the sea's most homely creatures. The similarity of *Chaco chaco*, the only known representative of the family, to the goosefishes had occurred to me not only because of the appearance but also the similar mode of living, but I was a bit surprised to find that this same parallel had been drawn many years ago by Cuvier and Valenciennes when they described the fish as '*Chaco lophioides*'. The specific name *lophioides* means 'like *Lophius*' (the goosefish).

Briefly, the goosefish is the largest of the saltwater angler fishes and certainly among the ugliest. With its built-in fishing rod which is in reality a modified dorsal spine, it waves a juicy-looking 'bait' in front of its unbelievably cavernous mouth. This is adorned outside with concealing fleshy flaps and inside with a battery of murderous teeth. The gape transverges the entire front end of the huge head, and the goosefish earns his living by lying sedentarily in wait for its victims, which consist of everything from sea birds to small sharks.

Described by Hamilton-Buchanan as 'of all the horrid animals of this tribe . . . the most disagreeable to behold', *Chaco chaco* is one of those fishes which is so strikingly ugly that, especially to the collector of the unusual, there is an immediate attraction. Some specimens have

some specimens seem shy about eating. Meinken called the fish 'omnivorous' but I would view this with some reservation, and suggest either live foods or good substitutes such as ground ox heart and frozen or freeze-dried foods. Feeding will probably prove much more successful with the lights out. This is where living foods have a definite advantage since they can be left in the aquarium overnight without danger of water fouling.

Because of its sluggishness, *Chaco chaco* is at a disadvantage with swift, aggressive feeders. For this reason an aquarium of its own kind or of fishes with which it will not have to compete is probably advisable. This is not a large species, reaching little more than 8 inches in Nature and less in the aquarium.

In conclusion, a few sentences from Day's THE FISHES OF INDIA, in which he quotes Hamilton-Buchanan, seem appropriate (*Uranoscopus* is the stargazer and *Cottus* is the sculpin): 'It has the habit of the fishes called by Lacépède *Uranoscope* and *Cotte*, that is, it conceals itself among the mud from which, by its lurid appearance, and a number of loose filamentous substances on its skin, it is scarcely distinguishable, and with its immense mouth open, it is ready to seize any small prey that is passing along. In order that it may see what is approaching, the eyes are placed on the crown of the head. All persons turn away from it with loathing.'

All, perhaps, but collectors of rare catfishes.



# The Black Widow is a Beginner's Fish



By **RUDOLPH ZUKAL**

Photographs by the author

Translation by F. MARSH

THE most usual request that the newcomer to the hobby puts to the aquatic trader or to the experienced tropical fish breeder is: please recommend a fish for me to start off with that is not too demanding or expensive. I get this request almost daily and my answer is not, perhaps, what you might expect. I don't recommend one of the livebearers, but one of a number of barbs and of a few members of the Characidae family. Many experienced aquarists like angel fish (*Pterophyllum scalare*), but the beginner's first tank is often too small for the fish. So I always recommend the black widow (*Gymnocorymbus ternetzi*). In body shape and colour it is not unlike the angel fish but is not so demanding about 'living room', as it only grows to about 1½-2 in.

The black widow was first imported into Europe in 1935 from the River Paraguay and the River Negro in Brazil. Its pleasing shape, and the fact that it is undemanding and peaceful, makes it easy to understand why it is that it is so often seen in aquaria. It has a deep, fairly elongate body, compressed at the sides, with well developed fins. The front of the body is silvery grey with two black oblique bands behind the jaws and with a dark streak across the eyes. The jaw is black. In young fish the hind part of the body, and the dorsal and anal fins, are deep black but with age this black becomes less intense. Pectoral and caudal fins are pale-coloured and transparent.

The male is the smaller, slimmer fish and when he swims against the light it is possible to see that the male's body-cavity tapers towards the rear. The caudal fin of the male often has visible white



After attempts by the darker male to stay by the side of the female he rams her gently in the belly region

spots on it. The female fish is bigger, rather more robust-looking and, again, when the body cavity is visible it can be seen to be rounded at the posterior end. The female is also somewhat lighter in colour.

A medium-sized tank, normal tapwater and a variety of ordinary aquarium plants, with a few floating plants, suit this fish very well. They will eat all types of food, prefer to be kept in a small shoal and can be recommended for a community tank with inhabitants of *Hyphessobrycon* and *Hemigrammus* species.

Black widows are not at all difficult to breed. So that I could photograph the fish in the act of spawning I used an all-glass tank, of about 2½ gallons capacity, filled with tapwater that had stood for some time and had been acidified with the help of peat. The temperature was 79°F (26°C). As these fish spawn on fine-leaved plants I put a few clumps of *Najas* at the back of the tank, and in the foreground, Java moss and single *Myriophyllum*. The fish are very productive and it is not unusual for up to 1000 eggs to be laid, but the parents should be removed after the spawning is completed as they will eat the eggs. It is very difficult to see the eggs whilst they are being laid.

The fry hatch after about 36 hours and are free-swimming after a further 5 days, when they must be fed well with the finest fry food and live food. Because of the quantity of young involved the tank must be provided with good aeration and, of course, if all the young are to be reared they must be spread out into numerous tanks after 2-3 weeks. The fish become sexually mature after 8 months, but it is best not to put them to spawn before their second year. Long-finned varieties of black widows have been bred recently.



The pair swim into the plants very close together and the male embraces the female with his tail fin



After the embrace the pair of widows commence to twist and turn, expulsion of eggs taking place as they twist apart



The spawning act is over in a split second and this picture catches the pair almost inverted as they separate



**THE TROWBRIDGE & D.A.S.** fifth Open Show was an outstanding success with a record number of fish entries, 665. Over 500 visitors visited the pleasant venue, the Nelson Haden Girls School hall, and took full advantage of the members surplus fish trade stand. The special display of aquarium fishes proved very popular. Class winners at the show were:

Small barbs, Mr F. Brown; a.o.v. barbs, Mr F. Brown, H. & H., Mr R. Harvey; a.o.v. characins, Mr C. Phipps; *Apistogramma* and *Nannacara*, Mr T. Hatton; a.o.v. cichlid, Mr P. Treadgold; Angels, Mr A. Bull; Siamese fighters, Mr S. Scudamore; a.o.v. labyrinth, Mr C. Butcher; Egg-laying toothcarps, Mr C. Phipps; Catfish, Mr B. Snell; *Corydoras*, Mr F. Williams; Rasboras, Mr M. Patrick; Danios and minnows, Mr M. Butcher; *Botia*, loaches and cels, Mr G. Furber; a.o.v. tropical, Mr T. Jones; Sexed pairs, Mr C. Phipps; Guppies, male, Mr M. Baylton; female, Mr J. Wheeler; Swordtails, Mr T. Hodge; platys, Master Patrick; mollies, Mr J. Purnford; Common goldfish, Mr R. Sudd; shubunkins, Mr D. Langdon; a.o.v. fancy goldfish, Mr R. King; Breeders egg-layers, Mr P. Treadgold; livebearers, Mr G. Furber; Furnished jar, Mr C. Phipps.

The fish that won the best in show award and the award for the best tropical was a red-finned shark entered by Mr T. Jones of Weymouth.

**THE UXBRIDGE & D.A.S.** open show attracted 477 fishes in the 24 classes. Judges Mr A. Jessopp, Mr F. Tomkins, Mr C. Brown, Mr H. Towell, Mr K. Nutt and Mr R. Esson, awarded firsts in class to the following:

Individual furnished aquaria, Mr R. Forder (Uxbridge); Barbs, Mr P. Grosvenor (Peter Ginger Barb Cup, schuberti barb); Characins, Mr J. Pollard (Kingston, *Chirodon arnoldi*); Cichlids, Mrs Nethersole (Riverside, *Tilapia zillii*); dwarf cichlid, Mr A. Blake (Basingstoke, *A. ramirezi*); a.s. labyrinth, Mr F. Kendrick (Freelance, combtail); Egg-laying toothcarp, Mr Tarrant (Hendon, *Cyrtopoma ruber*); Tropical catfish, Mr C. Backland (Riverside, *P. gracilis*); *Corydoras*, Brochis, Mr S. Mooney (Tottenham, *C. cochui*); Rasboras, Mr B. Funnell (Uxbridge, *R. daniconius*); Danios, minnows, Mr B. Smith (Kingston, zebra danio); Loaches, Mr M. Carter (Bracknell, dwarf botia); Tropical egg-layers, Mr D. C. Bunday (Bethnal Green, red-finned shark); Two pairs of a.v. tropical fish, Mr G. Greenhalf (Kingston, blue lineias, giant danio).

Guppies, male, Mr R. Bowes (Walthamstow); swords, Mr T. Cruickshank (Ealing, red sword); platy, Mr R. Forder (Uxbridge, best fish in the show; marigold platy); Molly, Mrs D. Cruickshank (Trophy presented by The Arcade Pet Stores, Uxbridge, velifera). A.o.v. livebearer, Mrs D. Cruickshank (*L. vittata*).

Single tail goldfish, Mr D. Goodbody (Walthamstow, Bristol shubunkin); twin tail goldfish, Mr W. Bradford (Uxbridge, twin tail goldfish); Breeders, egg-layers, Mr R. Cox (High Wycombe, *C. paleatus*); livebearers, Mr G. Greenhalf (Kingston, velifera mollies).

Plants, Mr R. Forder (F.B.A.S. Colindale Plant trophy, Uxbridge, *Jenestralfis*).

Mr G. Greenhalf won the Annual Committee trophy for the best fish over 9 in. long—a black shark. The Cup for the club with the highest points went to host club Uxbridge (2, Kingston; 3, Walthamstow).

**BOSTON A.S.** second Open Show proved a real 'crowd-puller'. Entries were exactly double those of last year and 348 exhibitors from many societies competed for the 11 tanks, trophies and other prizes. Prizes were presented by president, Mr A. Woodthorpe, and judges were Mr A. Lindley of Alfreton and Mr B. Inman of Nottingham. Two societies, the week-old Sherwood A.S. and the well-known Alfreton A.S., took the major share of the prizes. Mr J. Wright of Alfreton won the best fish in the show trophy and the best tropical fish award, and the best coldwater fish Cup was won by Mr M. J. Saunders of Spalding. Altogether members were delighted that the reputation that the Society made with its first show should have been so enhanced by its second. Other class winners were:

Guppies, Mr G. Buchanan (Sherwood); mollies, Mr J. Igoe (Sherwood); swordtails, Mr H. Bunnage (Lincoln); platys, Mr H. Kuhn (Lincoln); Barbs, small, Mr J. Wright (Alfreton); large, Mr E. Parker (Grimby); Characins, small, Mr J. Wright; large, Mr Duffin (Boston); Killifish, Mr M. Skivington (Alfreton); Minnows and danios, Mr M. Allsopp (Alfreton); Sharks and foxes, Mr T. Sands (Boston); Rasboras, Mr S. Gerrard (Alfreton); Cichlids, dwarf, Mr H. Kuhn; large, Mr J. Wright; angels, Mr D. Sewell (Sherwood); Catfish, Mr G. Buchanan (Sherwood); Loaches, Mr D. Jackson (Dukeries); Fighters, Mr Pattison (Grantham); a.o.v. anabantids, Mr H. Bunnage; a.o.v. tropical, Mr E. C. Smaller (Boston); Breeders, egg-layers, Mr J. Igoe; livebearers, Mr H. Kuhn; Pairs, egg-layers, Mr R. Clarke (Sherwood); livebearers, Mr P. Strange (Kettering); Goldfish and comets, Mr Bannister (Boston); shubunkins and fancy goldfish, Mr Saunders (Spalding); a.o.v. coldwater, Mr T. Sands (Boston).

**OSRAM A.S.** Open Show was judged by Mr W. Loder and Mr B. Pengilley (F.N.A.S.) who awarded first in class to the following:

Anabantids, Mrs A. Gregory (Nelson, 75); fighters, Mr and Mrs Hogarth (Salford, 73); Barbs, small, Mr F. Gregory (Osram, 81); large, Mr K. Parkes (Merseyside, 77); Labesos and sharks, Mr B. Seabright (Gorton & Openshaw, 82); best fish in show; Characins, small, Mr F. Gregory (80); medium, Mr S.

**THIS year's MIDLAND OPEN SHOW (M.A.P.S.) is being held at Bingley Hall from 12th August to 15th August inclusive. Times of opening are Wednesday, 2.30-10 p.m., Thursday and Friday, 12-10 p.m. and Saturday 10 a.m.-8 p.m. (Admission is 25 6d for adults and 11 for children and O.A.P.) Schedules from Mr J. Fellows, 18 Wordsworth Avenue, Headless Cross, Redditch, Worcs.**

Harrop (Osram, 80); large, Mr K. Parkes (81); Angels, Mr and Mrs H. Cooper (Bury, 76); cichlids, dwarf, Mr G. Rigby (Oldham, 82); large, Mr and Mrs Ormesher (Southport, 80); Toothcarps, Mr and Mrs Johnson (Salford, 78); Rasboras, R. & A. Johnson (Ashton, 79); Danios, Mr H. Rowman (Northwich, 77); Guppies, Mr P. J. Duffy (Alfreton & F.G.A., 86); swordtails, Mr R. Antonio (77); mollies, Mr and Mrs Hogarth (Salford, 81); platys, Mr I. Bewick (Valley, 78); a.o.v. livebearer, Mr and Mrs Heap (Belle Vue, 78); Loaches, Mr F. Mulla (Merseyside, 78); Catfish, Mr R. Davies (Belle Vue, 80).

Goldfish, Master F. Cobb (Belle Vue, 76); shubunkins, Mr S. Walsh (Accrington, 80); veiltails, Mr S. Walsh (79); orandas and lionheads, Mr C. Whitsey (Accrington, 75); a.o.v. coldwater, Mr and Mrs Millar (Belle Vue, 79); Breeders, egg-layers, Mr I. Hindley (Salford, 80); livebearers, Mr P. J. Duffy (Alfreton & F.G.A., 77); guppies, J. & B. Dawson (Osram, 78); Pairs, egg-layers, Mr F. Robinson (Sunny Brow, 78); livebearers, Mrs A. Gregory (Nelson, 81); a.o.v., Mr J. Tonge (Oldham, 80); Osram juniors a.v., D. Butterworth; Osram juniors tiger barbs, M. Ritchie (F. Gregory trophy).

**MRS NICOLL** of Reigate & Redhill was very successful at the **CROYDON A.S.** Open Show. The *Corydoras julii* that she entered won for her the best fish in show award and the Best Egg-layer Cup. She was also presented with the Ladies Rose Bowl. Twenty-seven clubs in total were represented at the show and benched 551 entries. Club members wish to thank all entrants, judges and visitors who helped to make the show such a success. Those who came first in classes were:

Barbs, Mr C. Pike (High Wycombe, checker barb, 70); the F.B.A.S. trophy for barbs; Characins, Mr G. Greenhalf (Kingston, Congo, 82); Cichlids, Mr Harper (Kingston, *T. nilotica*, 81); dwarfs, Mr S. Dale (Hounslow, *P. gantneri*, 80); Labyrinth, Mr Kendrick (Freelance, combtail, 82); Siamese fighters, Mr A. Blake (Basingstoke, red, 78); Toothcarps, Mr Golding (Tonbridge, *P. asiaticus*, 75); Tropical catfish, Mr G. Greenhalf (Kingston, *P. rasborei*, 81); *Corydoras/Brochis*, Mrs Nicoll (Reigate & Redhill, *C. julii*, 81); Rasboras, Mr Harper (Kingston, red line, 80); Danios and minnows, Mr Harper (giant danio, 70); Loach, Mr Tee (Brighton, *Botia modesta*, 85); Tropical egg-layer, Mr Bundy (Bethnal Green, red-finned shark, 80).

Guppy, male, Mr Bowes (Walthamstow, 78); female, Mr J. Stephens (Dartford, 78); swordtails, Mr E. Horsley (Carshalton, red male, 79); platy, Mr A. Howes (Freelance, red, 78); molly, Mr G. Greenhalf (Kingston, velifera, 79); a.o.s. livebearer, Mr Pollard (Kingston, half beak, 80); Best Livebearer Cup, Singletail goldfish, S. & H. Parker (Croydon, common, 92); Best Coldwater Cup; twin tail goldfish, Mrs Pearce (Catford twintail, 78); a.o.s. coldwater, Mr V. Voysey (Salisbury, peacock-eyed bass, 90); Breeders, egg-layers, Mr R. G. Cox (High Wycombe, *C. paleatus*, 76); Best Breeders Team; livebearers, Mr J. Wright (Reigate & Redhill, merry widow, 76).

Kingston & D. A.S. won the Croydon Cup.

WITH 272 jars containing 355 fishes on display and visitors from all over southern England, the EDMONTON SECTION of the FANCY GUPPY ASSOCIATION made a very good start to the show season when they held their Spring Open Show. This was the first open show

of the year for guppy breeders and the exhibitors, some of whom had made the journey down from Birmingham, put on a display of guppies of which quite a few must be considered the finest in Great Britain if not the world. The principal award winners were presented with perpetual desk calendar and pen sets whilst the individual class winners received engraved ash trays bearing an enamelled guppy motif. While the judging took place visitors were entertained with a film on marine life.

The high standard of fishes on show was reflected in the fact that of the 35 class winners 24 qualified for Gold and Silver Star awards. Mr Fowles and Mr Vinal entered the best fish in show, a delta-tailed male, and the best in breeders class, a team of females. Best Opposite Sex was a natural-tailed female entered by P. Moriarty. Class winners were (section names: EL, East London; E, Edmonton; B, Birmingham; R, Radlett):

**Male classes.** Cofer, Mr D. Crane (EL, 75). Top award, Mr W. Holmes (E, 70). Best in show, Mr M. Delapole (B, 71). Double sword, Mr M. Delapole (B, 72). Original vertical, Messrs Fowles & Vinal (E, 73). Long dorsal veil, Mr D. Crane (EL, 75). Short dorsal veil, Messrs Fowles & Vinal (E, 75). Star, Delta, Messrs Fowles & Vinal (E, 73). Faint, Mr P. Bailey (E, 76). Star, Scarf, Mr S. Duckworth (E, 71). Dorsal, Mr P. Bailey (E, 75). Spent, Mr R. Clarke (E, 74). Faint, Mrs J. Croft (B, 71). Colour, Mr D. Crane (EL, 74). Ladies, Mrs Moriarty (R, 74, Star).

**Female classes.** Roundtail, Mr M. Delapole (B, 74). Superba, Mr P. Moriarty (B, 72). Metropolitan, Mr and Mrs Phillimore (E, 73). Scallops, Mr E. Manning (E, 74). Wedge, Messrs Fowles & Vinal (E, 75). Star, Natural tail, Mr P. Moriarty (R, 80, Star). Cofer, Mr P. Moriarty (B, 74, Star). Colour, Messrs Redford & Bullard (R, 80, Star). Ladies, Mrs Moriarty (B, 72, Star).

**Junior classes.** Male, Master R. Smith (E, 70). Female, Master R. Smith (E, 75, Star). Breeders, Master R. Smith (E, 70).

**Breeders classes.** Ladies, Mrs F. Goodall (E, 76, Star). Experimental female, Messrs Fowles & Vinal (E, 84). Females, Messrs Fowles & Vinal (E, 76, Star). Males, Messrs Fowles & Vinal (Edmonton, 76, Star). Matched pairs, Messrs Fowles & Vinal (Edmonton, 75, Star). Master breeders, Mr and Mrs Phillimore (E, 71). Advanced master breeders, Mr M. Delapole (B, 74). Non-members class, Mr A. Fowles (74).

All enquiries about membership to Mr D. Phillimore, 105 Wilbury Way, Edmonton, London, N.18 (phone 01-853 3012).

**AN UPSIDE-DOWN** catfish, shown by Mr K. Low, achieved the best in the show award at **STOCKTON-ON-TEES A.S. Open Show**. Class winners were:

Furnished aquaria, Messrs R. & D. Shanks. Furnished jar, Mr J. Orr. A.V. fighter, Mr J. Orr. A.V. hybrid, Mr D. Bentley. A.V. large cichlid, Mr G. Lee. A.V. barb, Mr L. Collins. A.V. characin, Mr K. Low. A.V. platy, Mr L. Collins. A.V. swordtail, Mr L. Osman. A.V. mollie, Mr B. Wallis. A.V. swordgrazer, Mr K. Low. A.V. Corydoras, Mr E. Turnbull. A.V. guppy, Mr and Mrs Atwell. A.V. dwarf cichlid, Mr and Mrs Clowett. A.V. egg-laying toothcarp, Mr W.

Carter. A.V. rasbora/danio, Mr G. Lee. A.V.V. tropical fish, Miss L. Corvett. Breeding pairs, egg-layers, Mr and Mrs Atwell. Livebearers, Mr B. Wallis. Breeders class, egg-layers, Mr L. Collins. Livebearers, Mr C. Buck. A.V. coldwater, Mr K. Hickford.

**THURROCK A.S.** third annual Open Show was held recently and while the judges were assessing the 506 entries visitors were able to watch the afternoon's sport on a specially installed T.V. set. Thurrock member Mr Ed Nicol prepared and cooked a meal for over 60 people and light refreshments were served during the afternoon. Apart from the 486 tropical fishes entered, there were also 15 furnished aquaria, 29 tropical plants and 20 coldwater fishes. Twenty-three societies entered the show as well as many freelance aquarists. Many visitors congratulated show secretary Mr D. Durrant and his assistant Mr J. Furber on the show's arrangements. Mr Ted Jessopp, chairman of the F.R.A.S., presented the awards. First-place winners in the classes were as follows:

Furnished aquaria, Mr S. Mooney (Totterham). Tropical plants, Mrs Scott (Walthamstow). Single tail goldfish, Mr D. Goodbody (Walthamstow). Secretary's Tray for the best coldwater fish; twin tail goldfish, Mr R. Appleby (Thurrock); a.o.v. coldwater, Mr J. Scott (Walthamstow). Angelfish, Mr J. Stephens (N. Kent). Guppies, female, Mr C. Elliott (Medway); male, Mrs Myers (F.G.R.S.). Fighters, Mr D. Durrant (Thurrock). Danios and minnows, Mr J. Stephens (N. Kent). Swordtails, Mr R. Baulson (Walthamstow). Essex Cop for the Best Livebearer, Corydoras (Bucks), Mr S. Mooney (Totterham). Catfish, Mr G. Greenhall (Kington). Durrant Rosebowl, Characina, Mr G. Greenhall (President's Shield). Egg-laying toothcarp, Mr R. Taylor (Tonbridge). Puncok Cup, Mollies, Mr R. Alborough (Thurrock). Cichlids, dwarf, Mr T. Cruickshank (Lalage); large, Mr J. Foley (Barnwood); John Forber trophy, Labyrinth, Mr F. Kendrick (Freelance, Appleby Award Trophy). In this class, Mr J. Grace of Enfield won the Show Secretary's trophy for the best leech. Leech, Mrs Greenhall (Kington). Barbs,



Mr D. Goodbody (Walthamstow) receives the best coldwater fish award from Mr Ted Jessopp (right) at the Thurrock A.S. Show

Mr T. Cruickshank (Lalage) (Presce trophy). Rasbora, Mr J. Stephens (N. Kent). Flota, Mrs Cruickshank (Uxbridge). A.o.v. livebearer, Mrs Cruickshank. A.o.v. egg-layer, Mr D. Bursly (Bethnal Green). Interpet trophy for best fish in the show, award for best tropical egg-layer, award for best tropical fish. Sexed pair, tropical, Mr C. Wood (N. Kent); Breeders, livebearers, Mr R. Mather (Walthamstow); egg-layers, Mr J. Scott (Walthamstow); Nicol trophy best breeders team).

The Topa Trophy for the society gaining the most points (including Thurrock) was awarded to Walthamstow.

**JUDGES** at the **TOP TEN A.S.** second Open Show, Mr C. Walker (Oldham), Mr G. Holmes (Bradford), Mr R. Hampson (Horsforth) and Mr Leed (Oldham) were faced with 745 entries from 47 societies to assess. Class winners were:

Guppies, Miss Lindley (Alfreton); swordtails, Mr A. Hudson (Wakefield); platys, Mr and Mrs Anson (Nanterton); mollies, Mr J. Igoe (Rainworth); a.o.v. livebearer, Mr L. Igoe (Top Ten). Barbs, up to and including nigger, Mr F. Gorgoxy (Oswestry); over nigger, Mr K. Purkes (Merseyside). Toothcarps, Mr W. Bailey (B.K.A.). Characina, small, Mr D. Sewell (Rainworth); over bleeding hearts, Mr K. Purkes, A.V. dwarf cichlid, Mr B. Mopson (Aireborough); angels, Mr B. Williams (Four Star); a.o.v. cichlid, Mr and Mrs Ormister (Southport); best in the show, Anabantids, up to giant, Mr N. Gibson (Huddersfield); fighters, Mr and Mrs Cohen (Cauldwell); a.o.v. anabantid, Mr D. Sewell (Rainworth).

Sharks and flying foxes, Mrs Seal (Selby). Danios and minnows, Mr K. Stafford (Oldham). Rasbora, Mr and Mrs Cox (Nanterton). Loaches, Mr D. Jackson (Dukeries). Corydoras, Mr R. Davies (Belle Vue); a.o.v. catfish, Mr L. Antonio (Northwich). Breeders, livebearer, Mr N. Gibson (Huddersfield); egg-layer, Mr F. Buxton (Barnsley). Ladies a.o.v., Mrs Davies (Barnsley). Pairs, livebearer, Mr D. Goodbody (Stockbridge). A.V. female, Mr G. Thickbroom (Caudwell). Pairs, egg-layer, I. & K. Barlow (Ashton). A.V. tropical, Mr D. Kennedy (Bradford). Fancy goldfish, Mr Moorhouse (Bradford); a.o.v. coldwater, Mr and Mrs Miller (Belle Vue). Juniors up to 15 years, a.o.v., Master A. Kaye (Top Ten).

**SUNNY WEATHER** brought many spectators along to the **BURY & D. A.S. Open Show** and many Lancashire and Yorkshire societies were well represented, to bring the total number of entries well up on last year's total. Bury itself won back the inter-society shield which they lost last year. Mr J. Tonge of Oldham won the best fish in show award with a snakehead. Class winners were:

Guppies, male, Mr and Mrs Cobb (Belle Vue, 26, section winner); female, J. & R. Dawson (Oswestry, 25); platys, Miss L. Hindley (Salford, 26); mollies, Mr and Mrs Hogarth (Salford, 28, section winner); swordtails, Mr N. R. Gibson (Huddersfield, 27). Characina, small, Mr S. Harrop (Oswestry, 80); large, Mr R. Haslam (Leyce, 81, section winner). Cichlids, dwarf, Mr G. Rigby (Oldham, 79, section winner); angels, Mr R. Walker (Bury, 78); a.o.v. cichlid, D. & R. Standon (Leyce, 78). Barbs, small, Mr A. Beasley (Oswestry, 80, section winner); large, Mr C. Stewart (Independent, 76). Fighters, self-coloured, Mr and Mrs Hogarth (Salford, 82); multi-coloured, Mr B. Wright (Hyde, 78); a.o.v. labyrinth, Mr J. Tonge (Oldham, 84, section winner). Rasbora, danios and minnows, Mr A. Beasley (Oswestry, 85). Egg-laying toothcarps, Mr and Mrs Johnson

(Salford, 81, section winner). Catfish, Mr R. Davies (Belle Vue, 82, section winner). Loaches, Mr A. Mills (Bury, 78). Sharks and foxes, D. & R. Standen (Loyne, 79). Pairs, egglayers, D. & R. Standen (Loyne, 82, section winner); livebearers, Miss A. Gregory (Earby, 79). Breeders, egglayers, Mr E. Lever (Bury, 80, section winner); livebearers, Mr N. R. Gibson (Huddersfield, 79). A.V. aquatic plant, rooted, Mr A. Mills (Bury, 79); cutting, Mr A. Besley (Oswin, 80, section winner). Common goldfish, Master F. Cobb (Belle Vue, 71); a.v. fancy goldfish, Mr P. Danielson (Huddersfield, 74); a.o.v. coldwater, Mr and Mrs Miller (Belle Vue, 77). A.O.V. tropical, D. & R. Standen (Loyne, 80, section winner).

WHILE the judges considered the 511 fishes benched at the COVENTRY POOL & A.S. Mr Roy Skipper gave a most enjoyable lecture on discus fish illustrated with some really magnificent slides. About 600 visited the show and the society with the most entries and also the most points was Bedworth. Mr R. Trippas of M.T.A. achieved the most individual points. Mr R. D. J. Langford of Bedworth won the marine tank that was the door prize. The best fish in show was a velifera molly entered by Mr and Mrs Carter of Bedworth. First-prize winners were:

Guppies, male veiltail, Mr D. Cannon (Nuneaton, 81); a.o.v. male, Mr Hathaway (Bedworth, 62); a.v. female, Mr Mowell (Derby, 74); mollies, Mr and Mrs Casey (Bedworth, 80); a.o.v. livebearers, Mr N. Furness (Longbridge, 68). Danos and minnows, Miss Chen (T.P.A.S., 63). Rabbots, Mr Furness (Longbridge, 64). Barbs, small, Mr Masby (Widnesbury, 76, section winner); large, Mr R. Trippas (M.T.A., 78, section winner). Cichlids, dwarf, Mr Westmancock (Binks & Ballows, 76, section winner); angelfish, Mr J. A. Tucker (79); a.o.v. cichlids, Mr Dean (T.K.A.G., 78). Characins, small, Mr Willets (Haydon, 79, section winner); large, Mr R. Todd (Bedworth, 84, section winner). Killifish, Mr T. Lockson (Coventry, 79, section winner). Fighting fish, Mr J. Fellows (M.A.P.S., 78); a.o.v. anabantid, Mr Willes (Haydon, 76). Corydoras and Brochis, Mr G. Furness (Binks & Ballows, 76), section winner; a.o.v. catfish, Mr J. Reeves (Widnesbury, 76), section winner. Loaches, Mr G. H. Roberts (71, section winner). Pairs, livebearer, Mr R. Trippas (M.T.A., 68), section winner; egg-layers, Mr R. Shakespeare (Bedworth, 79, section winner). Breeders, livebearers, Mr N. Jones (Nuneaton, 74, section winner); egg-layers, Messrs Edlin & Padgett (Bedworth, 74), section winner). Labras and sharks, Mr D. J. Smith (Leicester Fishkeepers, 71). A.o.v. tropical, Mr and Mrs Cox (Nuneaton, 71). Shubunkers, Mr B. Woodfield (Coventry, 74); common goldfish, Mr M. Shilton (71); a.o.v. fancy goldfish, Mrs S. Leigh (Nuneaton, 80); British native coldwater, Mr R. Todd (Bedworth, 73); a.o.v. coldwater, Mrs V. S. Haines (Nuneaton, 71).

WHEN Mr Alan Jackson lectured to MID-SUSSEX members on catfish, he reminded his listeners that a few scraps of food reaching the bottom of a tank after the other fishes had eaten their fill were not sufficient to keep catfish well fed; they should, furthermore, be fed at night as they are nocturnal fishes.

A GREAT deal of activity has been taking place on the subject of a national competitive standard for coldwater fishes. A meeting was held in May, at the Ladywood Community Centre in Birmingham, under the chairmanship of Mr T. L. Dodge, which 16 people attended by invitation from areas covering the North, North East, London, Bristol and the Midlands. It was there unanimously resolved that a truly national competitive standard, democratically arrived at, was much needed, and personal invitations were sent out to all known Associations, Federations etc. to send a minimum of three delegates, all of whom should carry voting authority from their respective organisations, to attend another meeting on 19th July. We hope to publish the results of this meeting as soon as they are received.

AT the SOUTHEND, LEIGH & D.A.S. Open Show, the best fish in the show award went to Mr R. Kerridge. Other winners of the classes were:

Guppies, a.v. male, Mr K. Lane (Southend, Mrs J. Norris trophy); a.v. female, Mr R. Passmore (Southend); a.v. play, Mr R. D. Orford (Southend); a.v. sword, Mr P. O'Brien (Thurrock, Don Fish Cup); a.v. roly, Mr G. S. Green; a.v. barb, Mr D. Edwards (Southend, D. Edwards trophy). Cichlids, dwarf, Mr D. Edwards (M. Upton trophy); a.v. angelfish, Mr D. Chewright (Southend); a.o.v. cichlid, Mr D. Edwards (R. Nield trophy). Toothcarps, Mr R. Simpson (R. Williams trophy); Danos and minnows, Mr F. W. Few; Rabbots, Mr D. Edwards; a.v. fighter, Mr D. Durrant (Thurrock); a.o.v. labyrinth, Mr R. Kerridge; Corydoras and Brochis, Mr T. Clark (Southend); a.o.v. catfish, Mr R. Kerridge; A.o.v. tropical, Mr R. Smith. A.v. coldwater, Mr R. Passmore (Southend). Breeders, livebearers, Mr D. Chewright (SLADAS Cup); egglayers, Mr J. J. Arno (Ches' Cup); A.v. tropical marine, Mr R. Goodwin (Widnesmore trophy). Furnished aquaria, Mr S. Mole (SLADAS Cup); A.v. tropical plant, Mr M. Upton (Southend); Characins, Mr R. Kerridge (R. Passmore Cup).

All winners who did not receive a special trophy were presented with a SLADAS plaque.

Mr M. Jones (Bury) receives his awards at the Derby Regent A.S. Open Show—the Eric Shaw trophy for best fish in show, the tank for the best small fish in show and two plaques. Mr E. Hazledine (left), the show secretary, presented the prizes

WHEN the EAST MIDLANDS SECTION of the FEDERATION OF GUPPY BREEDER'S SOCIETIES were hosts at the Spring Assembly, the meeting was held in the lovely surroundings of the Eyres Mossall Community Centre in Leicester. It proved to be a most enjoyable meeting though members had hoped for a bigger attendance. Class winners were:

Plant, Mr C. Chase (64). Scorfial, Mr A. Baker (77). Silver Pin, Original veiltail, Mr A. Baker (81). Silver Pin, Bottom sword, Mr P. Walker (84). Double sword, Mr M. Schoolbraid (81). Downtail, Mr T. Pile (91). Lyretail, Mr R. Cox (78). Long dorsal veiltail, Mr T. Pile (71). Short dorsal veiltail, Mr A. Baker (67). Delta tail, Mr T. Pile (71). Silver Pin, Superba females, Mr H. Eastbrook (71). Grey females, Mr P. Walker (72). Gold females, Mr L. Pike (68). Wedge-tail females, Mr H. Gregory (69). Broadtail males, Mr W. Prince (61). Breeders female, Mr J. Carter (61). Top sword, Mr P. Walker (64). Best breeders team, Mr W. Prince. Best fish in show, Mr A. Baker (scorfial). Best opposite sex, Mr H. Gregory (wedgetail). Intercession should see by East Midlands Section.

DERBY REGENT A.S. solved the problem of complaints that only the large fishes win the best in show awards by awarding trophies for the best largest fish and best smallest fish at their Open Show in May. Mr C. Hill (Notts.) won the former and Mr M. Jones of Bury the award for best smallest fish. Other awards were:

Guppies, Miss Lindley (Alfreton); plums, Mr Ward (Doncaster); mollies, Mr Selby (Notts.); swordtails, Mr Selby; Barbs, small, Mr Rizzard (Sheffield); large, Mr S. Hill (Alfreton); Characins, small, Mr Jones (Bury); large, Mr Eking (Alfreton); Killifish, Miss Lindley (Alfreton); Minnows and danos, Mr S. Hill (Alfreton); Cichlids, dwarf, Mr Whitley (Aireborough); large, Mr Hubert (D.R.A.S.); Breeders, livebearers, Mr Dickon (Sheffield); egglayers, Mr Wells (Doncaster); Angels, Mr Ford (D.R.A.S.); Fighters, Mr Cooper (Derby Show Group); a.o.v. anabantid, Mr Harlow (D.R.A.S.); Corydoras, Mr Wells (Doncaster); a.o.v. catfish, Mr Cooper; Loach, Mr Hunt (Ilminster); sharks, Mr Jones (Bury); Rabbots, Mr S. Hill; Flying duns, Mr Jordan (Leicester); Pairs, livebearer, Mr Whitley (Aireborough); egglayer, Mr



**MARINE ENTHUSIASTS** please note! **TOP TEN A.S.** are giving almost a year's notice that at their third Open Show on 21st March 1971 there will be a marine class for entry. Mr L. Kaye, secretary, explains that the Society did include a class for marines in 1969, but there were no entries so the class was dropped this year. A large trophy will be presented for the best marine fish and also a trophy for second place. An individual air supply will be provided for all marine entries so that each entry can receive continuous aeration.

Hough (N. Works.), Goldfish and comets, Mr C. Hill (Notts.); shubunkins, Mr C. Hill; a.o.v. coldwater, Mr A. Kaye (Top Ten); a.o.v. tropical, Mr Moss (D.R.A.S.); Juniors, livebearers, Miss Kaye (Top Ten); egglayers, Mr A. Kaye (Top Ten); Furnished aquaria, Mrs Kendrick (D.R.A.S.).

**DUKERIES A.S.** enjoyed a substantial increase of entries for their second Open Show, 332 fishes were exhibited by 28 societies and were judged by Mr F. Mackrill, Mr J. M. Skinner, Mr B. Winter and Mr P. S. Moorhouse. The best fish in the show was judged to be a blue fighter, owned by Mr D. Kennedy of Bradford. Other class winners were:

Swordtails, Miss S. Gerrard (Alfreton); guppies, Mr S. Buchanan (Rainworth); mollies, Mr J. Igoe (Rainworth); platys, Mr R. F. Senior (Sheffield); Barbs, small, Mr and Mrs Cohen (Castleford); large, Mr J. Sisson (Independent); Characins, small, Mr D. Wragg (Alfreton); large, Mr D. Sewell (Rainworth); Toothcarps, Mr B. R. Williams (Four Star); Danios, rainbow, minnows, Mr D. Jackson (Dukeries); Sharks and fishes, Mr A. Hare (Chapperton); Cichlids, large, Mr E. Makinson (Independent); small, Mr B. Eys (Worktop); Catfish, Mr D. Ellis (Independent); Loach, Mr D. Jackson (Dukeries); Fighters, Mr D. Kennedy (Castleford); a.v. anabantid, Mr Bradfield (Sheffield); A.S.S., Mr D. Bennett.

Pairs, livebearers, Mr J. Igoe; egglayers, Mr and Mrs Cohen, Brooders, livebearers, Mr R. Senior; egglayers, Mr and Mrs Buxton (Burnsley); Juniors, A. Sharpe (Castleford); a.v. coldwater, Mr E. Furness (Chapelton).

**LECTURERS at the STROUD & D.A.S. first Convention to be held at the Mid-Gloucestershire Technical College, Stroud, on Sunday, 27th September, will be Dr Cohen of Birmingham University, who will talk on the genetics of breeding fish, and Dr Belamy of Cardiff University, who is to give a talk on the behaviour patterns of fish with particular reference to his research on piranhas. A film show is also being held. Added attractions for children might well be the open air swimming pool next door to the College and the large park. Enquiries to Miss J. Smith, The Prince of Wales, Cashes Green, Stroud, Glos.**

## In Brief . . .

. . . **HINCKLEY & D. A.S.** members enjoyed a slide lecture on anabantids by Mr D. Bennett of M.A.A.S. Mr Shepherd won in the table show for novices and Mr C. Watkin in the furnished jar class.

. . . **MEMBERS of TONBRIDGE & D. A.S.** found the talk on tropical fish diseases given by Mr J. G. Osborne most interesting and enlightening, particularly the advice on remedies that he had found successful. Mrs I. Bellingham won in the table show classes for barbs and female guppies and Mr T. Hines in the class for male guppies.

. . . **THE BREEDING** and life cycle of cichlids was the subject of the slide show **YATE & D. A.S.** enjoyed in May. Members have won 54 prize cards in four open shows recently.

. . . **MR LANE of AMESBURY & D. A.S.** took joint first, second and fourth places in the May bottle show judged by Mr Lennox. Mr Rose was joint first and Mr Elliott third.

. . . **THE CONSTRUCTION,** design and siting of garden ponds was the subject of the talk given by Mr W. Ryder of Portsmouth to members of **SOUTHAMPTON A.S.** at their monthly meeting in St Deny's Church Hall, Southampton. Mr Ryder illustrated his talk with coloured diagrams and sketches and gave listeners many useful tips. The table show for twin-tailed goldfish was won by Mr V. Fish with a moor.

. . . **NORTHWICH & D. A.S.** have won the trophy for the first time in their annual inter-society quiz and table show competition with Chester. The club won both sections of the competition and Mr H. Bowman was the leading points-scorer with five first prizes and the best fish in the show award. Northwich now hold the trophy until the away return match at Chester in October.

. . . **MR CHURCHILL** of Cardiff gave a most interesting talk on home aquaria illustrated with a fine selection of colour slides to **BISHOPS CLEEVE A.S.** A flying fox entered by Mr T. Evans won the table show; Mr F. Scrivin won in the guppy class senior and Mr Tester in the guppy class junior.

. . . **THE** first leg of the Six Club meetings took place at **INDEPENDENT A.S.** venue, Holloway Institute, Eden Grove. Total points allocated by judge Mr Ted Jessopp were: Hendon 22; Riverside 19;

Independent 14; Hampstead 3 and Brent 2.

. . . **VARIOUS** fish now available to the would-be marine aquarist were illustrated on slides by Mr G. H. Jennings when he spoke to **WALTHAMSTOW & D. A.S.** on keeping marines. New members are very welcome to attend meetings and should contact secretary Mr A. Chandler, 68 Uplands Road, Woodford Bridge, Essex.

. . . **TOPICS** of interest to new members of the club made a very interesting discussion at the May meeting of **WEYMOUTH & D. A.S.** It is also proposed to arrange a slide show on fish breeding for the beginner shortly. Table show classes will be: August, a.v. labyrinths; October, *Corydoras*; November, H. and H.; December, a.o.v. cichlids.

. . . **COLOUR** Genetics in Goldfish was the title of the lecture given by Mr Ron Dodkins to members of **ILFORD & D.A. & P.S.** Afterwards he kindly acted as one of the judges of the table show. The a.v. single tail goldfish class was won by Mr H. Berger. Mr D. Seaman was awarded first in the a.v. swordtail class and Mr T. Bloomer first in the a.v. labyrinth class.

. . . **HOPES** that first interest in the Society has now become deep-rooted were fulfilled when 25 people attended the May meeting of **CARSHALTON & D. A.S.** held at their regular meeting place, The Sun, North Street, Carshalton, Surrey. Mr Ted Jessopp drew on his own experiences to give an amusing and helpful talk on general fishkeeping. Mr John Lucy won in the egglayer pairs class, Mrs Jean Hortley in the a.o.v. catfish, and Master John Dixon in the junior egglayer pairs. Would-be junior members, senior members or members of other societies who would like to attend a club meeting should contact the secretary at 8 Reading Road, Sutton, Surrey.

. . . **THE JIM IRVINE** trophy competition has just got under way again at **EALING & D. A.S.** (this is an any species competition with each nominated entry being shown four times throughout the year). There were 56 fishes benched in round one, with a speckled mollie taking first place. Table shows are now held at practically every meeting so that each class in the FBAS recommended schedule is covered twice during the year. A behind-the-scenes visit to the Aquarium at the London Zoo took place recently, the highlight of which was the hand-feeding of the monster record breaking carp.

... **HARROGATE & D.A.S.** have enjoyed talks on livebearers by Mr A. Rudd of Bradford, on keeping tanks clean and in good condition and on foods and feeding by Mr K. Bateman of Aireborough though some of the lady members found the thought of worm-chopping somewhat distasteful. Mr Mike Allen was auctioneer at the club's first auction, and the club magazine, editors Mr David Foster and Mr E. Gandy, is to take a big step forward with the adoption of a coloured cover.

... **MID-SUSSEX A.S.** members worked hard to make their float and stall for the local Dolphin Fair a great success. The Society also holds a monthly auction of fish and plants, which is very popular with members. The club supported the Portsmouth inter-club show when 15 societies showed fishes in eleven classes. Mid-Sussex took sixth place jointly with Portsmouth. At the Brighton inter-club show Mid-Sussex achieved 904 points (the winner, Portsmouth, was awarded a total of 923).

... **WHEN** Mr Armstrong of Basingstoke lectured on killifish to **NEW FOREST A.S.** he took along many specimens of the species referred to. His lecture covered some of the early history of killifish-keeping in Europe and America, and the breeding of, maintenance of and water conditions suitable for these fishes. Winners of the club's Champion trophies have been: Coldwater Points trophy, Mr L. Menhennett; N.F.A.S. Tropical Points trophy, Mr D. Harding; Champion coldwater, Mr L. Menhennett (all first four places); Champion tropical, Mr C. Knapp.

... A **NEW** and bold step was taken by the **MIDLAND ASSOCIATION OF AQUARIST SOCIETIES** when they held their first inter-society show at Drayton Manor (N. Warwick A.C. being the hosts), but it was an entirely successful venture. Twenty-two societies benched 336 fishes in 30 classes. A points system operated for the first six places and Bedworth A. & P.S. name goes on the shield for 1970.

... **ATTENDANCES** of 40 and 50 at meetings of the **GUEST, KEEN & NETTLEFOLD A.S.** still leave room for more, and visitors will be welcome to attend meetings held in the G.K.N. Works Restaurant.

... **VAUXHALL MOTORS A.S.** enjoyed a busy evening when Mr B. Hawkins was the guest speaker. After a very well illustrated and interesting talk on all aspects of

guppy breeding and showing, not only did the club hold its own table show for guppies and *Corydoras* (Mr T. Martin won in both classes) but a friendly match with Bletchley was also held. Another talk, by Mr Graham Cox, illustrated with some beautiful slides, made members very keen to start marine fishkeeping.

... **OLDHAM & D.A.S.** in announcing the date of their Open Show, Sunday, 20th September, point out that an added attraction of their venue, Werneth Park, is the fine natural history museum in the grounds.

... **THIS** year sees the twenty-first Annual Open Show of **BETHNAL GREEN A.S.** and preparations are under way for a special 'Birthday Show' to be held on Saturday, 5th September. More information will be made available as soon as possible. Club member Mr S. Cowell completed his success at the Tottenham A.S. open show (four firsts, a second, third and fourth) by winning the club's own table show 'Fish of the Month' competition.

... **AT** the first monthly meeting in May, club member Mr Phillip Gurr not only gave a very enlightening lecture on genetics to **GUILDFORD & D.A.S.** but went on to win first, third and fourth places in the over 2 tanks class in the table show. The second monthly evening was a 'lucky dip' when members were invited to pick up one of a number of pieces of folded paper and give a short talk on the subject written on it.

... **SEA-SIDE** club, **HASTINGS & ST LEONARDS A.S.**, found that they were still able to learn a great deal about native marines when Mr Ted Jessopp gave a lively and interesting talk on the subject. Keeping to the same theme members enjoyed two excellent films—'Between the Tides' on native marines and one of tropical marines filmed off the East African Coast. Annual award winners are: Mr A. McCormick, the Chissell Cup for most points in table shows; Mr Alan Reed, Member of the Year Cup; Mrs K. Greig, Home Aquaria Cup; Mr J. Greig, Singapore Bowl; Mr G. Chalcraft, A.O.V. Cup.

... **THERE** was a large attendance at the **BASINGSTOKE A.S.** meeting when Mr C. A. T. Brown spoke on killifish and the audience was not disappointed. The club congratulates the F.B.A.S. on the high quality of all their speakers whose services they have been fortunate enough to obtain this year. Club member Mr Les Jordan also spoke with

authority on the subject of cichlids as the possessor of many fine specimens of this species.

... **MR P. SEALEY** of **YEOVIL & D.A.S.** triumphed again when he won the Enticott Stainer Tropical Pairs Cup with a pair of blue gouramis in the Society's competition. Mr Sealey is a new member and Mr Hulbert, the chairman, stressed how pleasing it was to see new members at the Society among the trophy winners. The annual inter-club show with **TAUNTON A.S.** resulted in a draw, both societies gaining 55 points. The best fish in show was a tinfoil barb entered by Mr Larkcombe of Taunton.

... **BRADFORD & D.A.S.** have hit on the helpful plan of devoting the second meeting of every month primarily to the instruction of newcomers to the hobby when problems can be sorted out in an informal manner, and a talk by Mr R. Winterburn on plants was excellent for this purpose. At the first meeting in the month a talk by Mr O. Ricketts of Huddersfield on the health and biochemistry of fish and animals proved most instructive.

... A **LARGE** and attentive audience of **LEAMINGTON & D.A.S.** members and friends enjoyed the talk by Mr Phil Jinks on guppies. Mr Jinks has been specialising in the breeding of the cofer tail guppy for 15 years and he explained just what pairs must be mated to get the required stock. Club members have also enjoyed a lecture by Mr Jarvis on 'Water Content' and a day's outing to Twycross Zoo.

... **NOTTINGHAM & D.A.S.** won the second leg return match of their inter-society show with Hucknall & Bulwell by 42 points to 28.

... **ANNUAL** trophies were awarded to the following members of **ISLE OF WIGHT A.S.** at their annual dinner: Points Challenge, Mr S. F. Stevens; Guppy Cup, Mr E. Davison; best tropical, Mr W. Bradley; best coldwater, Mr K. Willis; novice coldwater, Mr R. Eastlea; home furnished aquarium, Mr S. Stevens; Plant Cup, Mr E. Davison; Ladies Cup, Mrs J. Foster. At a recent inter-club match with Hounslow A.S., host club Hounslow won by 92½ points to 90.

... **TORBAY A.S.** came second in the inter-club show held at the Crawford Hotel, Exeter, between seven West-of-England clubs. Taunton A.S. were first with 19 points, Torbay 12, Exeter 8, Plymouth 4, Totnes 2, Ilfracombe 2, Bideford 0.

## Dates for Your Diary

27th July. **GLOSSOP A.S.** Open Show. Glossop Centre, Talbot Street, Glossop, Derby. Schedules from Miss M. D. Smith, 3 Chapel Lane, Hatfield via Hyde, Cheshire.

29th July. **GOSPORT & D. A.S.** Open Show. Bridgeway Community Association, Brysons Lane, Bridgeway, Gosport. Details from Mr K. Cough, 19 Newport Road, Gosport.

29th July. **HIGH WYCOMBE A.S.** Open Show. West Wycombe Hall, West Wycombe, Bucks. Schedules from Mr B. Cook, 282 Oak Tree Road, Marlow, Bucks.

30th July. **LYTHAM A.S.** Open Show. Lowther Pavilion, Lowther Gardens, Lytham, Lancs.

11th July. **BASINGSTOKE & D. A.S.** Open Show. Details from Mr A. Blake, 20 Bounty Road, Basingstoke, Hants.

11th-12th July. **ROMFORD & BEACONTRIE A.S.** (Dagenham Town Show). Details from Mr J. M. R. Frye, 3 Ashvale Drive, Cranham, Upminster, Essex (phone Upminster 28435).

12th July. **GRANTHAM & D. A.S.** first Open Show. Guildhall, St Peter's Hill, Grantham. Schedules available mid-February from Mr S. Paver, 55 Alexander Avenue, Newark, Notts.

12th July. **TADCASTER & D. A.S.** Open Show. Collingham Memorial Hall, Collingham, Wetherby, Yorks. Booking 1.00-2.2 p.m. Only 2 mile from A1. Large car park, no stairs. Schedules from Mr J. W. Holmes, Newagent, Collingham, Wetherby, Yorks.

18th July. **NORTH KENT A.S.** Open Show. Details from Mr John Parker, 6 Moore Road, Swancombe, Kent.

17th July. **BARNESLEY F.S.** Open Show. Mappleton & Staircase Village Hall (formerly the Town Hall), Dutton Lane, Mappleton, Nr Barnesley. Details from Mr J. Howard, 67 Woolley Colliery, Darnon, Barnesley, Yorks.

25th July. **STOCKTON A.S. & CLEVELAND A.S.** Open Show (joint venture incorporated into the Teesside Agricultural and Horticultural Show), Stewart Park, Teesside. Schedules from Mr K. Low, 2 Farmbank Road, Ormsley, Middlesbrough, Teesside, TS7 6EG or Mr K. Clennett, 46 Thames Avenue, Thornaby, Teesside.

29th July. **PLYMOUTH A.S.** Open Show. Sherwell Hall, Sherwell, Plymouth. Details from Mr R. Guesell, 43 Biggin Hill, Emarslett, Plymouth, Devon.

31st August. **STROUD & D. A.S.** third Open Show. Mid-Gloucestershire Technical College, Stroud Road, Stroud (change of venue). Schedules from Mr P. L. K. Treadgold, 15 Kings Road, Rodborough, Near Stroud, Glos.

2nd August. **BLACKPOOL & FYLDE A.S.** Open Show. Arnold Boys School, Lytham Road, Blackpool. Programmes obtainable mid-June from Mr G. Howard, 55 Stamford Avenue, Blackpool (phone 49575).

5th-15th August. **PORTSMOUTH A.S.** Open Show. Schedules from Mr V. Hoar, 120 London Road, Widley, Nr Portsmouth, Hants.

12th-15th August. **THE MIDLAND OPEN SHOW.** Ringley Hall, Broad St., Birmingham. Wednesday 2.30-10 p.m., Th. and Fr., 12-20 p.m., Sat., 10 a.m.-3 p.m. Schedules from Mr J. Fellows, 18 Woodworth Avenue, Headless Cross, Redditch, Wores.

15th August. **HARLOW A.S.** Open Show. Moot Hall, The Stow, Harlow. Schedules from Mr P. Mandock, 21 Brooklands Field, Harlow and Mr R. Kerridge, 75 Glebe Lane, Harlow.

15th August. **LEIGH A.S.** Open Show. Venue to be announced.

16th August. **NORTH STAFFS A.S.** second Open Show. Main Community Centre, Unwiner Road, Meir, Stoke-on-Trent. Details from Mr K. Balch, 78 Courtway Drive, Stoke-on-Trent, ST1 6DU.

16th August. **REDWORTH A. & P.S.** Open Show. Nicholas Chamberlaine Camp School, Bellingham Road, Redworth. Schedules from Mr K. Edkins, 74 Slater Street, Arleborough, Nanteston.

22nd August. **YEovil & D. A.S.** Open Show. Grass Royal Secondary School, Yeovil. Details from Mr D. M. Phipps, 3 Hill Terrace, Bower Hinton, Marlton, Somerset.

28th September. **YATE & D. A.S.** Open Show. Christchurch Hall, North Street, Downend, Bristol.

28th September. **BETHNAL GREEN A.S.** Birthday Show. Schedules later.

28th-6th September. **MID-HERTS A.S.** Open Show (Hertfordshire Horticultural Society Show). Francis Bacon School, Deskes Drive, St Albans.

6th September. **WEYMOUTH & D. A.S.** Open Show. Details from Mr Hutton, 53 Rowenlow Street, Weymouth.

6th September. **CLEVELAND A.S.** third Open Show. British Legion Hall, West Gate

*MAIN source of income for the ISLE OF WIGHT A.S. is from an exhibition of tropical and coldwater fish at Packpool Park near Ryde. This year an experiment with a display of British marine fishes is being tried. Aquarists on holiday may find a visit to the Park very well worth while.*

Guiborough, Yorks. Schedules from Mrs Avery, 7 Dorset Road, Guiborough, Yorks.

12th September. **HOUNSLOW & D. A.S.** Open Show. Hounslow Youth Centre, Cecil Road, Hounslow, Middlesex. Schedules from Mr D. J. Woodward, 34 Unbridge Road, Hanworth, Middlesex.

12th September. **WARRINGTON A.S.** Open Show. St Benedict Y.C. Bell Hall, Oxford Lane, Warrington, F.N.A.S. judges. Schedules from Mr J. Higham, 42 Hood Lane, Sanday, Warrington (phone 35639).

20th September. **FOUR STAR A.S.** Open Show.

20th September. **STONE A.S.** Open Show. Wilton Community Centre, Stone, Staffs. Schedules from Mr N. Flinn, 28a High Street, Stone, Staffs.

20th September. **OLDHAM & D. A.S.** Open Show. Music Room, Werneth Park, Oldham, Lancs. Booking 12.30-2.15. (This is also an A.M.D.A.S. show.) Schedules from Mr J. C. Williams, 3 Queen Street Show, Lancs.

26th September. **RIVERSIDE A.S.** Open Show. St Etheldredas Church, Fulham Place Road, Fulham, London, S.W.6. All enquiries to Mr M. Goss; phone 01-720 0140.

26th September. **BRACKNELL A.S.** Open Show. Prestwood Community Centre.

27th September. **TORREY A.S.** Open Show. Torrey Town Hall. Schedules from Mr L. Doshbady, 56A Newton Road, Torrey.

27th September. **STROUD & D. A.S.** Convention. Mid-Gloucestershire Technical College, Stroud. Lectures by Dr Cohen and Dr Bellamy. Film Show. Enquiries to Miss J. Smith, The Prince of Wales, Cashes Green, Stroud, Glos.

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

4th October. **EALING & D. A.S.** Open Show. Northfields Community Centre, Northover Road, London, W.13. Doors open approx. 1.30 p.m. Refreshments. Enquiries to Mr T. B. Cooper, 7 Nemours Road, London, W.3.

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

17th October. **BRENT A.S.** Open Show. Sydney Memorial Hall, High Road, Willesden, London, N.W.2. Details from Mr A. J. Raymond, 30 Inman Road, London, N.W.10.

26th November. **AIREBOROUGH & D. A.S.** Open Show. Greenacre Hall, Rawdon. (Details and schedules later.)

6th December. **HORSFORTH A.S.** Open Show. (Details later.)

21st March 1971. **TOP TEN A.S.** Open Show. Huddersfield Town Hall.

29th April 1971. **BURY & D. A.S.** Open Show. Church House, The Wyke, Bury.

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Continued on page 135

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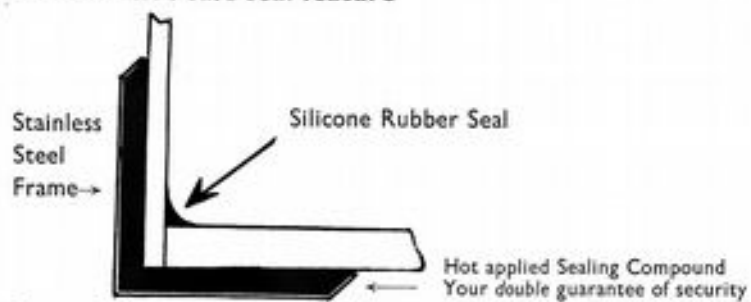
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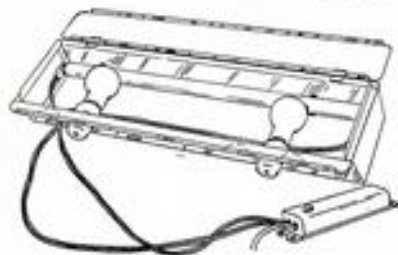


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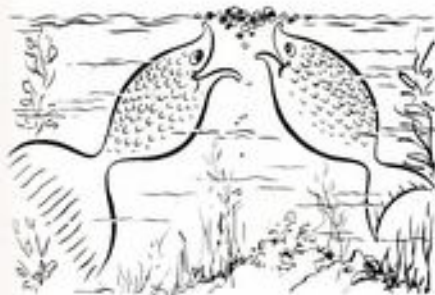
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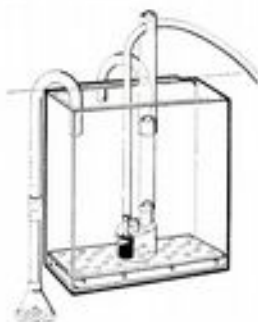
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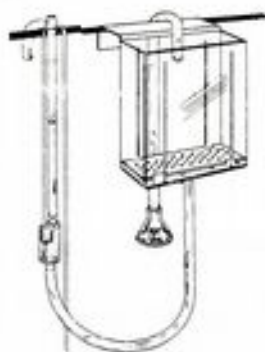
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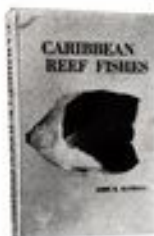
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