

JUNE 1975

25p

Pet **Fish**

# PRACTICAL FISHKEEPING MONTHLY



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Success with the Firetail  
Mexican Livebearer  
The Singletail Group

Making All-Glass Aquaria  
Sea Anemones in the Aquarium  
Breeding the Malawi Cichlid  
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### In This Issue

	Page
Comments and Quotes	53
Letters	54
Presentation of 1975 'Oscar'	62
Spawning the Malawi Cichlid <i>P. auratus</i>	63
Sea Anemones in the Aquarium	65
Meetings and Changes of Officers	66
The Singletail Group	67
Specialist Koi-Breeder Visits the U.K.	68
Success with the Firetails	70
Readers' Queries Answered	71
Personal Comment	72
Have You Made Your Own All-Glass Aquarium Yet?	75
An Undemanding Beauty from West Africa	78
Coldwater Scene	81
A 'Re-discovered' Mex- ican Livebearer	84
Club News	86
In Brief	90
Dates for Your Diary	91

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## Comments and Quotes

- *Fish breeding in Thailand*
- *Why marine fishes are costly*
- *Nitrogen 'fixing' on coral reefs*

### Breeding Aquarium Sharks

IT is pleasing to report an instance of improvement in the arrangements for supply of a tropical fish species that should be encouraging for those worried about conservation aspects. For some years now many of us have watched the ever-diminishing size of specimens of red-tailed black sharks that were arriving in the shops and felt alarm at the stories of the disappearance of large specimens from the catching areas. Now we have been told by an importer recently in Thailand that he was delighted to see that these fish are now being spawned there in aquaria and raised in artificial ponds to supply the hobby market.

Unfortunately it appears that the details of the breeding arrangements are guarded secrets at the present time, but it is believed that hormone preparations are being used to induce spawning in the fish.

It was also interesting news that although ruby sharks (*Labeo frenatus*) are now similarly being bred in Thailand the young produced do not have the full red finnage that makes the wild-caught specimens so attractive. In view of the recent far-east events that have held, and will doubtless continue to hold, the world's attention it is topical to mention that this species was being caught in rivers at the Laos and Cambodia borders and carried very long distances to the farms from

which they are exported. Now that these attractive fish are being bred by the exporters they are likely to be more readily available and perhaps cheaper.

### Marine Imports

IN a talk to the Cleveland Salt-water Enthusiasts' Association (USA), as reported in the Association's magazine 'Octopus', Mr Ed Gelarden, Cleveland fish wholesaler, described some of the problems of importing and some of the unseen factors that enter into the cost of a marine animal. In addition to bagging supplies and shipping costs, a major factor is the extremely high mortality of marine fishes during their perilous journey from reef to home tank. To use Philippine fishes as an example, Mr Gelarden estimates that there is a 40% loss from the time they are collected until they reach their first stop in Manila. Another 20% mortality occurs between Manila and Cleveland; add on the importer's and pet shops' losses and it is easy to understand why the cost of the few surviving fishes is high. Collecting with drugs, Mr Gelarden feels, contributes heavily to the fish deaths and he doesn't see any change in the trend until collecting with poisons is outlawed. Since it is the hobbyist who is paying for these collecting and shipping losses, he should become actively concerned about the drug/poison problem.



## Nitrogen on Coral Reefs

THE content of organic nitrogen-containing compounds in aquarium water as an indicator of a tank's hygiene is an index ('nitrite reading') that aquarists have become familiar with, and it is of foremost importance for the seawater aquarist. Strangely enough, whereas excess of nitrogen compounds creates a problem in marine tanks in which coral reef communities are being maintained, a danger exists for natural coral

reefs when there are deficiencies of nitrogenous materials. In the journal *SCIENCE* recently, American biologists have reported their observations made on Erewetok Atoll, where as well as the colourful reefs rich in all forms of life there also exists areas of rather drab 'reef flats'. Up to now these areas have seemed to hold little of interest for naturalists, but Dr W. J. Wiebe, Dr R. E. Johannes and Dr K. L. Webb have found them to be regions dominated by the 'blue-green' algal organism *Calothrix crustacea*, which has the ability to turn ('fix') nitrogen present in the

air into ammonia, nitrites and nitrates dissolved in the water, essential materials for the marine plant life that forms the basis for the success of a coral reef. The biologists showed that water leaving these apparently uninteresting areas was enriched with the 'fixed' nitrogen and supplying the other reefs. The report gives a warning that when consideration is being given to conservation of coral reefs, the importance of the nitrogen-providing areas, unattractive as they might seem to the casual observer, to the whole reef should not be overlooked.



Your comments and views on all topics of interest to aquarists are welcomed. Address letters to PFM Letters, 554 Garratt Lane, London SW17 0NY

### Early Breeding Success

I FEEL compelled to write to you, not to boast of any achievement, but to encourage other fishkeepers to try something which may, on the surface, appear to have a very remote chance of success, or may require a very experienced hand.

As a fishkeeper of only 6 months' experience I acquired three mature harlequins (*Rasbora hengeli*) and as a successful 'breeder' of guppies, zebras, platys and minnows, decided to breed this little fish.

I obtained back numbers of your magazine in an effort to find out how to do this, but, baffled by such terms as pH, decided to do it my own way, using, however, the plants recommended in the two articles I read.

I noticed the female rubbing the underneath side of her belly against the plants, 'prepared' my breeding tank and 24 hours later witnessed the spawning. Forty-four fry survived and are now 6 months old. Until I told my friends in the fish world what had happened I had no idea it was an unfulfilled ambition of so many fishkeepers, so you, too, might have beginner's luck!

(MRS.) ORELLA BARLOW  
Blackpool & Fylde AS

### Red-tailed Silver Sharks

IT was with great interest that I saw the photograph in 'Is it New to You?' in the April issue of PFM. I believe the fish named as *Leptobarbus hoeveni* to be the fish that some aquarists in the north-east have recently obtained through dealers and that we have been under the impression that perhaps these specimens were *Barbus paludinosus*, from the only reference books available. With all due respects to the photographer, the photograph does carry quite a lot of highlight but the description does indeed fit the fish I have perfectly. My specimen is now 9 in. and a friend who obtained a smaller specimen from me now boasts a 10 in. fish.

I have recently seen a 13 in. specimen at a north-eastern show and its owner estimated its growth would attain 17 in.; right or wrong he had a fish on show that would send all big-fish men rushing around to the local dealers if they had seen it. The text books in my possession do not list this fish, nor does the FBAS size sheets in my file, and I would be very grateful for any further information that could be

Continued on page 61

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# LETTERS

continued from page 54

published concerning *Leptobarbus hoeveni*. Personally I find my fish very shy, even at feeding time; it rarely eats in my presence and yet grows steadily. However, my friend's specimen is quite a hungry monster, grabbing anything that is dropped into the aquarium, such as shrimp, beasts' heart, cheese, peas and oatmeal.

When purchased as 2 in. tidlers they had a rather rasbora-ish appearance, even twitching the caudal fins in the same manner as scissortails. The blue line was then very outstanding on the sides, and had a goldish flush above; but this line faded as the fish grew, leaving a strongly marked lateral line.

B. H. RISBRIDGER,  
Show Secretary, South Shields AS

More information has come our way about *Leptobarbus hoeveni* (which is given a short mention in FRESHWATER FISHES OF SIAM OR THAILAND), as noted on page 20 of last month's PFM. An importer of the fish confirms Mr Risbridger's opinion of the species as a very attractive aquarium fish, even when fully grown, and more will be coming here from Thailand at lower prices than they have been, in due course. There are many additional difficulties involved in photographing fishes in shop display tanks, where 'Is It New to You?' specimens are often pictured, and the results are therefore not always quite the 'studio' product that might otherwise be gained.—EDITOR.

## Koi-keepers' Tour

WE are delighted to report the complete success of the recent tour of Thailand and Japan organised by The British Koi-Keepers' Society.

Thirty-one members and friends enjoyed a 3 days' visit to Bangkok before arriving in Tokyo, where they were met and warmly received by members of the Tokyo branch of The All-Japan Koi-

Keepers' Society. Throughout their tour of Japan the BKKS party were welcomed and entertained in a most heart-warming manner. Private ponds and collections of koi were shown and all questions patiently answered with the utmost goodwill.

Dr Takeo Kuroki, the president of the All-Japan Koi-Keepers' Society (Zen Nippon Airin-Kai) travelled to Kyoto for the reception given there. Many gifts of koi were presented as tokens of friendship throughout Japan and their safe package and air-freight to Britain was arranged and paid for by Japanese members.

The British Koi-Keepers' Society is deeply grateful for the overwhelming generosity and hospitality shown by the members of the All-Japan Koi-Keepers' Society. Friendship and understanding between the two Societies has been firmly established.

(MRS.) H. M. ALLEN,  
Public Relations Officer,  
The British Koi-Keepers' Society

## A Non-Showing Society

WE have heard in recent months of clubs being set up for the hobbyist and not for the showing of fish and I wondered if any readers would be interested in hearing of our club and the way it is run.

As secretary of the Romsey Association of Fish Hobbyists I am pleased to say that since our formation in January our membership has risen to nearly 30. We believe that whilst there is a place within the hobby for competitive showing there are a large number of people who simply wish to learn more about their hobby. Our programme includes speakers, films etc., but is mainly based on the participation of our members who by their own experiences can help others, less experienced than themselves.

One of the major items in our programme this year will be an exhibition — not show — when we hope to be able to show the people of Romsey the enjoyment to be gained from keeping tropical and coldwater fish in the home. With this in mind we shall be pleased to hear from manufacturers, distributors etc. who can offer us assistance. Our funds are provided by the usual annual subscription but are supplemented by auctions and raffles. Prizes for the raffle are normally donated



by our members. The auction is for unwanted fish, plants and accessories, with the proceeds to our funds.

We have been told that we shall not be able to survive without involving ourselves in showing but I should hate to have to suggest this to our meeting because the birth of the R.A.F.H. has proved enjoyable and rewarding. We are all now looking forward to seeing our 'baby' grow.

It would appear there is ample room

for many more organisations like ours and I shall be pleased to hear from other secretaries. It may even be that one day there will be a national organisation of societies formed with the sole intention of getting the maximum enjoyment from the hobby whilst excluding the competitive element.

(MRS.) M. AVERY,  
Secretary, Romsey Association  
of Fish Hobbyists



## Presentation of the 1975 'Oscar' by Akvariet

Mr. Edvin Brorsson (left) presents the 'Oscar' trophy to Dr Sverre Sjölander of the University of Stockholm

**T**HIS is the ninth year that the award of an 'Oscar' has been made by Tidskriften AKVARIET, the world's oldest aquarium magazine published without interruption for over 50 years, to a worthy aquarist. On a Sunday morning in April, the audience at the annual convention waited to hear who this year's winner would be. When the editor of Sweden's Tidskriften AKVARIET, Mr Gunnar Lundin, asked the founder of the magazine, Mr Edvin Brorsson, to present the trophy to Dr Sverre Sjölander of the University of Stockholm his announcement was met by warm applause. There was no doubt that Dr Sjölander was a popular winner, for he is well known for his highly appreciated talks at many aquarist society meetings all over the country. His main interest is the behaviour of fishes and he has made expeditions to Africa and Canada. His lecture at 'AKVARIET's Day' dealt with the way the fishes communicate with each other and again the audience was fascinated by his talent to share his great knowledge with the listeners in a way that makes it pos-

sible even for non-scientists to understand. Other lecturers at the convention, attended by aquarists from seven countries, were Mr Arend van den Nieuwenhuizen from Holland and Mr Gerhard Brünner from Hamburg, both previous 'Oscar' winners. Foreign guests also welcomed by Mr Lundin included Mrs Elisabeth Müller, Western Germany, Mr van Lier, Holland, Mr Lepomme and Mr Bijnens, Belgium, and Mr Thieffaine, France.

## Planarian Pests

**ALTHOUGH** harmless enough in appearance, the flatworms known as planarians and common in natural waters can be killers to fish eggs and fry. This has been shown in photographs in THE PROGRESSIVE FISH-CULTURIST recently. Planarians were seen to attach the tube-like pharynx to fish eggs and feed on the eggs' contents. Death occurred in 90% of eggs exposed to planarian attack in artificial conditions.



## Spawning the Malawi Cichlid *P. auratus*

By

BARBARA P. MAYERS



Female *Pseudotropheus auratus* during incubation of eggs; the throat outline denotes their presence

Photo:

D. Terryer

**M**y introduction to this amazingly alert lively Malawi cichlid was an unexpected gift of a female, complete with spawning in her mouth, with the sole guidance as to her needs "she likes hard water". Both female and fry survived my then inadequate knowledge of their requirements.

The *auratus* are singularly impressive with their distinct colours — mature males deep brown to near black, electric blue and gold, the females deep brown, gold and yellow. Young fish all have the same coloration as the females. Fry, at the moment of birth, are perfect miniature *auratus* — not the nebulous grey or murky colour frequently found in other species. My adult fish are around 4 inches in length.

I have always kept my Malawi cichlids in untreated mature Sussex mains water, which has a pH of 7.5 and a DH of 7. The temperature is an even 80°F (27°C). Several articles on the ideal water condi-

tions for the African cichlids have been published, but as I have successfully spawned and reared fry in tap water, I have left well alone.

Well-conditioned fish will spawn happily in a large Malawian community tank. The female should then be removed to a small tank to hatch out her brood. From my personal experience it is unwise to put a spawning pair in a tank on their own unless a constant watch is kept over them. The males can become aggressive and you may well find you have a female minus a tail on your hands.

I was beginning to know and understand my African fishes but felt that until I had actually seen a spawning there was still a gap in my overall picture. With this in mind I set up a tank 30in by 15in by 15in; it had a Windmill under-gravel filter and just three 4-inch clay plant pots placed horizontally in such a way that I could see inside them — hopefully they would spawn inside one. A Hykro plastic tank



separator, into which a friend had ingeniously glued a 2-inch strip of glass vertically, was installed — with this division the water circulated freely, maintaining an even temperature, and the glass permitted the pair to see each other. It was amusing to see them sizing each other up through the glass.

I continued feeding them on their usual fare, which is shelled peas (cooked for 5 minutes in unsalted water), spinach, minced ox heart, daphnia, tubifex, white worms, scampi (they also enjoy chopped earthworms, but as I am a bit squeamish this is not part of their regular diet).

After 5 days I removed the partition; the instant change in the male was astounding — coloration was accentuated, fins were spread to their utmost, as quivering rigidly he displayed. An imposing sight, but the female was singularly unimpressed and retreated behind a pot on her side of the tank. He pursued her relentlessly and she spent most of the time head uppermost near the surface of the tank almost motionless. Even in this position the male persistently nudged her. She was looking pretty exhausted, and fearing for her safety I replaced the separator for a further 5 days. During this time the male was busily excavating gravel to such an extent one or two of the pots became dislodged. The second time I removed the partition the ritual was repeated and this time the female was ripe for his attentions.

Watching the spawning for me was seeing Nature at its zenith: perfect co-ordination, not one extraneous movement. The pair were a flashing whirlwind of colour, circling round and round, breaking apart and then increasingly tighter circles until they were almost one — head to tail. Breaking apart, the male nudging the female's vent, she releasing yellow-orange eggs a few at a time inside the pot, whirling round she picking them up in her mouth, now the female mouthing the vicinity of the male's vent — quivering intense male, flowing female. As the milt is colourless, the time at which the actual fertilisation takes place remains hypothetical, but it is generally believed that the eggs are fertilised within the mouth of the female.

Two hours after completion of the spawning I removed the male and the following day I put the female in a small tank with only soft daylight. I put in a

thin layer of gravel, as Malawis are not happy in bare tanks, a gently streaming diffuser stone and one clay pot. In this environment she will settle down comfortably for the incubation period of 24 days.

During this period the buccal cavity becomes distended and through the skin one can see a dark shadow which becomes increasingly darker as the days pass. She should not be fed. She is in a state of near hibernation and for this reason a strongly lit tank should be avoided, as this will cause her to move around unnecessarily with the effect that she will be that much weaker by the time the fry are released. I believe this is one of the contributing factors why so many females succumb after hatching their brood.

After 21 days the female becomes restless and starts moving around, wiggling her body and head. This is a sure sign the fry are about to be released. The fry emerge over a period of 5 to 6 hours; a few are seen swimming about; then, at a given signal from their mother, they are back in her mouth again. Finally, they are all out and this is the time to move them, as unfortunately the mother has a tendency to swallow her young.

I take two cups minus handles (my family take it upon themselves to make sure I never run out!), fill them with water from the hatching tank, and then with a small net I remove the fry into the cups — as they are about  $\frac{1}{4}$  inch in length this presents no problem. In this particular spawning there were forty-five fry. I then place the two cups in a small bare prepared tank and let the fry swim out in their own time; I use bare tanks for the fry as there is always a certain amount of uneaten food and this can be easily siphoned off the bottom. They will immediately take freshly hatched brine shrimp, micro worms and finely sifted daphnia.

The mother should not be moved at this stage, as she is weak from fasting, her colour has diminished and she is looking generally exhausted. I am always touched to see her indulge in the luxury of opening her mouth really wide (remember it has been partially closed for 24 days). Again and again she will repeat this "yawning" motion before she starts feeding. She now needs rest and good food for a couple of weeks before she is returned to the community tank.



## MARINIST'S NOTEBOOK

# Sea Anemones in the Aquarium

By ROY PINKS

**N**EWCOMERS to the keeping of marine invertebrates are often perplexed by the behaviour of their anemones. The native species are less of a problem than those from warm water, both in terms of feeding and of accommodating them in such a manner that they are obviously in good heart, and in some ways it is worth trying out the headlets or the snakelocks in preparation for the more demanding culture of the tropical species. There are dangers even in this technique, however, as one can be lulled into a false sense of optimism because the anemones which we collect around our shores are so undemanding and tolerant, to the extent that they will even multiply under the poorest of tank conditions.

The tropical species take a lot more understanding, and despite what has gone into print about them since the marine boom began a few years ago, I am far from

convinced that they have really come to stay in the home aquarium. It is quite true that the early stories about their fragility were exaggerated: it was said that they were difficult to introduce to tank conditions and that they rapidly succumbed and decomposed. I think this reputation stemmed from the tendency of exporters to ship them in the wrong conditions — they are now transported 'dry' in most cases — and in fact most of them are as tolerant as our own species as regards uprooting and resettlement as such.

What seems to be perplexing is the long-term settlement of an anemone. Its like or dislike for a particular location cannot be predetermined and it is therefore pointless to buy an anemone because it would look good here or there in your tank. The chances are that it will locate itself in just about any place but the one which you

This is the hardy sea urchin anemone, common in rocky parts of Britain's coastline and a very hardy species that does well in aquarium conditions. It can be kept at 'tropical' marine temperatures.

Photo: C. Harrison





would have chosen, so unless you have unlimited cash, which will enable you to pepper your tank with specimens in the hope that one will take up the appointed spot, you will have to come to terms with the creature, and it is quite unreasonable to expect it to comply with what you want, other than fortuitously.

To some extent the nature and depth of the covering of the tank floor will determine the movement or otherwise of a specimen. Sometimes an anemone will remain more or less where you put it, and at others it will do a sort of Flying Dutchman routine. In the latter case it may be assumed that something is wrong, and some examination of the chemical nature of the water should be undertaken. I have not found that nitrites in the water are particularly worrying, but other conditions are, specially residual traces of copper. The peripatetic nature of the odd anemone will make its feeding something of a problem if it tucks itself away behind a piece of coral or rock, and you should therefore make allowance for this characteristic when designing the covering for your invertebrate tank. The cover should be made in such a way that it is easily removable, in whole or part, in such a way that you can insert a feeding stick or tube at any part of the tank to which the anemone might have retreated.

It is quite remarkable just how far down into the sand an anemone actually pene-

trates, and parts of the foot often clamp round the openings of sub-gravel filter plates, which makes the removal of the specimen quite out of the question until it has decided that it has been in that spot for long enough! Some aquarists have had trouble in that anemones have blocked up the airlift tubing, and the consequences of this could be serious if more than one decided to carry out this manoeuvre. The worst danger is that of the anemone settling on a heater tube, because this results in a burn which as often as not proves fatal. I am in the habit of using combined heater/thermostats in my tanks, and these are positioned vertically. I made a collar for the one in my invertebrate tank from a perforated plastic tank divider, and this worked very well for a long time. The day did come, however, when a wandering anemone insinuated itself at the point at which this collar met the undergravel filter plate, and it worked its foot up the collar until it came into contact with the bottom (heated) part of the heater tube, and thus precipitated its much regretted departure.

It is not easy to overcome this sort of problem with internal heating, but Cliff Harrison's notes on external heating cables (PFM, September 1974: "Aquarium Heating by Electricity") will be read with great interest by marinists who are in a position to adopt this highly interesting technique.

## Meetings and Changes of Officers

**EAST ANGLIAN FEDERATION OF AQUARISTS.** Chairman, Mr C. Williamson; treasurer, Mr Austin; show secretary, Mr D. Lacey; secretary, Mrs B. Williamson; P.R.O./assistant secretary, Mr A. Cook (36 Norwich Road, Ipswich, Suffolk).

**FANCY GUPPY ASSOCIATION.** Chairman, Mr G. Goodall (3 Turner Avenue, Tottenham, London, N15 5DG); secretary, Mr S. Croft (85 Planks Lane, Wombourne, Staffs); treasurer, Mr T. Manning; show secretary, Mr D. Beecham; P.R.O., Mr G. Beecham; stock control officer, Mr R. Francis; overseas secretary, Mr B. Blades (30 Meadoway, Church, Accrington, BB5 4AT).

**GREAT YARMOUTH & DAS.** Chairman, Mr A. Kirby; vice-chairman, Mr H. Brundish; secretary, Mr E. Weekley; treasurer, Mr D. Lacey (83 University Crescent, Gorleston, Great Yarmouth, Norfolk, NR31 7QH); P.R.O., Mr P. Watson; show/judges secretary, Mrs J. Rumsby. Meetings: 1st Monday of month, Imperial Hotel, North Drive. New members and guests welcome.

**HORSFORTH AS.** Chairman, Mr J. Wood; vice-chairman, Mr J. Dunn; treasurer, Mr M. Barker; joint secretaries, Mrs B. Helm & Miss J. Helm (29 Wellington Road, New Worsley, Leeds 12; phone 451025); show secretary, Mr C. Corns; social secretary, Mrs P. Wood; catering, Mrs J. Corns.

**KIDDERMINSTER & DAS.** New Secretary, Mr R. James (4 Sunnyside Gardens, Wolverley Road, Franche, Kidderminster, Worcs.).

**KILLINGWORTH AS.** President, Mr D. B. Hickman; chairman, Mr D. Renton; secretary, Mrs M. E. Hickman (Tamerisk, 14 Crumstone Court, Longmeadows, Garth 21), Killingworth, Newcastle 12; treasurer, Mr J. Askell; show secretary, Mr G. Fenwick; P.R.O., Mr J. Askell.

**KINGSLERE & DAS.** New Society. Meetings: 2nd Tuesday of month, the Crown public house. New members welcome. Details: Mr A. Stopp (24 Longcroft Road, Thatcham, Newbury, Berks.).

**LEWISHAM & DAS.** Chairman, Mr J. Walker; secretary, Mr A. Higgins (134 Mayeswood Road, Grove Park, London, SE12 9SB); show secretary, Mr C. Osbourne; treasurer, Mr E. Southon. Meetings: 2nd & 4th Mondays, 8.00 p.m., St Lawrence's Church, Bromley Road, Catford, London, S.E.6.

**MID-CORNWALL AS.** Secretary, Mr B. G. Lean (5 Hillcrest, Shortlandside, Truro, Truro 4092). Meetings: 1st Wednesday of the month.

**SCUNTHORPE & DAS.** Meetings: 2nd & 4th Monday of month, 7.30 p.m., St Paul's Church Hall, Ashby High Street, Scunthorpe. New members welcome.

**SOUTHAMPTON AS.** Chairman, Mr D. Jones; vice-chairman, Mr G. Hallam; secretary, Mr D. Mills (30 Farnham Way, Bittern Park, Southampton); treasurer, Mr D. Laver; show secretary, Mr A. Weaire. Meetings: 1st Monday of the month. New members welcome.

**UXBRIDGE AS.** Chairman, Mr E. Funnell; show secretary, Mr R. Newman (129 Wood End Green Road, Hayes, Middlesex); treasurer, Mr N. V. Lee. Meetings: fortnightly Wednesday evenings, 8.00 p.m., Brookside Pavilion, Brookside Road, Hayes, Middlesex. New members welcome.



## GOLDFISH TYPES

# The Singletail Group

By FRANK ORME

**F**IRST variety to deviate from the wild ancestor, and the progenitor of the many diverse forms of fancy goldfish, the common goldfish has been, and still is, the delight of countless children. It has also served to introduce many to the wider interests of the fishkeeping hobby, being well able to withstand the maltreatment of confined quarters, poor food given in either too little or too great a quantity, dirty water and the consequent many changes of water and temperature that the inexperienced owner is apt to subject it to.

Equally at home in either indoor aquaria or the more rigorous conditions of a pool, this fish remains popular with a good many fishkeepers. According to current Standards it will be seen that a well-proportioned sturdily built fish is called for in which the dorsal and ventral outlines have no trace of 'snoutiness', and the back rises in a smooth curve to the highest point, which is above the pelvic fins. From the high point the back descends in a gentle curve into the caudal peduncle. Fins are sturdy and rounded; in particular, the tail or caudal fin is short with only moderate forking. The dorsal fin commences on the high point of the back, over the pelvic fins, and must not be over large. In other words the fish has the perfect shape of the crucian carp.

The common goldfish is a metallic scaled fish that ideally should be a self-coloured gold, the most sought-after being a dark-red/orange. However, the variety can also be found in silver or yellow together with combinations of red and silver or yellow and silver, which, although attractive are not popular with those who like to exhibit their fish on the show bench.

There is a nacreous, or calico, form of the common goldfish known as the London shubunkin. In this variety the reflective quality of the scales, which gives rise to

the term 'metallic', is lacking so that it is possible to see the pigmentation of the fish. Somewhere I recall reading that a calico variety of goldfish resembled an artist's palette upon which splashes of blue, black, red, yellow, brown and violet had been daubed, black spots having been speckled over all. It is unlikely that many fish will carry all of these colours; nevertheless, a good combination of mottled colours with black speckles should be present. Blue is the preferred ground colour—but not the slatey blue which is quite common. In all other respects the London shubunkin resembles the common goldfish, and it will be found to be just as hardy and adaptable.

Although kept and bred by some enthusiasts they are not as popular, with the majority of goldfish fanciers, as are the more highly developed fancy types, which is a pity for although they ask little of their keeper they will amply repay good attention. Owing to the easiness of their maintenance they are possibly the best varieties to teach the novice the art of fish management and breeding.

Large numbers of these fish are bred each year, in such places as Italy and Hong Kong, and imported into this country by the thousands. Most that are offered for sale are very young—less than 12 months old, and it is a tribute to their hardiness that so many survive the rough handling and overcrowding, to which they are subjected between the fish farms and the retailers, to arrive in sufficient numbers to be sold at a relatively cheap price.

Given the correct treatment of ample swimming space in clean conditions with a sufficiency of a good, and varied, nourishing diet these fish will become quite tame, make good growth and cause few problems. They are long-lived and, in pools, can reach a size of 12 inches or thereabouts. Throughout their life they

will live in peace, not interfering with or bullying either their own kind or other fish.

Another nacreous singletail goldfish, very popular with British fishkeepers, is the Bristol shubunkin. As with the previous two varieties this fish is also equally at home in both the pool and indoors aquarium. Good specimens of this variety are, normally, available only from amateur breeders, the majority of whom are concentrated in the areas of Bristol, London and the Midlands. This shubunkin was developed by the Bristol Aquarists Society, who produced the first standard in 1934. It is a graceful streamlined fish in which the fins are more developed than those of the London type. The distinctive feature is the caudal fin, which is roughly half the length of the body and has rounded lobes and is forked. In some specimens the upper and lower halves of the tail are almost disc shaped! Show standards, however, do not require such fullness, the exact shape being difficult to describe in words although it has been referred to as having a shape of a 'cupid's bow' to the

trailing, or posterior, edge. A very popular and colourful fish for the show bench, a really good specimen of the Bristol shubunkin is exceedingly attractive.

The final singletail goldfish to be described in this article is the comet. An American-produced variety, it is no longer as popular as it once was. It is a metallic scaled fish with the burnished gold appearance of the common and a body very similar, in outline, to that of the Bristol shubunkin; again the main feature is the tail, which should be very deeply forked and equal to the length of the body. In addition there is a high dorsal fin, often as high as the body is deep. As would be expected, from the appearance of the fish, it is capable of quite fast bursts of speed. Although inferior to home-bred specimens, imported stock of this variety is occasionally available at dealers. In common with the other varieties mentioned, it will make itself at home in both tank and pool, but probably prefers the more open space of the latter, where it can exercise its turn of speed without hindrance.

## Specialist Koi-Breeder Visits the U.K. from Japan

EARLIER this year Mr and Mrs E. Allen, chairman and P.R.O. respectively of THE BRITISH KOI-KEEPERS' SOCIETY, received a visit from Mr Takehiko Tamaki of Hiroshima, one of the leading specialist breeders of high-grade koi in Japan, who was visiting this country for the first time whilst en route to judge at the annual koi show in Los Angeles, U.S.A. Mrs Allen reports: "We were most alarmed by Mr Tamaki's insistence on seeing our ponds and koi. We knew the fish would appear poor by Japanese standards, being made up from the relatively cheap grades of koi that are usually imported into the U.K. We need not have worried. With the aid of a bright, sunny day, his interpreter and an excellent young Japanese lady interpreter

familiar with the subject of koi, we all thoroughly enjoyed the day in Peterborough. Many photographs were taken, though we suspect some of these could well finish up as examples in the Japanese list of 'Don'ts'! Work had already been started on deepening our smaller pond and the garden was generally littered with piles of bricks, sand and a ton of pea-gravel for the filterbed. No way could I hide that lot!

"Together with many similar Japanese people who really care about koi, there can be no doubt that Mr Tamaki was most understanding and fully aware of our problems with respect to climate and the difficulties in trying to keep fish that had suffered an arduous journey halfway round the world. When questioned about large koi,

which it was everyone's ambition to own, he said they did not travel well, and, for his part, he did not export koi above 12 in. in length. Kohaku are first favourites in Japan, although it was difficult to breed a good red and white. Taisho Sanke are second favourites. Ohgon are not popular but they are easy to produce, and, as Shusui are not in great demand, not so many are grown. The winner of the recent Seventh All-Japan Koi Show was a Kohaku, 28 in. in length and 7-8 years old. The Ninth All-Japan Koi-Keepers' Society Show was to be held on 21st and 22nd March, when more than 2,000 koi would be entered.

"On the difficult subject of sexing koi with any certainty, Mr Tamaki could only add that the differences between the sexes were most noticeable during the spawning season. Otherwise, female fish generally have a more rounded, feminine look, the pectoral fins have a round appearance and are usually



Awards and trophies for the annual koi show at Los Angeles are seen behind Mr. Takaniko Tamaki from Hiroshima, who was judge.



Below is a picture of the winning koi (a Kohaku—red and white variety) at the All-Japan Koi Show. It is 7-8 years old and measures 28 inches in length.

smaller in proportion to the body than in males. Males at all times of the year should have a slender, streamlined look with longer, more triangular-shaped pectorals that develop a thickened leading edge at spawning times. Of course, there are always exceptions, as some of our members know.

Ideally, ponds should have a depth of about 5 feet to avoid rapid changes in temperature. Shallow ponds are bad, as water temperatures can fluctuate too rapidly for koi. Ponds in Japan are often partly covered with polystyrene during winter for

protection. (In the excitement we forgot to ask exactly what form of polystyrene he meant, i.e. chippings or larger, flat pieces.)

In summer, koi should be fed little and often, as too much at once causes koi to over-eat and develop intestinal troubles. Koi which grow slowly make the better fish. When changing water it is always best to remove water from the bottom of the pond as this water is soiled and depleted of oxygen. Our own method of water exchange, with soiled water taken from the bottom and a top overflow

for removal of surface debris was fully approved.

Some discussion on diseases and parasites took place and, for white spot, methylene blue was recommended at the dosage of 0.5 gram in 1 ton (220 U.K. gallons) of water. Dipterex (mostly in liquid form) was widely used against parasites; however, this and most treatments were only really effective above 50°F, as below this temperature parasites were less active.

Many koi suffer or die when the water is over 80°F and particularly if there is a lack of aeration. Anaikibyo, a disease producing deep holes in the body, was the subject of much research in Japan at present. If the disease was noticed at the onset, the treatment he had heard recommended, to prevent the disease spreading to other fish, was to make a paste of two teaspoons of Malachite Green in half a tumbler of water and apply to the affected area every day for 7 days.

The time passed all too quickly with so many things not discussed, but as Mr. Tamaki had to return to London he was warmly thanked for his patience before the last-minute dash to the station." (Reprinted by permission of The British Koi-Keepers' Society from the Society's Newsletter no. 29.)



# Success with the Firetails

(*Hypseleotris galii*)

By RAY LEGGETT

(Brisbane, Queensland)

OVER the years, I, together with several aquarist friends, have tried to spawn and raise firetails (*Hypseleotris galii*), a native fish found in streams throughout Eastern Australia. It was not until September 1974, however, that the break came, when Frank Finney reported a spawning by large 6 year old fish.

Frank had set up two pairs, males 75mm, females 60mm, in a 36in. by 18in. by 15in. tank. A flower pot planted with giant vallis was placed in the centre. The fish had been conditioned on earthworms and mosquito larvae. The actual spawning was not observed. A male was seen guarding the leaves of the vallis and on inspection two 1/4-inch-wide leaves were seen to be covered on both sides with small (1mm) eggs for a distance of 4 inches.

The male fanned the eggs in an unusual way; he swam up the leaf fanning with his pectoral fins as he went, and then turned over and swam down head first on the other side of the leaf, then up the second leaf and down again, continuing with this care until one of the other fish came too close, when he would break off and chase them back to a corner of the tank. Unlike some cichlids, where both parents fan and guard the eggs, the male firetail would not tolerate the female near the eggs. The tank was covered on three sides with black plastic and had a top covering of duckweed. The temperature kept around 59-64°F (15-18°C). The eggs hatched after 12 days and the fry were very tiny. After a further 6 days, however, they had all disappeared and when the tank was cleaned out several dragonfly larvae were

found, which had possibly been introduced with the mosquito larvae.

Frank then offered the four fish to me and I set up a similar tank on the floor of my fish room, with a flower pot of vallis. The water hardness was 80p.p.m. and reaction was pH7.0. Temperature was kept at 72°F (22°C). Within a day they spawned and the eggs hatched in 10 days. I then removed the four adults to a similar set-up, with the same vallis plant, which allowed me to have a better view of the fry, and I commenced feeding them on fine Infusoria and yolk of egg. I estimate there were close to 1,500 fry at this stage, and they were so tiny one had to view them from above while holding a powerful torch at the side of the tank.

After 2 weeks the fry could be seen to have cream stomachs after a feed of egg yolk, but they were still too small to take newly hatched brine shrimp. Although it was quite a good sized tank I was unhappy about using too much egg yolk in case I caused the tank to become polluted, and after a further 2 weeks I estimate there were 400 fry 5mm in length, which could just manage to take newly hatched brine shrimp.

Once on to shrimp they grew at a slightly faster rate, although at 60 days were still only 8mm in total length. During this period I had a further three spawnings and kept the third after having given the parents back to Frank. In all, I raised 750 fish and at 6 months of age the youngsters were 25mm in length. In conclusion, I think the main difference between these breeders and other firetails I had tried to spawn unsuccessfully was their size and age.



## Readers' Queries Answered



### Breeding Bumblebees

*I would think I have a pair of bumblebee gobies and wonder if they would breed?*

You do not state whether you are keeping these fish with their own kind in a separate tank or with other species. If the latter, then they should be separated into a small breeding tank in water they have been accustomed to (brackish water preferably, 1-2 teaspoonsful of sea salt/gallon, but keep to freshwater if this is their normal environment). Temperature should be in the 75-80°F (24-28°C) range and the tank laid out with rockwork and flat stones. A small or broken flower pot on its side will provide a cave-like setting for the spawning. The fish should be fed with a very varied diet of live foods. The large eggs will usually be laid in the flower pot and will be guarded by the male. According to temperature the young will hatch in 4-5 days and must be fed with microscopic live foods (Infusoria such as rotifers and paramecium) in the first instance. The rotifers may be difficult to come by, though they may be obtained from some daphnia ponds, but the paramecium or 'slipper animalcules' are the commonest organism in an Infusoria culture and their supply should present no difficulty.

### Digging Fish

*I have a Petricochromis pulcher that is a digging maniac and although the literature usually describes it as 'will not harm plants' the plant roots are being damaged because they*

*spend so much time out of the gravel. What can I do?*

In fairness one should say that 'will not harm plants' is a valid comment as it almost certainly refers to plant-eating, not incidental harm to plants through digging activities. But it should be possible to prevent the plants being pulled out like this. Make sure that the gravel is deep (3-4 inches depth at the back of the tank) and place really large stone slabs that reach down to the tank bottom along the edge of the planting zone. Two or three thin strips of stone can then be inserted into the gravel towards the back of the tank, slanting down to the tank bottom to divide up the planting area and thus confine any digging activity within some bounds. Another method of protecting young plants is to thread them through the hole in the upturned end of a flower pot, which can then be broken off to leave enough pot side to reach down to the bottom of the gravel from the surface.

### Pigmy Sunfish

*I have a small spare tank (16 in.) and would like to use it as an unheated tank for something a bit different. Have you any suggestions?*

This would be a nice little tank to use for the pigmy sunfish, *Epiplatys evergladesi*. It grows to only about 1½ in. long and can be kept in an unheated tank. However, although it can withstand a very wide temperature range down even to 40°F (4°C) the males will show to their best advantage if the tank is kept in a warm room with an

ambient temperature of 60-65°F (15-18°C). They are quite timid fish and will in any case be much happier in a tank on their own. The tank should be planted and the fish fed with small live foods or frozen foods.

They are easy to sex; the male is the more colourful and the female is reddish-brown with transparent fins. They are also very likely to spawn, laying the eggs on a plant leaf. The eggs are safe with the parents and the fry need to be fed with only the finest fry food at first.

### Loss of Colour

*Can you tell me what water conditions oscars prefer? A red oscar purchased a few months ago has largely lost its brilliant colour but appears to be perfectly well in all other respects. It is eating well and has put on size and weight on a diet of tubifex, chopped garden worm and small pieces of meat.*

Water conditions are really not critical with oscars provided that normal tank maintenance is carried out, that is, some water changes and/or procedures to ensure absence of organic nitrogen compounds. Gravel and some large rocks and floating plants should be provided in the tank, which should be regularly siphoned out and topped up with fresh water. If all these requirements are being catered for, then one would suspect that the fish you have acquired is an import that has been colour fed and is now reverting to its more normal coloration. Importers are receiving, largely from the Far East and Malaysia, beautifully coloured fishes that are being fed before dispatch on a secret formula that is producing these vivid colours. Red oscars and discus are bred in quantity in the East and it is known that the feeding plays a great part in the vivid coloration that is being obtained. Unfortunately, reversion to a normal diet causes gradual fading of these colours over 3 months or so.

*Continued on page 74*





by  
ARPEE

## Personal COMMENT

A NUMBER of years ago I noticed in a local dealer's tank a small tetra which was quite unfamiliar to me. This was nothing unusual, as I was always, at that time, meeting untried species and adding them to my collection in an undisciplined and irresponsible sort of way. The shoal of 1 inch fish I noticed on this occasion was, to me at least, something rather special, but it took me some time to track down anything in print about them. They were dark olive above and soft black below, with a most brilliant greenish white neon line running from fore to aft. This was, of course, the black neon (*Hyphessobrycon herbertaxelrodi*), then a recent importation from Brazil which, if I remember rightly, cost about 5 shillings each.

Four of these little fish formed the nucleus of a large community of small tetras which I set up shortly after first seeing them, and they were joined by conventional neons and cardinals soon afterwards. I think it is true to say that this little collection made more impression on me and my family than almost any other combination I have kept before or since, and I sometimes wonder when I shall have the leisure and the means to repeat the experience. What I was unaware of at the time was the fact that the black neon grows larger than the neon, and thus, if you have shoals of comparable numbers, the latter can be somewhat outclassed. This is just a finicky observation, however, and it is no problem at all to adjust the quantities of your fish to suit the environment.

The attraction of the black neon lay in its appearance as a fish of considerable class and distinction. Its habits were delightful and keeping it involved no forms of difficulty at all, either in feeding or adaptation to our local brand of water. The fish did magnificently.

I have seldom been without black neons

ever since, and they have proved to be consistently hardy and tolerant and no less attractive than when they were newcomers. They always remind me of better-balanced emperor tetras — not that the colouring is in any way comparable — but they possess a chubbiness of body which few of their relatives achieve, and this is a feature which displays itself particularly well when lighting is skilfully applied. The Hendon AS tableau at last year's Aquarium Show contained some very fine emperors, which showed this to perfection, and I remarked at the time how I wished more aquarists would look at the possibilities of first isolating the best feature of a given species and then trying out various methods of exploiting it to the full. You may notice that spectacle makers cottoned on to this idea some time ago and decreed that if you have to wear glasses (and even if you don't), you have to affect things as big and ugly as bicycle wheels; and then came hair. The result has been that a considerable proportion of the population has disappeared from public view, but will doubtless emerge one day when someone presses a button. However, it does emphasise how emphasis can pay off.

Although breeding was at the forefront of my activities when I first kept black neons I never managed to get them in the least bit interested in posterity (though the neons and the cardinals were spawning fairly reliably at the time). On the other hand, although I did lose an occasional fish in the course of one virulent attack or another of white spot, individual fish proved to be very long-lived, often reaching the 5 year mark without apparent difficulty.

This remarkable and attractive species has come into its own as favourite amongst aquarists who value the smaller tetras.



The word 'discipline' has suffered much in recent times at the hands of anarchistic layabouts and of the socially liberated; their almost total lack of personal charm does rather underline the real value and meaning of the word, and I hope that increasing realisation of its place in things will bring about something of an improvement in our habits. For discipline is really only organised habit, and the keeper of



livestock of any kind is the first to accept after only limited experience how important routines are in the maintenance of well-being in animals.

Whether our primary interest is in fish or in plants it is still necessary to work out some form of discipline for our charges. The proud owner of a fish house has a real responsibility, and even the youngster with a small tank with a couple of goldfish has the same sort of obligation, though on a far smaller scale. The former will help himself very considerably if he draws up a check list of all the various functions he knows he has to perform during the course of a year. Some of these are daily chores, some are weekly ones, and some are much less frequent.

If all these are jotted down at random (this is an ideal job for winter evenings), they can then be sorted into headings, depending on their frequency, and then committed to a diary. A large diary (day to a page) is ideal, but it may suit some to use such devices as the Sasco Year Planner, which enable functions to be represented graphically on a chart which is affixed to the wall. Memory is a very unreliable thing and as one grows older it becomes worse still. The pound or two spent on either of the above aids may mean considerable savings in stock or personal time. The businessman knows precisely how useful these things can be, and I hope that others who only handle resources as a pastime will not be put off by their almost traditional suspicion of anything that smacks of paperwork.

Children are rather more difficult to imbue with an appreciation of the fruits of timeliness, and it often happens that the death of a favourite pet is the hardest and most effective lesson in this respect. I always think this is a bit hard on the pet, however, and hope that parents will try to devise means of getting the message across in a more humane fashion. I suppose that example is about the best way of achieving some degree of co-operation, and I have made it a rule for some years that all pets in this house get fed before we do. There is nothing ultra-altruistic in this, though so far as I am concerned it works very well.

The fact of the matter is that in many cases if I worked the rule the other way round my charges would often have to wait a long time for the next meal, as

the temptation to doze off for a few minutes after a satisfying meal on a summer afternoon or the depths of winter is something which is often quite irresistible. (I would add that I am a firm believer in this habit of recharging one's batteries, and the great Churchill gave some impetus to the practice. The important thing to remember here is that one has to wake up within twenty minutes or so, and this is where the discipline comes in!)

Disciplines are one thing and techniques are another. Just as we must do the right thing at the right time we must develop the ability to do things in the right way. The one can be committed to paper in timetable form, but the other is really the fabric of the hobby and can only be achieved by exposure to the demands of whatever livestock we keep. In the course of our experience we read a lot and discuss a lot, and just once in a while we discover something and tell everyone else about it, which reduces the ignorance margin by just that little bit which may mean success or failure for someone else.



Graham Robertson springs to the defence of the British Marine Aquarists' Association Management Committee in his letter in the April issue of *PFM*. Readers may recall that I had interpreted Peter Ireland's call for a Study Group as something more divisive than was ever intended. Perhaps this was not really what Mr Ireland had in mind, but to at least one member of the BMAA, this is what it looked like. What drew my particular attention to his case, apart from the fluency with which it was presented, was reference to the fish club posture which might be said to influence present thinking.

As I am no longer a member of the BMAA I might be advised by its members to hold my counsel, but since I paid my way along with the rest I see no particular reason for not having a last say! Graham points to the BMAA Management Committee having somehow miraculously held together all the varying interests in the marine fishkeeping field, and no doubt since he is closer to them than I or any ordinary member, he must be given credit for having seen them in action. As a mem-



ber, however, I received a contrary impression: there never really emerged from the MC any cogent policy, simply because it was trying to please all and offend none, and to point in all directions at once. As every politician knows, inaction and lack of purpose can carry one from one election to another at minimum inconvenience, and it is comforting to know that even if you have achieved nothing, you have not actually lost any friends. Certainly, every treasurer would welcome this sort of policy as it guarantees a stable membership, but the benefits may prove to be shorter lived than he would have wished.

Every society has to make its mind up some time: fence-sitting proves to be a more skilled occupation than merely doing nothing, and only the fittest survive. The BMAA, to the average member, is the monthly appearance of 'MarineNews', its journal. It is a very readable publication which could do with a lot more support. But the MC message, if it has one, scarcely ever comes through. Even over the cyanide issue the MC did not see fit to do more than merely endorse the excellent paper produced by two of its talented members. No doubt some members of the trade would have been offended had the MC done otherwise, but what of that? Surely the BMAA is better off without members who condone the use of unethical methods of capture.

On other issues I feel that more real responsibility should have been shown. The real problem before the average mariner is how to keep his fish alive for more than a year or so, but the impression one gets from MC contributors is that all this is exaggeration, and that marines are just as easy as freshwater. Anyone who has spent as much money on it as I have will know that this is utter bunk, but contributors are allowed to get away with it.

Perhaps I set the value of creatures' lives too high, but judging from some of the letters I get from readers, there are many more people about than Management Committees would believe really care about this sort of thing. As time passes I think the BMAA MC will have to sort its ideas out over policy, and even if the Study Group forms only part of the mixture, the notion might be the catalyst for a reaction which will, long term, put the BMAA really on its feet. I have for some time felt that its projected image has overreached its capabilities. Very fortunately it has numerous young members who will not be deterred by the difficulties which confront them. The way round them is to acknowledge that there is a certain smugness and lack of purpose just now, and to isolate the problems which it is worthwhile trying to solve. I hope the BMAA will do some soul searching and emerge the better for it.

## Readers' Queries Answered

continued from page 71

The 'special' diet appears to consist of, or include, a high proportion of some marine creatures with a high pigment content rather than any chemical or other sophisticated treatment.

### Breeding Puffers

Can you tell me how to breed puffer fish?

Several species of the Tetraodontidae have been bred for a number of years but detailed reports of such breeding are rare. It is said that *Tetraodon*

*cutcutia*, *T. fluviatilis* and *T. leiurus brevirostris* males carry out the care of the eggs after they have been laid by the female on a stone. The male 'sits' on the eggs during the incubation period (6-8 days) and after the young have hatched they are further guarded by the male in a depression in the gravel or sand. *Tetraodon schoutedeni* has also been bred, with the eggs being laid on a leaf (a hatching of these eggs was described in TFH, January 1959). The greatest problem with rearing puffer fry seems to be

in finding a suitable first food. In one instance Infusoria, white worm, cyclops nauplii and newly hatched brine shrimp were all refused and only rotifers accepted.

### Were the Orfe to Blame?

I was the recipient last year of some goldfish fry which I grew on in a tank for a little before introducing them into my pond. Although they were quite healthy they disappeared within weeks. I do not think the pond conditions were to blame as the large orfe, which are the normal pond inhabitants, were quite happy. Someone has suggested that they were eaten by the orfe. Is this possible, only I don't wish to repeat the same mistake this year?



Small crustaceans and surface insects are the mainstay of orfe diet but if they are very large orfe and the goldfish were very small then, yes, they may have eaten them. Orfe are mostly predatory, but a large fish would sweep up a very small one along with the insects and snails without noticing it.

#### Surface Bubbles

I have just bought some young orfe and rudd ready for the garden pond and am keeping them in a tank for quarantine purposes. But I'm wonder-

ing if the tank conditions are unsuitable as they make so many bubbles at the surface. Does this indicate that something is wrong?

Some fish make particular use of atmospheric oxygen, taking air bubbles into the mouth when their water is oxygen-depleted. But they are also quite capable of doing this when there seems to be no need for it. Carp in particular tend to do this and so will orfe and rudd. You could try putting an aerator into the tank but the surface

bubble-blowing may still continue. Persistence of bubbles at the surface of water can, of course, be an indication that the water is slightly polluted and under such conditions as well as 'mouthing' at the surface the fish are likely to appear to be 'hanging' there lethargically at an angle, listless, looking distressed. Pollution of some sort, either from overcrowding or from decomposing organic matter, is the cause and fresh water must be introduced into the tank and the overcrowding relieved.

## Have You Made Your Own All-Glass Aquarium Yet?

By CLIFF HARRISON

**C**ONSTRUCTION of all-glass aquaria continues to be the subject of numerous enquiries from readers who missed earlier articles in *Reefers* and also from newcomers to fishkeeping. With continuing steep rises in the prices of hand-made items like angle-iron framed aquaria, this would seem to be an ideal time to revive the subject for the benefit of those hobbyists who have not yet turned their hand to constructing tanks from sheets of glass bonded together with silicone-rubber sealant.

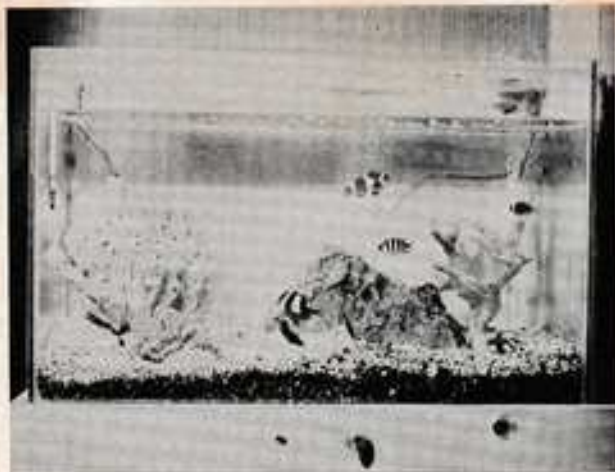
It is interesting (and gratifying) to note that our optimism years ago for this method has been fully justified; since then, all-glass aquaria have become such popular items in aquatic stores that they have in many cases almost entirely replaced the traditional types of aquaria, particularly in the larger sizes.

Unfortunately many people still have misgivings about merely 'gluing' glass together to give a leak-proof container for their fish. To such people I would suggest the purchase of a ready-made all-glass tank to restore their confidence in the

principle, before they turn their own hand to the job. On the basis of the tanks I have made myself, and the ones commonly seen elsewhere, I think there is really no limit to the size you can construct provided that you use an adequate thickness ('weight') of glass and that the filled tank is properly supported. Perhaps I should reiterate now that I think the framed aquarium will always have a place with us, either for decorative or practical reasons: the way that the hundreds of tanks are rushed around at The Aquarium Show in London each year, I hate to think what breakages would occur without their sturdy metal frames!

#### Preparing the glass

The glass used in frameless aquaria must be cut squarely and cleanly, and all edges should be smoothed carefully with a medium grade of 'wet-and-dry paper' or grinding stone, both used with plenty of water. The glass should then be dried and wiped over with an absorbent rag or paper towels to ensure cleanliness — a grease solvent such as Thawpitt can be



One of the author's all-glass aquaria in use for tropical marines. Provided that glass of adequate thickness is used such aquaria can be constructed to the maximum size likely to be required by the amateur fishkeeper.

used to remove all traces of oil, fingerprints, etc. Although scrupulous cleanliness is not absolutely essential, there is no reason to take chances — particularly with large aquaria.

#### Thickness of glass

The thickness of glass selected will depend on the size of aquarium to be built. For the base, all aquaria up to 36in. long by 12in. wide should have  $\frac{1}{2}$ in. glass; anything longer or wider needs  $\frac{3}{4}$ in. glass for safety. For sides and ends, 24 oz. glass will suffice up to 18in. long by 10in. high, or 24in. long by 6in. or 7in. high (which is useful for breeding). 32 oz. glass can be used for 18in. and 24in. tanks that are 12in. high, and  $\frac{1}{2}$ in. glass for anything longer or deeper. For anything much beyond 48in. long by 15in. by 15in.,  $\frac{3}{4}$ in. glass should be used all round. The use of the lighter weights of glass is permitted in small aquaria on the assumption that they are likely to be used in a fish room or fish house, and that children are not likely to be knocking or hitting them; if knocks are a possibility, always go for glass of one gauge heavier than is suggested above.

#### Type of glass

Glass of 24 oz. and 32 oz. comes as ordinary clear 'window glass'. Thicknesses of  $\frac{1}{2}$ in. and  $\frac{3}{4}$ in. are available as 'float', which is expensive but essential for the

front viewing panel; cast, which can be used for the back, ends and base, has a textured appearance; I do not recommend wired glass for any all-glass aquaria, as its rough edges have a tendency to result in cracks as the tank flexes in use. In addition to glass for the base and four sides, you will need two strips of glass (of the same weight as the sides), about 2in. or 3in. wide, to be fixed the length of the tank inside and just below the top edge; these will prevent the top of the tank bowing outwards from the water pressure.

#### Construction

Now we come to the actual construction, which should be carried out on a solid table or on the floor, either being first protected by several layers of newspaper. The base is placed on the work surface, and the back glass stood upright alongside (but not touching) the base adjacent to its required position, where it can be supported by tin cans or boxes. The aim is to get a thin but near-continuous bead of silicone rubber between all the 'mating' glass surfaces; it is this film that gives the joint its 300 lb. per square inch strength, whilst another bead applied afterwards all around the inside ensures its watertightness. Start by applying this thin bead along the length of the aquarium, at the back, to the top surface of the base glass where the back panel will sit. Carefully lift up the back glass, and lower it gently



on to the sealant — but still keeping it supported upright by the cans. Then apply another strip to the front face of each end of the back panel, about  $\frac{1}{4}$  in. from the cut edges and continuing it forwards over the base as well. One end panel is aligned on the base, and the back brought up vertical until it meets the panel: this joint is secured at top and bottom with a small strip of adhesive tape, for preference plastic insulation tape. The other panel is similarly placed and secured. A layer of sealant is piped on to the front (cut) edges of the end panels and lengthwise across the top of the base; the front panel is positioned and secured, and the whole aquarium carefully squared up while the sealant is still fluid. Any excess may be removed with a damp rag before it has dried or by use of a razor blade subsequently. Silicone-rubber sealant is in fact, a rather odd product.

#### Silicone rubber

First, rather than being a sealant pure-and-simple, it is an immensely powerful adhesive which bonds chemically to glass or any other material which contains silica. Second, when 'cured' for 24 hours (or rather more to achieve full strength) by exposure to air, it has a pliable, rubbery feel which it retains indefinitely, withstanding extremes of heat and cold. It is this flexibility which ensures its success in aquarium construction, since it can 'give' with the minute movements created by temperature changes, vibration, water pressure, etc. Epoxy-resin adhesives were experimented with some years ago but, lacking any flexibility, these were not successful.

#### Internal seal

After the tank has been left for 24 hours or so, a narrow but continuous bead of sealant must be applied to all internal angles, care being particularly vital in the corners. After a further 24 hours the top glass strips should be affixed, about  $\frac{1}{4}$  in. below the top. The top ends need not fit particularly tightly, but it is essential to get an even layer of sealant between the strip and the glass panel, and then to run a bead over the top afterwards. Tin cans are very useful for initially supporting the strips and ensuring they are quite square. These strips are ideal for supporting a cover glass, to minimize evaporation and

prevent fish from jumping out, and should be included for strength in all aquaria except very small show tanks.

#### Lighting

As ready-made metal covers have now become so expensive, an aquarium can be made even more attractive with concealed lighting: merely build the tank about 4 in. higher than the water depth you require (you don't need to use thicker glass because of this extra height, since the water depth is constant), place the glass strips around  $3\frac{1}{2}$  in. below the top, and cover the top 4 in. at front and sides with Fablon or Formica off-cuts, either in a plain colour or patterned, to hide a home-made reflector unit. Such a reflector unit can be made with heavy plastic guttering, to house a fluorescent tube, or a wooden or metal box can be used to house ordinary bulbs; in these instances, cover glasses are quite essential.

#### Precautions

Be very careful when carrying an empty all-glass tank — it is exceedingly slippery when wet. Never carry one with more than an inch or two of water in it — particularly not on your own, and never by the lengthwise glass strips. Razor blade scrapers will cut into the sealant and cause leaks, so always use the plain plastic or nylon mesh types for cleaning the inside glass surfaces. And remember always to seat all-glass aquaria on narrow (1 in.) strips of  $\frac{1}{4}$  in. thick expanded polystyrene all around the edge of the base, since shelves are never absolutely flat, and angle-iron frames always have raised spots which would crack the base during filling.

As with so many things, confidence will soon come in the construction of all-glass aquaria. They are so easy to make, in odd sizes or shapes to fit particular requirements, that even the most ham-fisted of us can achieve success. They are also relatively inexpensive, and anything that helps us to expand our fishkeeping activities without crippling us financially or incurring the wrath of our better halves must be for the good of the hobby. Finally, for those not aware of the qualities of silicone rubber, there is the sheer novelty and wonder at the sight of an unframed cube of water containing colourful aquatic life. We all like to impress our friends, don't we?



## An Undemanding Beauty from West Africa



*Aphyosemion australe australe*

**I**F a hobbyist decides to 'investigate' the egg-laying toothcarp group he will most likely choose, first of all, this beautiful, brightly coloured fish. The reasons are easy to appreciate — the fish is peaceful, undemanding and unusually gorgeously colourful.

As long ago as 1913, this 2½ in. (6 cm.) long *Aphyosemion* species was already being imported into Europe from its home in the Gabon region of West Africa. The male has a pike-shaped, brownish-red coloured body, the gills and the part of the body behind them being greenish or bluish. Body and fins are decorated with red spots. The dorsal and anal fins are elongated like banners. The lyre-shaped caudal is drawn out top and bottom in two long threads and edged in reddish violet with the central part being coloured greenish blue with red spots. The female is light brown with individual red spots

By RUDOLPH ZUKAL

Photographs by the author

Translated by F. MARSH

on the body and its fins, too, are elongated.

To keep a 'Cape Lopez', as these fish are sometimes called, a temperature of at least 72°F (22°C) is necessary, a smallish not brightly illuminated tank being used with slightly acid, clear, slightly salted water and, as with all members of the *Aphyosemion* genus, the water free from Infusoria. Floating plants as well as the





Left: Two males after a battle for supremacy. The loser (lower fish) leaves the territory to the victor. During the fight blows from the tails are exchanged.

usual planted growths can be used. The fish must be fed live foods and they do best if they are kept alone or with other peaceful, quiet fish of the same group.

For breeding, the temperature should be raised to 75°F (24°C) and the same arrangements can be provided as for normal maintenance. Fine-leaved plants or a large bunch of artificial fern should be added to the tank. The fish spawn irregularly, at intervals of several days or even weeks. The sticky eggs are fairly large and can be seen quite easily. The eggs should be shaken from the plants into water and then by means of a glass tube carefully sucked out to be transferred to and kept in a small dish of shallow water (only about 1 in., 2-3 cm.). The water in this dish must be identical with the water in the spawning tank and should be covered with a sheet of glass. But the eggs must also be protected from direct light, which harms them. Any white, infertile eggs can be looked for and removed each day.

Since the eggs are collected at different times, there will soon be several such dishes and these should all be marked.



Below: Part of the display pattern of the male (upper fish) involves folding his caudal fin. Although the female is less colourful she does have elongated finnage.



Above: This position of the pair is adopted as the pre-spawning behaviour develops and the female becomes increasingly willing to participate.



Left: It is the female who appears to choose the spawning region and leads the male to it. He swims so closely as to appear almost to 'ride' with her.



The site is chosen above the tank bottom and the fish approach it together (left). Next the actual spawning occurs (right) with conspicuous curvature of the pair's bodies

with the date of the spawning. The fry hatch after 10 days or longer. The hatched fish can then be poured from the dish into a tank that has already been prepared for them. Young fish grow quite quickly and are sexually mature after 10 weeks.

Earlier, these fish were called *Haplochilus callurus* *von australis* and *Panchax polychromus*. In the last few years Herr Hjerresen has succeeded in breeding a yellow variety of *A. australe* and this was named by Herr Meinken *Aphyosemion australe hjerreseni* (Meinken).



Head-on view of the spawning pair with the S-body shape adopted during egg-laying clearly demonstrated (left). To the right the pair are seen swimming upwards from the tank bottom after the eggs have been laid and separating from one another



## COLDWATER SCENE



By FRANK W. ORME

## Keeping the youngsters growing • Pond renovation • Beware weed-killers

AS I write these words I can only guess at what the weather for June will be. Hopefully it will be warm and sunny. After the very mild winter who can tell? I have read somewhere that the past winter was the warmest for a hundred years. Despite all predictions that the earth is entering a cycle of severe cold, it nevertheless seems that what is really happening is winters are getting warmer and the summers cooling. In other words the seasonal temperatures are becoming less drastic in their differences so that the four seasons are less well defined.

Nature this year was certainly fooled by the higher than normal temperatures. Rose bushes continued to grow, trees were in bud early and frogs were led into thinking it was spring in February. I removed a great mass of frog spawn from my garden pool on 5th March, which was a good month earlier than usual. My water hawthorn (*Aponogeton distachyus*) continued to grow and flower throughout the so-called cold period.

Conversations with other goldfish breeders revealed that on a number of occasions during the winter they had witnessed the male fish attempting to drive the females. This behaviour had also been noted in my own fish house; in fact, as reported in last month's *PFM*, I had spawnings during February which produced a prolific number of fertile eggs. The resulting large number of fry made it absolutely essential that they were culled early — failure to do so would have caused the young to become stunted in growth, due to overcrowding. I regret that on this occasion I found no pleasure in the task, for it was a cold weekend, and working in an unheated fish house for some hours was a back-stiffening occupation; nevertheless, the fry had to be sorted. Of course, the reward was the increase in growth which the extra space encouraged, and made the labour worthwhile.

It was a sunny spring-like day that I had the pleasure of listening to a most enjoyable talk on Japanese goldfish. The speaker, Mr Alan Lawman, and his companion, Mr George Fleming, had travelled by train from London to Coventry to address the Association of Midland Goldfish Keepers. Between them they had carried a slide projector, slides and photographic wall displays of goldfish. Mr Lawman spoke and answered questions from 2.45 p.m. until 5.15 p.m. with a short break for refreshment. Such were the willing lengths to which Alan went in order to allow fellow enthusiasts to share his enjoyment of Japanese goldfish.

The subject of the talk was Alan's visit to Japan, the breeders that he met and their establishments, fish and methods of raising good quality Ranchu and Azumoniishiki. The talk was illustrated by the projected slides, which were very good and, apart from scenic views, depicted excellent specimens of metallic lionheads (Ranchu) and a nacreous form known as Edoniishiki, together with nacreous orandas (Azumoniishiki).

A strange feature of the well-shaped nacreous fish was that whilst the colours were excellent, especially the blues, the fish had quite poor head growth. On the other hand, the metallic lionheads were outstanding, being strong sturdy-looking fish with well-formed body shape and large fully developed hoods that covered both cranial and 'cheek' areas of the broad heads. A number of these latter fish were seen to have caudal fins that were joined along the upper margin; under British Standards this would be severely penalised as a fault. The Japanese, Alan explained, do not consider a divided tail as essential, provided the caudal conforms to certain basic requirements of shape, form and angle of carriage; it must also be well spread so that it presents a well-placed and balanced appearance when viewed from above.



Other slides were of the raised concrete hatching and rearing pools, which were 6 feet square and had a depth of 9 inches. I was particularly interested to learn that these fancy goldfish are fed on graded daphnia from the moment that they become free swimming. Large ponds are set up for the sole purpose of raising daphnia and this food is fed to the young fish in such heavy quantities that they cannot avoid eating it whenever they open their mouth. At a later stage large amounts of bloodworm are given, the average daily expenditure, on this live food, being £5.00. The Japanese breeder expects his fish to reach a size of 6-8 inches within 12 months! Because of this heavy feeding it is necessary that the pools are cleaned out thoroughly every second day, to remove the excessive excreta; they are completely emptied and refilled with fresh water.

As I write these notes I recall the audience's shocked disbelief when Alan recounted how a certain Japanese breeder let others have young fish before he had made his own choice. It seems that at this amateur hatchery thousands of young fish are raised to the age of 1 month. The breeder then sends out 500 invitations, to selected people, offering them their own choice of the young, up to a maximum of ten, at a cost of £1.50 per fish. No time limit is set upon those who accept, and most do, so that they can spend all day catching and inspecting fish from the ponds without any interference from either the owner or his wife. However, having chosen and paid for the fish, the buyer is offered various foods at greatly inflated prices — if he refuses to buy he does not get any further invitations. The proceeds pay for the whole family to take an annual holiday in Hawaii! The breeder did not fear his contemporaries having first choice of his fish because he believes that it is the subsequent treatment that produces the best specimens, provided the fish are from a good, well-established strain. He considered that he could raise better fish than other breeders and his point seemed well proved by the champion fish which he produces each year. As one listener remarked: "Compared to that price, for month-old fish, the British breeder gives his fish away!" Even at £1.50 each I doubt if any British breeder would allow anyone to take young until

after he had made his own selection — I most certainly would not!

Both the slides and talk were most interesting and enlightening; there was much to give food for thought and prompted a number of questions to be asked. I am sure there must have been a lot of discussion after the meeting. Alan is to be congratulated upon his presentation, as was warmly acknowledged by the AMGK members and visitors. Knowing something of the travelling difficulties Alan and George encountered — detours to avoid line maintenance work, I must add my own appreciation of the trouble that these two enthusiasts went to. Both Alan Lawman and George Fleming (who is secretary of the Association of Goldfish Breeders), boarded the train at Euston at 9.40 a.m.; allowing for the length of time they spent in the Midlands, they could not possibly have arrived back in London until around midnight — and that makes a very long Sunday indeed.

★ ★ ★

Recently, in the course of my daily occupation, I visited an old manor house in the country near Evesham, Worcestershire. Walking around the extensive garden with the owner, we came upon a quite large ornamental pool. As we paused to watch the great population of quite sizeable goldfish, the owner bemoaned the fact that for the past 2 years the fish had failed to spawn, whereas, in previous years it had been customary to find very many young fish at the end of the season. It was quite obvious that the vegetation had got out of hand, and this prompted me to enquire when the pool last received any attention. "Oh, about 4 or 5 years ago," I was informed. "Why — does it matter?" Tactfully I pointed out that it was just as essential to apply good management to pools as it was to apply it to the gardens.

The remedy which I suggested was to catch up the fish and halve the number, especially disposing of the numerous wild-coloured types. My further recommendations were to pump out the water and remove the silt, drastically reduce the plant life, both submerged and marginal, and divide and replant the water lilies. The base and walls of the concrete pool should be thoroughly cleaned, flushed and then the pool refilled with clean water. The pool and plants should then be left to settle down for a week, during which time



the fish should be housed elsewhere. I stressed that when the time came to replace the goldfish their water should be adjusted to the same temperature as that in the pool. The pool owner assured me that my recommendations would be carried out and I am confident that this will encourage his fish to start spawning again.

The reason why his fish had ceased to breed was the restricted swimming space, rotting vegetation adding to the already noxious bottom silt, and a population of fish that had reached the full capacity of the pool. Under these conditions the fish had lost the urge to spawn. The only remedy was to reduce the number of fish and improve their living conditions.

★ ★ ★

If your fish spawn outdoors and you wish to raise as many young fish as possible, this need present no problems if you have a spare tank, or other suitable container, in which to hatch the eggs and raise the fry away from the predatory adults. When you suspect that a spawning has taken place in your pool, carefully inspect the water plants for the pin-head-sized eggs. Assuming that you are lucky and find eggs adhering to the plants, a number of the plants can be removed. Swill them gently in the pool to remove any foreign matter, and then place into the quarters in which the eggs are to be hatched. If it is possible to raise the water temperature to around 70° F (21°C) the hatching period will be shortened. How-

ever, this is not essential. Once the eggs have hatched and the fry become free-swimming they can be fed, plentifully, with newly-hatched brine shrimps and raised exactly as described for tank-bred fish in preceding issues of PFM.

★ ★ ★

Take warning from this tale of woe I have heard. An elderly couple, that I meet from time to time, had a smallish fibre-glass pool installed in their garden by their son. During last summer the miniature water lily blooms and gliding forms of the goldfish gave them a great deal of pleasure. On a number of occasions I was proudly shown this prize jewel set in the green of the lawn, the wife pointing out 'Goldie', 'Fatty' and 'Spotty' — the latter being a London shubunkin. They would recount how the fish knew their feed time and would gather at the side of the pool. Alas, this idyll was not to last, for during a warm dry weekend earlier this year, the husband decided to treat the lawn with a combined fertiliser and weed-killer. During the night it rained and enough of the chemical washed into the pool to kill 'Goldie', 'Fatty' and 'Spotty'. The domestic bliss was upset as the wife berated the murderer of her pets, not listening to his plea of ignorance. The lesson, as has now been learned, is never, never, use garden chemicals anywhere near a fish pool. Even a spray can drift into a raised pool and cause a tragedy. Be safe — beware!

## The Aquarium Show '75

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PetFish Monthly

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## A 'Re-discovered' Mexican Livebearer



Male specimen of the 'pseudo' (*Pseudoxiphophorus bimaculatus*)

By

STEVE JORDAN

(Harlow AS)

and

J. H. PRESTON

(Southend, Leigh

& DAS)

**A**T Puente Nacional near Rinconada on the road from Jalapa to Veracruz, the Rio Jalcomulco is spanned by an old stone colonial bridge. The torrent of water here cascading down the many miles from the snow-covered Mount Orizaba to the warm waters of the Gulf of Mexico is the home of the common wild green helleri sword-tail and sphenops molly as well as of various cichlids and characins.

Here we found our first specimens of a long-forgotten livebearer; mentioned in a few of the old books and some of the more modern, better reference books, but which seems to have faded from popularity as less-aggressive species have become more and more available. This fish is *Pseudoxiphophorus bimaculatus*, otherwise known as the two-spot livebearer, or false-swordtail livebearer, although we, in Essex, prefer to call them 'pseudos' — it's much less strenuous!

In *LIVEBEARING AQUARIUM FISHES* by Dr Kurt Jacobs, the nomenclature has been updated, and the fish is described as *Heterandria bimaculatus*, which suggests a close relationship to our little friend the mosquito fish, *Heterandria formosa*. The idea of trying to hybridise the two species is somewhat mind-boggling, however, when one looks at the sheer size of

*bimaculatus*, and the relatively large gonopodium of the male fish!

In our recent travels to Eastern Mexico we confirmed that this species, whilst being very common in the State of Veracruz, has an extremely wide distribution. We have caught them as far North as the Rio Axtla in San Luis Potosi and right down as far as the Rio Tonalo in the southern jungle State of Tabasco; sometimes a mere mile from the sea, as at Puerto Mexico, and then as far upstream in such rivers as the Coatzacoalcos and Papaloapan. There are also different strains from the higher and comparatively cooler regions of the country near the city of Jalapa, for instance, and to our great surprise, another clandestine, splendid colony near the archaeological site of Tula, not far to the north of Mexico City where the winter nights are distinctly chilly, with occasional frosts. Combine your fish collecting with a trip to the Aztec pyramids as we did, and you should have a very interesting day!

No doubt the range of the 'pseudos' extends farther south beyond the Mexico Guatemala border into the adjoining countries of Central America, which is a vast distribution, especially when you compare this with another Mexican livebearing species, the Monterrey platy (*Xiphophorus*



*conchianus*), yet to be imported. Their entire worldly range is a mere 10 miles or so from Santa Catarina to Monterrey!

'Pseudos' are extremely interesting fish. They are quite aggressive (wild specimens, anyway) and, as already mentioned, a bit on the large size, females growing to 3½-4 inches, males growing rather smaller, 2½-3 inches. As regards temperament, it is not ideally suited to a community collection but it would appear as though subsequent generations are losing a certain amount of their vicious streak. Its shape reminds one of the killifish family, *Aplocheilichthys lineatus*, for example, being very thick-set and exhibiting certain 'primitive' characteristics, such as a flattened head peculiar to surface-dwelling species, a very long-based dorsal fin, wide caudal fin attached to a thick caudal peduncle, and a powerful torpedo-shaped body. The gonopodium of the male is extraordinarily long and has a fine hook at the tip so caution must be exercised when catching him, so as to avoid damage. Fish straight from the wild possess great jumping ability but tank-bred specimens seem less likely to leap to their doom; however, you have been warned!

These fish are a basic olive colour, each scale being outlined in black and reflecting a silver spot. As the scientific name suggests, these fish carry two blackish spots, one immediately behind the gill cover, and the other situated upon the upper half of the caudal peduncle. The former spot, however, tends to disappear with age and is more visible simply as a faint mark. All the fins are hyaline apart from the dorsal, which is edged in yellow and has a mosaic in black, giving one the impression of cut glassware, and the anal, which at times reflects a green-blue sheen. There are numerous local colour variations in stocks originating in different areas. The Tula population, for example, are basically gold with a gold spot in addition to the black spot. (Incidentally, these fish have a somewhat smaller dorsal fin than other specimens.)

In the wild, the *bimaculatus* is most often found in clear, fast-flowing rivers, exactly the same habitat as the helleri swordtail, which, however, prefers the deeper waters. By contrast, small plant-choked ponds and pools will more likely be inhabited by platys and gambusias. Mollies (*sphenops*) seem equally at home in either environment. Obviously the

'pseudo' requires rather generous quarters but we have kept a single, fully-grown female in a 14in. by 8in. by 8in. tank for 18 months with neither filtration nor aeration, and she remained in excellent condition, producing several broods of healthy fry during that time. This was one of the original batch brought into England in December, 1972 by members of the Southend AS, offspring from these adults being raised in a 24in. by 8in. by 6in. tank in the long, sunny June days in an outside fish house, subjected to wide-ranging temperatures. It was noted on some evenings that, by midnight, tank temperature had fallen to 90°F! But they are also equally comfortable in the sixties (°F), as long as the temperature changes are not too sudden. So, within reason, temperature changes and water conditions aren't too important.

Females become sexually mature at about 5 months old, sometimes later, and in our experience drop an average of only 15-25 youngsters, which are relatively large at birth. Broods of over 100 fry, though, have been recorded from females direct from the wild.

Many aquarists who have kept these fish, including ourselves, have found that only one, two, or possibly three males will sex out in an entire batch.

Obviously the first few weeks in any fish's life are absolutely vital, so a diet of brine shrimp, supplemented with daphnia, followed by chopped tubifex and white-worms should ensure healthy stock to continue breeding from. They will also do well on a diet of small guppies or other fry, this probably being closer to their natural diet in the wild! With their aggressive tendencies and greedy appetites, they might well be described as the poor man's *Belonesox*! With good maintenance, the young fish will reward you with very rapid growth, and a very inquisitive nature similar to that of cichlids.

This species is becoming increasingly popular with aquarists who wish to try their hand at something different, and they have the advantage of deporting well for those who are competitively minded. Show-wise, 'pseudos' scored a number of resounding successes at open shows during 1974, mainly in the south-east of England, and it will be interesting to see if this trend continues. Certainly these fish are becoming more widespread now, thanks to the efforts of a few dedicated breeders.





MR Ken McCall of the **AQUARIUM & TERRARIUM SOCIETY OF QUEENSLAND** (Brisbane, Australia) sends us the following news of the hobby there: "One of the things you might like to know about our club is the keenness that the breeding competition generates. Our club takes part in the breeding competition that was started by the Victorian club to encourage the breeding of as many fish as possible. We get a badge for 10, 25, 50, 75, 100, 125, 150, 175 and 200 species bred, and as a result we have intense rivalry. Mr Ray Leggett was the first to get his '100' up; this he did in 26 months — a fine effort but Ray has been keeping fish for many years. Our president, Mr L. Wilson, has made a tremendous effort — he has been keeping fish for only 3½ years and got his 100 in 30 months (15.5.72-22.11.74). Another tremendous effort is the score of one of our lady members, who has bred 75 species in 17 months (25.6.73-14.11.74). She has only been a club member for 2½ years. Apart from these champions we have numerous members who have between 10 and 50 species bred. Mr Leggett has just bred his 125 (the second highest in Australia) but has not yet completed his time period — the parents and young have to be passed by a committee member and the young have to be inspected again in 8 weeks to confirm the breeding. All this has a side effect in that the dealers are being urged to bring in more and more new species for us; as a result we now have more than 25 varieties of catfish available to us — a thing unheard of a couple of years ago. Another benefit is that club members get the chance to buy local-bred fish at reasonable rates. The club itself benefits as most of the expert breeders donate a

lot of fish to the club which can be auctioned off for club funds.

"One thing we find is that the literature is mostly hopeless when it comes to Australian fishes. The rainbow fishes we get here are quite beautiful; most books give about two species but there are over 20 that we know of. Some of the fishes that have been bred locally are *Nematocentrus splendida* (lake); *Melanotaenia nigrans*, *Nematocentrus maculatus* (lake); *Melanotaenia maculata*, *Melanotaenia flavicollis*, the Caterpillar sunfish from the North Territory and one that was found by Peter T'sang which has been called *T'sangii* and *Rodinocentrus ornatus*. I personally think that this latter fish, which we catch about 70 miles from Brisbane, is one of the most beautiful fish to be obtained."

### FEDERATION DATES

At 2.30 p.m., Conway Hall, Red Lion Square, London, WC1.

7th June:

General Assembly

6th September:

General Assembly

6th December:

Annual General Meeting

AT the **LOUGHBOROUGH & DAS** annual Trophy presentation, the trophies were presented by Mrs L. Somerville and Mr D. J. Morgan. Awards were as follows: Mr M. Chafer — Graham Brewer shield (furnished aquaria); Mr G. Howe — Characins and D. J. Morgan trophy, Cichlids and D. Slack Cup (egg-layer broods); Mr D. Lindsey — Single Tail Goldfish, av Pond or River Fish, av Livebearer and K. Jones shield; Mrs D. Lindsey — Corydoras and Fish of the Year trophy; Mr T. Onslow — Pairs and I. Purdy shield for most points at Open Shows. Mrs T. Parry — Barbs; Mr T. Parry — Loach, av Tropical and T. Parry shield; Mr I. Purdy — Danios; Mr G. Taylor — Anabantids,

Rasboras, av Catfish and D. Wood Rose Bowl, Twin Tail Goldfish and Chapman shield for most points at Table Shows.

MRS J. RENTON, secretary of **NEWCASTLE GUPPY & LIVE BEARER SOCIETY**, writes: "I would like to thank all the people who wrote to me regarding the NGLS newsletter and who later became corresponding members of our Society. The NGLS News now travels all over Great Britain as well as to America, Germany, Norway and the Persian Gulf and we are hoping to have entries from these countries at our second 'All Livebearer' Open Show in August. At the moment we have heard that some of the newsletters are going astray in the post, so if anyone has not received either the February or April issues, would they please let me know. Anyone interested in receiving future copies of the newsletter should write to me at 128 Dunstan Tower, Garth 18, Killingworth, Newcastle upon Tyne, NE12 0TX, and I will be pleased to give them all the details."

RESULTS of the **KILLINGWORTH AS (FRAS)** Spring show 1975 were (judges Mr I. Danskin, Mr Redhead of NTFs and Mr J. M. Patterson): the Most points in the Show trophy, Mr & Mrs Hickman (36 points); the Most points for Novices, Mr T. Wynn and Master D. Armittage, both with 10 points, two trophies awarded; the Most points in Table shows, the D. Denton Killi 10 trophy, was won by Mr & Mrs Hickman (87 points); and the Novice trophy was won by Mr T. Wynn (47 points). Remainder of results as follows:

Guppies: 1, Mr I. Hymers; 2, Mr T. Wynn; Coldwater: 1, Mr & Mrs Soarham; 2, D. 3, Mr & Mrs Hickman, av Livebearer: 1, Mr R. Kerr; 2, Mr T. Wynn; 3, Mr I. Hymers; Pairs: 1, Mr & Mrs Hickman; 2, Mr R. Kerr; 3, Mr T. Wynn; Breeders: 1, D. 2, Mr & Mrs Renton; 3, Mr & Mrs Hickman; Rasboras: 1, Mr & Mrs Soarham; 2, D. 3, Mr D. Armittage; Danio: 1, Mr D. Armittage; Furnished jar: 1, Mr & Mrs Hickman; Catfish: 1, Mr R. Kerr; 2, Mr & Mrs Hickman; 3, Mr S. Laidler; Loach: 1, D. 2, Mr & Mrs Hickman; LTIC: 1, Mr T. Wynn; 2, Mr & Mrs Hickman; 3, Mr & Mrs Renton; av Tropical: 1, Mr & Mrs Hickman; 2, Mr D. Armittage; 3, Mr I. Hymers; Corydoras: 1, Mr & Mrs



Hickman; 2. Mr. T. Wynn; 3. Mr. B. Mrs. Raston. Lakes: 1. Mr. B. Mrs. Hickman; 2. Mr. T. Wynn. Characins: 1. Mr. B. Mrs. Hickman; 2. Mr. D. Tiley; 3. Mr. B. Mrs. Spierham. Cichlids: 1. B. 3. Mr. B. Mrs. Hickman; 2. Mr. W. Kidd. Labrids: 1. Mr. L. Gilbert; 2. Mr. D. Ambridge; 3. Mr. B. Mrs. Hickman.

AT the Exhibition of members' fish arranged by SCUNTHORPE & DAS for the benefit of the public, the selection of fish on show was tremendous — over 100 different species of tropical fishes from all over the globe. Colours, shapes and sizes of fish on show varied greatly, from the tiny mosquito fish at about 1in, to the *Perrunichthys perruno* at 15in. A survey was taken where members of the public were asked to write down which fish on exhibition they would most like to keep. The results were collated and some very interesting facts were realised. The most popular fish was a Siamese fighter, second an oscar, third a *Perrunichthys perruno*, fourth an albino clarias catfish. In all, the Exhibition was very successful and several new members were gained by the Society. The Society meets on the second and fourth Monday of the month at the St Pauls Church Hall, Ashby High Street, Scunthorpe, at 7.30 p.m. New members are always made welcome.

AT a recent meeting of MID-SUSSEX AS at Ockley Lodge, Keymer, after the auction of fish and equipment, members were reminded that their assistance would be required at the forthcoming fish exhibition at Whitson for 2 days at the Park Centre, Burgess Hill. The treasurer, Mr. C. Corbin (FBAS), judged the table show of labyrinth, rasboras, danios and minnows. He was very pleased to see such a high standard of fish on the bench and separated the prize winners by half a point only. During the evening members met Miss Cindy from Singapore, who answered questions on her family's fish farm accompanied by a slide show of the farm itself. Further information on the Society may be obtained from Mr. B. Slade at Haywards Heath 33747.

TEN societies visited Salisbury on Sunday 6th April to take part in 'Inter-Club South 75', sponsored by SALISBURY & DAS. There were 130 fish benched in 14 classes (11 tropical and 3 coldwater) and during the judging visitors were entertained with two lectures. Mr. K. Rodgers of the NSPB gave a very interesting and informative talk, assisted by some excellent colour slides, on British birds. Mr. G. Churchill FBAS and BKA gave an excellent lecture, again with colour slides, on killifish. The full results of the show were:

Barbs: 1. Salisbury; 2. Runnymede; 3. Chard. Characins: 1. Runnymede; 2. Basingstoke; 3. Newport. Cichlids: 1. Basingstoke; 2. Salisbury; 3. Chard. Labrids: 1. Basingstoke; 2. Salisbury; 3. Yeovil. Killies: 1. Southampton; 2. Newport; 3. Runnymede. Catfish: 1. Chard; 2. Basingstoke; 3. Portsmouth. Rasboras & danios: 1. Basingstoke; 2. Southampton; 3. Newport. Juv Tropical egg-layers: 1. Southampton; 2. Basingstoke; 3. Chard. Guppies: 1. Basingstoke; 2. Chard; 3. Runnymede. Swords & platies: 1. Basingstoke; 2. Chard; 3. Runnymede. Juv Livebearers: 1. Southampton; 2. Basingstoke; 3. Yeovil. Single tail goldfish: 1. Basingstoke; 2. Salisbury; 3. Runnymede. Twin tail goldfish: 1. Basingstoke; 2. Yeovil; 3. Salisbury. Juv Coldwater: 1. Yeovil; 2. Chard; 3. Portsmouth.

The trophy for Highest Pointed Club went to Basingstoke with a total of 40 points, twice as many as the runner-up, Chard. Members of Salisbury & DAS wish to thank all those Societies and their members for their generous support and for helping to make it such an enjoyable day.

AT the NELSON AS open show held recently at the Civic Centre the judges, Mr. Hall, Mr. Dawson, Mr. Cooper and Mr. Horrocks had 308 entries to view. Best in show was a butterfly fish; the best Nelson exhibit was a harlequin. Thanks go to the manufacturers, Tetra Werke, Datam, King British, Peterama, TFF, Eric Woods (Rosewood) Ltd., Bioquatic, and CNP Pond Products, without whose loyal support the prizes would have been very thin and sparse. Many new faces were seen from among the 94 exhibitors, who are thanked for all their support. Full results as follows:

Guppies: 1. Mr. N. Blanks (Bridlington); 2. Mr. K. Smith (Middleton); 3. Mr. P. Wright (South Shields). Swordtails: 1. 2 & 3. Mr. N. Blanks.

Mollies: 1. Mr. N. Blanks; 2. Mr. R. Kenyon (Hull); 3. Mr. I. Holt (Nelson). Platies: 1. Mr. B. Mrs. Povey (Sheaf Valley); 2. Mr. B. Mrs. Holmes (Castleford); 3. Mr. P. Scott (Nelson). Juv Livebearers: 1. Mr. D. Johnson (Blackburn); 2. Mr. B. Mrs. Povey; 3. Mr. B. Mrs. Richardson (Scarborough).

Small characins: 1 & 2. Mr. B. Mrs. Richardson; 3. Mr. K. Smith. Large characins: 1. Mr. L. Gateney (Bradford); 2. Mr. B. A. Johnson (Hyde); 3. Mr. A. Frisby (Hull). Angels: 1 & 2. Mr. N. Blanks; 3. Mr. Bland (Hull). Dwarf cichlids: 1. Mr. B. Mrs. Walker (Castleford); 2. Mr. P. Walsh (Blackburn); 3. Mr. N. Blanks. Juv Cichlids: 1 & 2. Mr. S. Wolstenholme (Keywood); 3. Mr. A. Frisby. Corydoras: 1. Mr. B. Mrs. Holmes; 2. Mr. B. Mrs. Neeson (Blackburn); 3. Mr. N. Blanks. Catfish: 1. Mr. B. Mrs. Holmes; 2. Mr. W. Hays (Dunelm); 3. Mr. D. Chapman (Nelson). Loaches: 1. Mr. S. Wolstenholme; 2. Mr. M. Cornforth (Bradford); 3. Mr. L. Burrows (Hull). Sharks & loach: 1. Mr. Kennedy (Kilgobry); 2. Mr. D. Suggen (Bradford); 3. Mr. Greenwood (Hull).

Rasboras: 1. Mr. A. Baldwin (Nelson); 2. Mr. D. Chapman; 3. Mr. B. Mrs. Richardson. Danios & minnows: 1. Mr. W. Hays; 2. Mr. B. Mrs. Povey; 3. Mr. B. Mrs. Richardson. Toothcarps: 1 & 2. Mr. B. Mrs. Richardson; 3. Mr. B. Tate (Nelson). Small barbs: 1. Mr. B. Tate; 2. Mr. P. Wolstenholme; 3. Mr. B. Mrs. Holmes. Large barbs: 1. Mr. B. Mrs. Holmes (section winner); 2. Mr. D. Suggen; 3. Mr. P. Walsh. Fighters: 1. Master D. Frisby (Hull); 2. Mr. M. Bullock (Nelson); 3. Mr. P. Wright. Small anabantids: 1. Mr. A. Whiteley (section winner); 2. Mr. B. Mrs. Newton; 3. Mr. W. Hays. Large anabantids: 1. Mr. P. Wolstenholme; 2. Miss A. Gregory (East Lancs); 3. Mr. J. Roberts (Nelson). Juv Tropical: 1. Mr. B. Mrs. Craven (Castleford); 2. Mr. B. Mrs. Ham (Lytham); 3. Mr. Kennedy.

Livebearers poec: 1. Mr. B. Mrs. Holmes (section winner); 2. Mr. T. Marshall (FGA); 3. Mr. B. Mrs. Povey. Egg-layers pairs: 1. Mr. B. Mrs. Walker; 2. Mr. E. Hartley (Nelson); 3. Mr. P. S. Gudgeon (Hyde). Breeders livebearers: 1. Mr. B. Mrs. Povey (section winner); 2. Mr. J. Ridley (Keywood); 3. Mr. B. Mrs. Richardson. Breeders egg-layers: 1. Mr. B. Tate; 2. Mr. J. Ridley; 3. Mr. P. Ridley (Keywood). Common goldfish: 1. Mrs. G. Frisby (Hull); 2. Mr. B. Mrs. North (Hull); 3. Mr. A. Frisby. Single tail fancy goldfish: 1. Mr. R. McKenna (Nelson); 2. Miss Melissa Wolstenholme (Blackburn); 3. Mr. A. Philson (East Lancs). Section winner: 1. Mr. S. Walsh. Juv Coldwater: 1. Mr. S. Walsh; 2. Mr. K. Smith; 3. Mr. A. Frisby. Juniors livebearers: 1. Master Nicholas (Lytham); 2. P. Stott (Nelson); 3. Miss M. Wolstenholme. Juniors egg-layers: 1. Master Nicholas (section winner); 2. Master T. Holmes (Castleford); 3. Miss H. Johnson (Hyde). Ladies: 1. Mrs. A. Johnson (Hyde, section winner); 2. Mrs. G. Frisby (Hull); 3. Mrs. S. Newton (Blackburn).

WE hear from HYDE AS of its very successful 6th annual Open Show held on Easter Sunday; secretary Mr. G. L. Danby reports: "The show was a great success and upheld its reputation of being one of the best shows of the North. The quality of the fish entered was of a



very high standard with many of the 140 competitors exhibiting really superb fish. It was very pleasant to find that the juniors, exhibiting in their own section and the open sections, had swelled their ranks and brought some excellent fish. We were delighted that Mr B. Black of Fleetwood AS was awarded the rare and coveted FNAS Diploma for his outstanding *Barbus orphoides*, which gained 90 points. There were many more visitors this year and if they all take up aquarium fish-keeping, assuming that they have not done so already, then there will be at least another 900 budding aquarists. Despite the higher cost of transport and the influence of another nearby open show and the Scottish Festival we were able to hold a very good entry; the entries in the competitive sections almost reached last year's record of 604. A few of our colleagues from Yorkshire were missed but there were new faces and we were able to warmly welcome for the first time members from the Dunlop, Farnworth, Runcorn, Southport and Warrington Aquarist Societies. Those were just a few of the statistics but a successful show is not judged on figures alone; we are more satisfied by the ever-increasing number of people who really enjoy themselves at our shows on Easter Sunday. The FNAS judges were: Mr P. Moorehouse and Mr Jones (senior class A); Mr F. Toyne and Mr H. Cooper (class A); Mr E. Ward and Mr P. Whelan (class B). The high standard of exhibits must have given them a very exacting task in determining the winning entries and our thanks go to them for a job well done. We extend our thanks and appreciation to all the competitors, visitors and everyone else who helped, in any way, to make the event so enjoyable and interesting for all those who attended. The Best Tropical Fish and the Best Fish of the Show was a *Barbus orphoides* (90 points) exhibited by Mr B. Black, a member of Fleetwood AS. This was an outstanding exhibit and

was awarded the FNAS Diploma, gold label Pin, a beautiful all-glass aquarium donated by K. S. Price Ltd, an annual trophy, a plaque and prizes. The Best Coldwater Fish was a koi carp exhibited by Mr E. Leadbetter who is also a member of Fleetwood AS. The competitor with the most marks was Mr E. Leadbetter who had two firsts, four seconds and three thirds to his credit.

Other results: **Livebearers**, Guppies: 1. Mr & Mrs Burton (73, Blackburn); 2. Mr & Mrs Greenhalgh (72, Bury); 3. Miss M. Burton (69, Blackburn). **Platyfish**: 1st and section winner, Mr & Mrs Bond (74, Sandgrounders); 2. Mr D. A. Wilkinson (71, Fleetwood); 3. Mr W. Bamber (69, Sandgrounders). **Swordtails**: 1. Mr H. Chadwick (72, Oldham); 2. Mr E. Lees (71, Wythenshawe); 3. Mr L. Burt (67, Wythenshawe). **Mollies**: 1. Mrs F. Carroll (73, Dunlop); 2. Mr E. Leadbetter (70, Fleetwood); 3. Mr G. A. Wilkinson (69). **Ass:** 1. Mr & Mrs Bond (70); 2. Mr & Mrs Newton (69, Blackburn); 3. Mr W. O. Hadow (67, Hyde).

**Barbs**, Small: 1. Mr & Mrs Stock (74, Farnworth); 2. Mr & Mrs Crocker (73, Middleton); 3. Mr T. Hampton (71, Dunlop). **Large**: 1st and section winner, Best Tropical Fish, Best Fish in Show and FNAS Diploma winner, Mr E. Leadbetter (80); 2. Mr & Mrs O. Bond (74); 3. Mr T. Hampton (72). **Chickadees**, Small: 1. Mr & Mrs Muckle (76, Sandgrounders); 2. P. & H. Bachelor (75, Lymington); 3. Mr & Mrs R. Houghton (73, independent). **Large**: 1st and section winner, Mrs B. Booker (82, Morecambe Bay); 2. B. & J. Mr E. Leadbetter (75 and 73). **Anabantids**, **Fighters**: 1. Mr J. Sate (73, Sandgrounders); 2. B. & G. Hoivord (72, Morecambe Bay); 3. Mr M. Morgan (70, Camelford). **Ass:** 1st and section winner, Mr R. I. Payne (75, Morecambe); 2. Mr E. Seymour (74, Morecambe); 3. M. & G. Wilmson (73, Hyde). **Cichlids**, Small: 1. Ms. Gullane (76, Burton); 2. Mr L. Mynerd (75, Oatman); 3. Mr K. Wright (74, Sandgrounders). **Large**: 1st and section winner, P. & H. Bachelor (78); 2. Mr S. Hooton (77, Sandgrounders); 3. Mr D. Grogan (76, Blackburn). **Angels**: 1. Mr A. Avon (72, Ashton); 2. Mr D. Grogan (70); 3. Mr K. Sey (69, Dunlop).

**Corydoras**: 1. Mr & Mrs Bond (73); 2. Mrs Armstrong (72, Heywood); 3. Mr E. Leadbetter (71). **Loaches**: 1st and section winner, Mr T. Hampton (75, Dunlop); 2. Mrs B. Booker (74, Morecambe Bay); 3. Mr E. Leadbetter (71). **Ass:** 1. Mr & Mrs Bradshaw (73, Sheath Valley); 2. P. & H. Bachelor (71); 3. Mr C. H. Witney (70, Accrington). **Carp**, B minnows, sharks and flying fish: 1st and section winner, Mr T. Hampton (77); 2. Mrs S. Seymour (75); 3. Mr T. Hampton (74). **Rasbora**, danio and minnows: 1. Mr W. Bamber (73, Sandgrounders); 2. Mr T. Hampton (70); 3. Mr J. Sate (68). **Kribiahi**: 1st and section winner, Mr E. Lees (77, Wythenshawe); 2. Mr P. Squirell (76, Wythenshawe); 3. Mr P. Armstrong (73).

**Pairs**, **Egg-layers**: 1st and section winners, Miss A. Gregory (77); 2. Mr & Mrs Muckle (75); 3. Mr R. A. Johnson (74, Hyde). **Livebearers**: 1. B. & J. Mr & Mrs Marshall (76 and 74, Blackburn); 3. Mr E. Seymour (70). **Breeders**, **Egg-layers**, **ass:** 1.

Mr E. Leadbetter (72); 2. Mr & Mrs Davies (63, Dunlop). **Egg-layers**, **hard**: 1st and section winner, Mr M. E. Garvey (77, Basingstoke); 2. Mr S. Hooton (74); 3. Mr R. I. Payne (73). **Livebearers**: 1. Mr & Mrs G. Bond (71); 2. Mr R. Cooper (65, Hyde); 3. Mr T. Brown (60, Warrington).

**Salt water**, **ex marine fish**: 1st and section winner, Mr A. Walker (75, independent); 2. Mr O. Buckley (72, independent); 3. Mr P. Armstrong (71, Heywood). **Tropical Fish**, **ass:** 1st and section winner, Mr T. Hampton (78); 2. Mr E. Leadbetter (73); 3. Mr P. Sime (71). **Mini jars**: 1st and section winners, Mr & Mrs Cobb (77, Belle Vue); 2. Mrs B. Sey (76); 3. Mrs Hyam (Lyham). **Juniors**, **Ass**, **exhibit**: 1st and section winner, Mr T. Brown (76, Warrington); 2. Mr B. Lees (71); 3. Miss J. Givver (70, Heywood). **Coldwater**: 1. B. & J. O. Valentine (75 and 74, Northwich); 2. Mr & Mrs Cobb (73, Bury). **Goldfish**, **ass:** 1. B. & J. O. Valentine (75 and 73, Accrington); 2. Mr E. Leadbetter (75). **Ass:** 1st and section winner and Best Coldwater Fish, Mr E. Leadbetter (77); 2. Mr G. Harvey (76); 3. Mr & Mrs Cobb (73).

**THE SOUTHAMPTON AS Open Show** was supported by 613 entries in the 30 classes on the schedule and despite the unforeseen chilly day that was Easter Monday competitors travelled from a very wide area including London, Cardiff, Rhondda and Orpington. The Best Fish in Show was a phuntino barb entered by Mrs P. Newbury (Gosport). Full results as follows:

**Ass:** 1. Mrs P. Newbury (Gosport); 2. Mr R. H. Hard (Hastings); 3. Mrs P. Jupp (Gosport). **B**: 1. Mrs P. Newbury (Gosport, B. phuntino); 2. Mrs B. Crickshank (Saling, B. crispus); 3. Mr T. Burvill (Basingstoke, B. schuberti). **Bc**: 1. Mr R. G. Smith (Basingstoke, B. ophiodon); 2. Mr K. A. Hillier (Newbury, B. everetti); 3. Mr R. F. Adams (Salisbury, B. blennioides). **Characins**: 1. Mr C. Turner (Cardiff, N. unilaminiatus); 2. Mr C. Fraser (Basingstoke, N. palmeri); 3. Mr K. A. Hillier (N. palmeri). **Hyphacanthopoma**, **Hemigrammus**, **Chirocentrus**: 1. Mr C. Turner (H. minor); 2. Mr T. Burvill (Basingstoke, H. minor); 3. Mr M. Strange (Basingstoke, H. pulcher). **Dc**: 1. Mr R. Orslove (Kingsclere); 2. Mrs P. Newbury (Gosport); 3. Mr T. Taylor & family (Basingstoke). **Dc**: 1. B. & J. O. Valentine (Basingstoke, A. apollis and A. ottomani); 2. Mr R. Brown (A. ocellatus). **Dc**: 1. Mr A. Treacy (Gosport, M. veniflorus); 2. Mr J. Jupp (Gosport, Pa. fuscus); 3. Mr J. Bailey (Gosport, Pa. novemfasciatus). **Dc**: 1. Mr R. F. Adams (Salisbury, Cr. lepidota); 2. Mr W. Knight (Gosport, red devil); 3. Mrs M. Netherall (Cardiff, T. mariae); 4. Mr T. Taylor (Cob. asphrenoides); 2. Mr D. Wareham (Cardiff, climbing perch); 3. Mr R. J. Canning (Newbury, C. labiosa). **F**: 1. Mr J. Jupp (madaka); 2. Mr A. Weaire (Southampton, lamprey); 3. Mr S. Crabtree (Havant, Florida flag). **G**: 1. Mr T. A. Crickshank (Ln. albanus); 2. Mr R. J. Canning (Lo. fallax); 3. Mr A. Weaire (M. poecilus). **H**: 1. B. & J. O. Valentine (B. conchus, C. schartzi and C. watsoni); 2. 1. Mr E. Moulden (Kingsclere, R. hemper); 2. Mrs P. Newbury (Gosport, R.



[illegible]

**DORCHESTER & DAS** have enjoyed a return visit by Mr Jones of Southampton, who spoke on general fishkeeping and breeding topics. Slides of the annual Home Furnished Aquaria competition won by Mr N. Derrick (2 Mr P. Jeffery, 3 Mr R. Christopher) have also been seen. The junior winner was Master C. Hunt (2 Master R. Thompson). Table show results have been:

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MEMBERS of the **SUFFOLK A & PA (FBAS)** broke new ground when they held their April meeting. They have moved to a more spacious room in the Sporting Farmer where meetings are to be held in future. Colourfish 75 presentations were discussed fully and voting forms were distributed for the nomination and subsequent election of the new committee at the

**AGM.** A record-breaking auction was then held with members bidding for plants, fish and fish food. Then the main item of the evening was an informative lecture given by the president of the Society on importing fish into the country.

THE best exhibit at the **BRISTOL TFC** Open Show was entered by Mr R. G. Laurence (Bristol TFC) who also received the highest individual points and was awarded the gold pin. The home team were the highest pointed society (2, Bath AS, 57; 3, Newbury AS, 30; 4, Kingsclere, 21). Other results awarded by the Severnide Aquarists Association's panel of judges were:

Fighters: 1 B 3, Mr. A. Toose; 2, Mr. R. Rowell, Labyrinth; 1, Mr. & Mrs. A. Dodson; 2, Mr. T. Taylor; 3, Mr. R. Canning, 1, Mr. R. Canning; 2, Mr. L. Pappas; 1, Mr. R. Lawrence, HemiGlobe; 3, R. Hypocrite, Labyrinth; 1 B 2, Mr. R. Fowler; 3, Mr. K. Taylor, and Characters: 1, Mr. & Mrs. Dodson; 2 B 3, Mr. I. Ditley, Angela; 1, Mr. C. Coates; 2, Mrs. M. Graham; 3, Mr. T. Taylor, Dwarf children; 1, Mr. & Mrs. Dodson; 2, Mr. Jarvis; 3, Mr. R. Chappell, Shift Valley children; 1, Mr. R. Canning; 2 B 3, Mr. F. Cridge, ase Cichla; 1, Mr. R. Lawrence; 2, Mr. G. Greig; 3, Mr. R. Boots.

Corydoras & Brochis: 1 Mr T.  
Taylor; 2 Mrs K. Pease; 3 Mr I.  
Littleton, soy Catfish: 1 & 3 Mr R.  
Lawrence; 2, Mr K. Owen, Danios,  
rasboras, minnows: 1 & 2, Mr F.  
Timmins; 3, D. & R. Clark, Bettas,  
Tooches, sharks, eels: 1, Mr R. Law-  
rence; 2 & 3, Mr F. Timmins.

Mollies: 1, Mr. R. Cripps; 2, Mr. T. Taylor; 3, Mr. R. Towler. Swordtails: 1, Mr. R. Lawrence; 2, Mr. R. Onslow; 3, Mr. R. Canning. Plaies: 1, Mr. R. Onslow; 2 & 3, Mr. L. Littleton. Guppies (male): 1 & 2, Mr. J. Ferguson; 3, D. & R. Clark. Guppies (female): 1, D. & R. Clark; 2, Mr. B. Webb; 3, Mrs.

**K. FROG.**  
 K. Kitchin: 1. Mr R. Chapman; 2. Mr R. Toose; 3. Mr S. Poole, avy. Toose: 1. Mr S. Oselow; 2. Mr M. Thorne; 3. Mrs S. Jarrold. Breeders: 1. Mr Chapman; 2. Mr Toose; 3. Mr Oselow. Brooders: 1. Mr R. Toose; 2. Mr S. Poole; 3. Mrs K. Martin. Sexed pairs: 1. Mr K. Owen; 2. Mrs M. Graham; 3. Mr F. Cripps. av. Egg-lay. Junior: 1 & 2 S. Owen; 3. Sargent children. av. Litter: 1. Mr S. Oselow; 2. Sargent children; 3. Mr F. Cripps. av. Philop: 2. Mr D. Wood. Goldfish: 1. Shalunkiki; 1. Mr P. Moxham; 2. Mr D. Sullivan; 3. Mr J. Sutton. av. Pond: 1. River; 1. 2 & 3. Mr R. Lawrence.

**RIVERSIDE** AS report a very successful open show. Thanks were due to all the exhibitors from near and far and to FBAS judges Messrs. Brown, Blake, Tomkins, Nutt, Carney, Stillwell and Ryder. Winner of the FBAS Championship trophy and Best Fish in Show was Mr M. West.

of KDAS with a *Phenacogrammus interruptus* (class Cr). Winners of the trophy for Highest Pointed society were Basingstoke AS. Class winners were:

Ak-1 Mrs S. Hedges (BGAS); 2 Mr J. Lewis (Riv.); 3, Mr J. Shepherd (Runnymede); Ag-1 Mr K. Lewis (Runnymede); 2, Mr T. Kudorovich (BIAS); 3, Mr N. Paine (Haslemere); Bk-1 Mr G. Newell (Haslemere); Mr T. MacDonald (BGAS); Mr D. Kelly (Runnymede); Ba-1 Mr J. Hughes (Reamington); 2, Mr M. West (KDAIS); C-1 Mr J. Jackson (Basingstoke); 2, Mr R. Warriss (C); 3, Mr N. Savage (Basingstoke); Co-1 Mr T. Fraser (Basingstoke); 2, Mr G. Lucas (Sudbury); 3, Mr E. Jackson; Gb-1 Mr G. Lucas; 2, Mr E. Farthing (Sudbury); 3, Mr N. Savage; Hd-1 C. A. W. Wilson (Dunsfold); Mr J. Packham (Hendon); 3, Mr C. Klingberg (Runnymede); Da-1 Mr T. Jones (SLAS); 3, Mr J. Jackson; 3, Mr R. Taylor (Haslemere); E-1 Mr J. Newbery (Gosport); 2, Mr F. Pollard (KDAIS); 2, Mr T. Fraser (Basingstoke); Oc-1 Mr K. Taylor (Hayward); 2, Mr P. Boyd (Sudbury); 3, Miss F. W. Boyd (Sudbury); Mr D. Warriss (Cambridge); 3, Mr T. Taylor (Sudbury); Ea-1 Mr T. Taylor; 2, Mr A. Brenneaux (Surrey); 3, Mr T. Marshall (Basingstoke); Eb-1 Mr T. Taylor (Sudbury); 3, Mr N. Savage; F-1 Mr O. Taylor; 3, Mr J. Jackson; 2, Gina Sandford (Reigate & Redhill); 3, Mr J. Myrtle (Ealing); G-1 Mr E. Fantham; 2, Mr & Mrs Murphy; 3, Mr J. Moore (W); H-1 Mr F. Joyce; 2, Mr T. Fraser (Basingstoke); I-1 Mr West (KDAIS); Ha-1 Mr K. Taylor; 2, Mr V. Valley (Ealing); 3, Mr T. Moye; 3, Mr E. Fantham; 2, Mr T. Newberry; 3, Mr E. Taylor; 3, Mr T. Newberry; Li-1 Mr K. Usher (Donscaster); 2, Mr T. Taylor; 3, Mr M. Sandford (Reigate & Redhill); La-1 Mr J. West (Cardiff); 2, Mr M. West (KDAIS); 3, Mr J. Brown (SLAS); Mr-1 Mr P. Brown (Southampton); 2, Mr T. Burvil (Bristol); 3, Mr Canham (Romford & Beccles); Ms-1 Mr J. Packham (Hendon); 2, Mr D. Warriss (C); 3, Mr E. Fantham; NIM-1 Mr C. Klingberg; 3, Mr J. Jackson; 3, Mr N. Savage; NOT-1 b 2, Mr K. Usher (Donscaster); 3, Mr Newbery (London).

Q. 1. Mr. T. Fraser: 2, 3, Mr. A. Noronha (Orpington): P. 1 & 2, Mr. A. E. Noronha: 3, Mr. B. Mrs. Murphy: 4, 5, 6, 7, 8, Mr. K. Usher: 3, Mrs. A. E. Noronha: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822,

Winner of the Junior Trophy was Neil Savage of Basingstoke. Best exhibit by a Lady was won by Mrs S. Hedges of Bethnal Green.

THE fourth annual Open Show held by **BLAKEBOROUGH AS** attracted over 500 entries. The best fish in show award went to

a shark entered by Mr D. Suggen of Bradford & DAS. Mr M. Wild of Accrington received the award for best exhibit for his furnished mini-jar. Class results were:

Guppies: 1. Mr L. Smith (Castleford); 2. D. B. M. Laycock (Sheaf Valley); 3. Mr & Mrs S. Mason (Scunthorpe). Swordtails: 1. Mr W. F. Holmes (Hull); 2. Mr N. Blunden (Bridlington); 3. D. B. P. Birdall (Aireborough). Platys: 1. Mr & Mrs Pavey (Sheaf Valley); 2. Mr & Mrs Holmes (Castleford); 3. D. B. M. Laycock. Mollies: 1. Mr N. Blunden; 2. Mr D. Stead (Swillington); 3. Mr B. M. Emerson, adv. Livebearers: 1. Mr D. Stead; 2. Mr M. Walker (Swillington); 3. Mr D. Hixlop (Swillington).

Characins, small: 1. D. B. M. Laycock; 2. McArdle & Kirk (Castleford); 3. Mr & Mrs Fletcher (Doncaster). Large: 1. Mr L. Gatenby (Bradford); 2. Mr & Mrs Roberts (Doncaster); 3. Mr A. Chadwick (Oldham). Barbs, small: 1. Mr & Mrs Snook (Farnworth); 2. Mr & Mrs Green (Castleford); 3. McArdle & Kirk. Large: 1. Mr & Mrs Coppy (Doncaster); 2. Mr Jankinson (Huddersfield); 3. Mr & Mrs Roberts. Gichids, small: 1. Mr D. Walsh (Blackburn); 2. Mr Blundell (Doncaster); 3. McArdle & Kirk. Large: 1. B. 3. Mr S. Wolsstenholme (Haywood); 2. Mr F. Smith (Horsforth). Angels: 1. Mr D. Gregson (Blackburn); 2. Mr Carrick (Scarborough); 3. Mr N. Blunden. Cichlids: 1. Mr G. Gillespie (Castleford); 2. McArdle & Kirk; 3. Mr & Mrs Seapay (S. Humberside). adv. Anabantids: 1. Mr & Mrs Green (Castleford); 2. Mr K. Lancasters (Doncaster); 3. Mr & Mrs Rawlins (Castleford). Fighters: 1. Mr & Mrs Feasey (Doncaster); 2. Mr L. Smith (Castleford); 3. Stanhill & Ramsey (Castleford).

Danos: 1. Mr & Mrs Coppy; 2. Mr & Mrs Norton (S. Humberside); 3. Stanhill & Ramsey. Monos: 1. 2. B. 1. Mr & Mrs Roberts (Doncaster). Rabbits: 1. Mr & Mrs Coppy; 2. Amy Hixlop; 3. Mr & Mrs Feasey. Sharks: 1. B. 2. Mr D. Suggen (Bradford); 3. Mr D. Gregson (Blackburn). Flying fish: 1. Mrs P. Hixlop; 2. Mr M. Wild (Accrington); 3. Mr Karmes (Scarborough). Killies: 1. Mr M. Walker (Swillington); 2. Mr & Mrs Brett (Redford & DAS); 3. Mr D. Stead.

Corydoras: 1. Mr & Mrs Fletcher (Doncaster); 2. Mr K. Lancasters; 3. Mr & Mrs Danes (Doncaster). adv. Catfish: 1. Mr & Mrs Holmes (Castleford); 2. Mr B. Wessell; 3. Mr Blundell. Loach and betta: 1. Mr & Mrs Bux (Southorpe Museum); 2. Mr & Mrs Burton (Blackburn); 3. Mr Blundell.

Poies, livebearers: 1. Mr D. Stead; 2. Mr & Mrs Pavey; 3. McArdle & Kirk. Egg-layers: 1. Mr & Mrs King (Doncaster); 2. Mr & Mrs Fletcher (Doncaster); 3. D. B. M. Laycock. Breeders, livebearers 1-10: 1. Mr & Mrs Newton (Blackburn); 2. Mr M. Walker (Swillington). Livebearers 11-20: 1. Mr & Mrs Pavey; 2. Mr & Mrs Scott (Sheaf Valley); 3. Mr D. Stead (Swillington). Breeders, egg-layers 1-10: 1. Mr & Mrs Scott; 2. Mr & Mrs Fletcher; 3. Mr J. Riddley (Haywood). Egg-layers 11-20: 1. B. 2. Mr & Mrs Fletcher; 3. Mr M. Garvey (Sheafborough).

Common goldfish: 1. Mr & Mrs Wolsstenholme; 2. Mrs Frisby (Hull); 3. Mr & Mrs Aert (Hull). Fancy goldfish: 1. Mr M. Wild (N. Goldfish); 2. Mr & Mrs Wolsstenholme; 3. Miss Burton (Blackburn). adv. Coldwater: 1. Mr L. Smith (Castleford); 2. Mr A. Frisby (Hull). adv. Tropical: 1. Mr D.

Stead (Swillington); 2. Mr & Mrs Bux (Southorpe Museum); 3. Mr McArdle & Kirk. Mini-jars: 1. Mr M. Wild (Accrington); 2. Mr N. Holden (Accrington); 3. Mr & Mrs Chester (Redford).

## In Brief...

... AT the last meeting of the **ASSOCIATION OF SOUTHERN AQUATIC SOCIETIES** it was decided that all monthly meetings would now be held at the headquarters of Bournemouth AS at Kinson. Mr R. Matley, the Society's own secretary, is now also the secretary for ASAS and Mr B. Coombes is show secretary.

... **BRIGHTON & SOUTHERN AS P.R.O.**, Mr J. Smith, reports a very good attendance at the Society's April meeting with still more new members joining. A tape and slide lecture on barbs by Mr P. Ginger was enjoyed by all together with a very good table show, classes 0

**MRS. J. RENTON**, secretary to the **NEWCASTLE GUPPY & LIVEBEARER SOCIETY**, writes: "I recently received a letter from Herr Günter Entlinger telling me about the German Livebearer Association Open Show this year. The show, for breeding pairs only, will be held from the 3rd till 5th October 1975, and all breeders and fanciers of livebearers may compete. All standards of the species *Xiphophorus* and *Mollisias* are admitted. Foreign competitors pay no entry fee, but all foreign entries are auctioned after the show. Entries are accepted until 1st September 1975, fish to arrive no later than 2nd October. Further details and entry forms are available from: D.G.L.Z., 11, Intern. Leistungsschau, Herr Hans Kröper, Glückstrüder Weg 75 (Schule am Baris) 2000 Hamburg 53, West Germany. Members of the NGLS will be sending fish to this Show and I hope that other livebearer enthusiasts in this country will also support this venture."

and P (guppies) and G (catfish), judge, Mr R. Baker. Results of table show: O & P: 1 & 2. Mr D. Mann (78 & 76); 3. Mr J. Smith (75). G: 1. Mr R. Shankland (76); 2. Mr D. Goodchild (73); 3. Mr G. Clarke (71).

... **HALIFAX AS** are holding their Open Show later this year, on 9th November at the Forest Cottage Community Centre (see Dates for Your Diary). There will be classes for individual furnished aquaria, plants and marines.

... **MID-CORNWALL AS** members have thoroughly enjoyed a lecture on filtration by Roy and Gwen Skipper. Results of the Society's first table show are: 1. Mr R. Lee (brass tetra); 2. Mr C. J. Swanhill (sailfin mollie); 3. Mr G. Hall (Rasbora jacobsoni). The show was judged by Mr G. Jackson and while the show was being judged the members heard a tape/slide lecture on killifish. New members would be made most welcome. The Society meets on the first Wednesday of the month (secretary is Mr B. G. Lean, 5, Hillcrest, Shortlandsend, Truro: Truro 4092).

... **THE EAST LONDON A & PA** have had very interesting meetings of late and there are very good speakers booked for future meetings. Anyone interested in fish will be made most welcome.

... **NEW SOCIETY KINGSLERE & DAS (FBAS)** meet every second Tuesday at The Crown public house — new members are assured of a warm welcome. Club members are showing with success at open shows and table shows are keenly contested. Mr W. Duncan won in the recent table show for barbs (2 & 3, Mr Mousley). A recently held Disco organised by the club also proved very successful.

... **EALING & DAS** are planning well in advance and are pleased to announce a grand Bring and Buy Evening on 18th November.



... **UXBRIDGE & DAS** have decided not to hold an open show this year (1975); an Exhibition of Fishkeeping will be held in conjunction with Hayes Carnival on Saturday, 12th July in Hayes Park.

... **DONCASTER & DAS** are holding their 6th annual Open Show on Sunday, 26th October at the Brodsworth Miners Welfare Hall, Welfare Road, Woodlands, nr. Doncaster. There is ample parking space and the hall is situated in a park with swings for the children. There is also a Leisure Centre close by for swimming. Benching is from 12 noon until 2.15 p.m. and judging starts at 2.30 p.m. promptly. Details from Mr A. Feasey, 20 Hills Close, Sprotborough, Doncaster DN5 7NW, South Yorks.

... **TWO** recent talks at meetings of **BOURNEMOUTH AS** have proved informative and helpful to both newer members to the hobby and more experienced ones. Mr B. Coombes spoke on aquatic plants and Mr M. Haskins, a member of the Society, described how to prepare fishes for show. Table show results have been: a.v. Characins: 1 & 3, Mr Devlin; 2, Mr Bebb. Tropical pairs: 1, Mr Cox; 2, Mr Bebb; 3, Mr Jeffery. Shubunkins: Mr Travers. Mollies: 1 & 2, Mr Bebb. Coldwater breeders, Mrs Bebb. av Plant: 1, 2 & 3, Mr Chatfield.

... **CORBY & DAS** are arranging a 'Mini-Show' (10 classes), for members of Northamptonshire societies only, at the Corby Leisure Activities Exhibition, Civic Centre, Corby, on 24th August.

... **MEMBERS OF HASTINGS & ST LEONARDS AS (FBAS)** enjoyed a most entertaining slide and lecture show given by Mr David Barratt, who gave a first-class account of his personal experiences in collecting marine fishes off the coral reefs. Annual trophies have been awarded to: Mrs Adams (Chissell Cup); Mr T. McCormick (Home Aquaria); Mr P. Martin

(Member of Year); Mr G. Brookes (Christine Reef Cup); Miss M. Grieg (Singapore Bowl); Mrs Pannell (aov); Miss A. Adams (Grieg Corydoras Cup); C. Christian (Grieg Junior Cup).

... **THE FANCY GUPPY ASSOCIATION** is having a new 'push' to bring their stock control organisation into greater use by members. Stock controller Mr R. Francis (60 Bronieslyn Terrace, Trecynon, Aberdare, Mid. Glam.; phone Aberdare 3618) plans to compile a list four times a year showing fish that will be available during the following 2-3 months, giving shape, colour/pattern and the breeder's address from

whom the fish can be obtained. By this means members can obtain really first-class stock for rearing and breeding.

... **THE BRITISH KOLKEEPERS' SOCIETY AGM** is being held this month at the Post House Hotel, Leicester on Sunday 22nd June. Enquiries should be directed to Mrs H. M. Allen, 1 Anthony Close, Peterborough, PE1 3XU (phone 0733 67997).

... **THIRTY** members of **GLOUCESTER AS** very much enjoyed a slide/tape lecture of discus loaned by Hendon AS and operated by Mr C. Freshney. The Society have recently won a six-a-side show held at Evesham.

## Dates for Your Diary

1st June, **ACCRINGTON & DAS** Open Show, Antley Methodist Church Hall, Blackburn Road, Accrington (new, larger premises). Details: Mr S. Walsh, 133 Lammack Road, Blackburn, Lancs.

1st June, **NORTHWICH & DAS** Open Show, Hartford Secondary Boys School, Chester Road, Hartford, Northwich. FBAS Shandwick. Details: Mr N. R. Thompson, 54 Granamere Road, Frodsham, via Warrington, Lancs, WA6 7LG; phone Frodsham 22745.

1st June, **COTSWOLD AS** 1st Open Show, Rodbrough House, Youth Centre, Nelson Street, Stroud, Gloucester. Schedules: Mr K. Hodges, 31 Horns Road, Stroud, Gloucester.

1st June, **LOUGHBOROUGH & DAS** Open Show, Burrell Community Centre, Thorpe Hill, Loughborough, Leics. Schedules: Mr I. Purdy, 10 Cleveland Road, Loughborough, Leics. LE11 2SP; phone 61719.

1st June, **NEWCASTLE TROPICAL FISH SOCIETY** Open Show, St John's Church Hall, Westgate Road and Grainger Street junction, Newcastle-upon-Tyne. Schedules shortly: Mr L. R. Lawton, 84 Grosvenor Road, Jesmond, Newcastle-upon-Tyne 2.

1st June, **HAVANT & DAS** Open Show, The Merchiston Hall, Hornsea, Hants. Schedules: Mr K. Taylor, 3 Hollybank Close, Coppleton, Hants; phone Roman Way 4140.

1st June, **FBAS** General Assembly, 2.30 p.m., Conway Hall, Red Lion Square, Holborn, London, WC1.

8th June, **BRITISH CICHLID ASSOCIATION** Annual Convention, Brimingham, Tickets (including lunch) £2.00. Details: Mr T. Green, 12 Greenfield Meadow, Chinnor, Oxford, OX9 4JG.

8th June, **SHERWOOD AS** Open Show, The Thoresby Miners Welfare Hall, Edwinstowe, Gt. Yarm. Mansfield, Notts. Schedules: Mr J. Iggles, 26 Marple Avenue, Mansfield, Woodhouse, Notts; phone Mansfield 32249.

14th June, **DUNMOW & DAS** Open Show, Details: Mr A. V. Galt, 26 River View, Brantree, Essex, CM7 7HX.

14th June, **LANTWIT MAJOR AS** (CNAA/FBAS) Open Show, The Town

Hall, Llantwit Major, Quality plaques all classes. Schedules (Merch): Mr J. J. Edwards, Glaston, Mill Park, Llandethan, Cowbridge, Glam, CF7 7BG.

14th June, **KINGSTON & DAS** Open Show, Sutton Adult School, Benhit Avenue, Sutton, Surrey. Details: Mr D. J. Mackay, 12 Victoria Road, Twickenham, Middx; phone 01-672 0632 daytime till 6.0 p.m.

15th June, **SALISBURY & DAS** Open Show, City Hall, Salisbury, (FBAS Championship Class V&J). Schedules: Mr R. F. Adams, 26 Empire Road, Salisbury, Wilts SP2 5DF.

15th June, **FOA NORTH WEST SECTION** Open Show, Schedules: Mr D. Ormerod, 55 Barnes Avenue, Rawtenstall, Rossendale, Lancs.

15th June, **SWILLINGTON AS** Open Show, John Smeaton School, Smeaton Road (off York Road), Leeds 15. Details: Mr & Mrs R. Hislop, 1 Fg Tree Gardens, Moortown, Leeds, LS17 7EG.

15th June, **GOSPORT & DAS** Open Show, Details: Mr J. Clarke, 37, Rosner Close, Rosner, Gosport; phone Fareham 86108.

22nd June, **ALFRETON & DAS** Open Show, Adult Education Centre, Alfreton Hall, Alfreton, Details: Mr B. Hickling, Parkview, 13 Caplice Drive, Eastwood, MG16 3FW; phone 07737 5104.

22nd June, **THE BRITISH KOLKEEPERS' SOCIETY AGM**, The Post House Hotel, Leicester.

22nd June, **SOUTH SHIELDS AS** Open Show, Bellingbroke Hall, Details: Mr P. Wright, 11 Baston Crescent, Town End Farm, Sunderland, Tyne/Wear.

28th June, **MAILSEA & DAS** Open Show, Schedules: Mr D. Kenwood, 90 Slade Road, Portishead, Bristol; phone Portishead 848947.

28th June, **RUNNYMEDE AS** Open Show, St. Anne's Middle School, Clare Road, Stanwell, Staines, Middx. Details: Mr D. Riley, 129 Kingcroft Avenue, Northolt, Middlesex, UB8 6NY; phone 01-845 4169.

29th June, **DUNLOP AS** Open Show, Works Canteen, Dunlop Limited, Speke Hall Road, Speke, Liverpool 24, 39 classes (FNAS).

Schedules: Mr T. Hamerton, 2 Modeline Street, Liverpool: 051-708 5509.

28th June, **LINCOLN & DAS** Open Show, The Drill Hall, Broadgate, Lincoln. Details: Mr G. S. Hill, c/o 30 Richmond Road, Lincoln LN1 1LQ.

30th July, **CARDIFF AS** Open Show, St Margaret's Church Hall, Roath, Cardiff. Details: Mr B. Guy, 30 Llanterston Road, Rumney, Cardiff.

8th July, **BILLINGHAM AS** Open Show, Community Centre, Billingham. Details: Mr E. N. Bowden, 12 Stoneleigh Walk, Knowle, Bristol BS4 2RL (phone: 775359).

6th July, **LYTHAM AS** Open Show, Ansdell Institute, Woodlands Road, Ansdell, Lytham-St-Annes, Lancs. Schedules: Mr Peter Ham, 1 Wyndene Grove, Freckleton, Preston, Lancs. phone Freckleton 633162.

6th July, **THORNE AS** Open Show, Grammar School, St. Nicholas Road, Thorne, nr. Doncaster, Yorks. Details: Mr C. Jewison, 94 Hawthorne Road, Thorne; phone Thorne 813041.

12th July, **UXBRIDGE AS** Exhibition of Fishkeeping (Hayes Carnival), Hayes Park.

12-13th July, **ROMFORD & BEACONSFIELD AS** Open Show (Dagenham Town Show), Central Park, Dagenham, Essex. Schedules: Mr W. Baker, 243 Rush Green Road, Romford, Essex.

26th July, **SANDGROUNDS' AS** Open Show, Meols Cop School, Meols Cop Road, Southport. Details: Mr G. A. Waterhouse, 23 Moss Lane, Southport, Merseyside, PO9 7QR.

20th July, **AIREBOROUGH & DAS** Open Show, Menston Community Centre, Main Street, Menston. Schedules: Mr J. S. Hall, 34 Salisbury Street, Cawley, Pudsey, LS28 6PN; phone Pudsey 34609.

20th July, **BRIGHTON & SOUTH-EAST AS** Open Show and Exhibition, St Barnabas Hall, Seaville Road, Hove, Sussex. Details: Mr B. Sayers, 11 Seaview Estate, Southwick, BN4 4AS (phone: Brighton 693851).

16th July, **GOLDFISH SOCIETY OF GREAT BRITAIN** Meeting, Conway Hall, Red Lion Square, Holborn, London, WC1, 2.00 p.m.

27th July, **RUNCORN AS** Open Show, The Grange Youth Centre, Grange Way, Runcorn. Schedules: Mr J. V. G. Drake, 50 Cuckoo Close, Palaeofields, Runcorn, WAT 20P.

2nd August, **BLACKPOOL & FYLDE AS** Open Show, Blackpool Boys' Club, Laycock Gate, off Devonshire Gate, Blackpool, 2.00 p.m. Details: Mrs. O. Barlow, 13 St Chad's Close, Poulton-le-Fylde, Lancs.

3rd August, **TONBRIDGE & DAS** Open Show, Details: Mr S. Feast, 19 Eastley Road, Sevenoaks, Kent, TN11 1XX; phone Sevenoaks 54092.

4th-2nd August, **PORTSMOUTH AS** Open Show and Exhibition, Wesley Central Hall, Fratton Road, Portsmouth. Schedules: 2nd August: judging, 3rd August: open to public, 4th-2nd August: prizegiving. 3rd August: Schedules: Mr J. Stillewell, 34 Salcombe Avenue, Copnor, Portsmouth, Hants. PO3 6LD.

10th August, **GRIMSBY & CLEETHORPES AS** Open Show, Memorial Hall, Cleethorpe. Schedules: Mr T. P. Walker, 51 Cheshire Walk, Grimsby, 5th Humberdale; phone Grimsby 7518.

14th-16th August, **MIDLAND AQUATIC FESTIVAL 76**, Singsley Hall, 3000 Street, Birmingham. Details: Mr J. Wills, 120 Franklin Road, Kings Norton, Birmingham 30 (phone: 021-458 5455).

17th August, **HUDDESFIELD TFS** Open Show, Paddock Civic Youth Centre, Beach Street, Paddock, Huddersfield. Details: Mr D. Hough, Flat 5, Sycamore Court, Sycamore Avenue, Golear, Huddersfield; phone Huddersfield 57147.

17th August, **NEWCASTLE GUPPY & LIVEPLANT SOCIETY** Open Show (the only all-overseas Open Show). Details to follow.

17th August, **OLDHAM & DAS** Open Show, Werneth Park, Oldham. Schedules: Mr A. E. Chadwick, 341 Broadway, Chadderton, Oldham, Lancs OL3 8RN.

24th-25th August, **GREAT YARMOUTH & DAS** Tropical and Cold-water Fish Exhibition, Hapton Village Hall (on A12 between Great Yarmouth and Lowestoft). 30th August, **HOUSLOW & DAS** Open Show, Houslow Youth Centre, Cecil Road, Houslow. Schedules: Mr E. Sheppard, 9 Moulton Avenue, Houslow, Middlesex; phone 01-570 6127.

6th September, **FBAS** General Assembly, 2.30 p.m., Conway Hall, Red Lion Square, Holborn, London, WC1.

7th September, **BETHNAL GREEN AS** Open Show, Bethnal Green Institute, 228 Bethnal Green Road, London, E2. Schedules: Mrs S. Hedgas, Kol Korner, 150 Ashburton Avenue, Seven Kings, Havering, Essex, IG3 9EL; phone 01-590 3239.

7th September, **BUXTON & DAS** Open Show, Pavilion Gardens, Buxton. Schedules: noon-2.00 p.m. Details: Mr E. T. Blount, 18 Elizabeth Avenue, Fairfield, Buxton, Derby, SK17 7RB.

7th September, **KILLINGWORTH AA** Open Show. Communicate, Killingworth Township. Schedules: Mr G. B. Hickman, 14 Crumstone Court, Londesborough, Killingworth, Newcastle, NE21 0SZ.

7th September, **WELLINGBOROUGH & DAS** Open Show, Weyers Road Sports Centre, Weyers Road, Wellingborough, Northants. Show scheduled: Mr D. Brithenar, 1a George Street, Wellingborough, Northants.

13th September, **BRISTOL AS** Cold-water Open Show. Schedules: Mr E. N. Bowden, 12 Stoneleigh Walk, Knowle, Bristol BS4 2RL; phone 775359.

14th September, **CLEVELAND AS** Open Show, Church Hall, Whitby Road, Guisborough, Cleveland. Details: Mr. B. Watford, 50 West Road, Loftus, Salford, Cleveland.

14th September, **21st THREE COUNTIES GROUP** Open Show (to be run by Basingstoke AS, Bracknell AS, Didcot AS, High Wycombe AS and Reading AS), Reading University.

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14th September, **TORREY AS** Open Show, Torquay Town Hall, Torquay. Details: Mr J. R. Davis, 43 Haldon Road, Torquay, Devon.

21st September, **HASTINGS & ST LEONARDS AS** Open Show, One Community Centre, Hastings. Details: Mr M. Penfold, 44 St Mary's Road, Hastings.

21st September, **HUCKNALL & BULLWELL AS** Open Show. Details: Mr J. R. Westcott, 9 Royce Avenue, Westville, Hucknall, Notts.

27th September, **GOLDFISH SOCIETY OF GREAT BRITAIN** Open Show, Sutton Adult School, Beehill Avenue, Sutton, Surrey. Schedules: Mrs M. Dudley, 163 South Park Road, Wimbledon, London, SW19 6BX.

28th September, **NEWBURY & DAS** Open Show, The Plaza, Market Place, Newbury, Berks. Schedules: Mr S. Canning, 6 South End, Thatcham, Newbury, Berks.

4th October, **EAST LONDON AQUATIC & PONDKEEPERS** Open Show. Details to follow.

3rd October, **EALING & DAS** Open Show. Details to follow.

5th October, **SCUNTHORPE & DAS** Open Show. Details: Mr L. Barr, 5 Saxby Road, Scunthorpe, S. Humberside.

11th-12th October, **BRITISH AQUARISTS' FESTIVAL**, Belle Vue, Manchester.

24th-26th October, **THE AQUARIUM SHOW 75** at the Royal Horticultural Society's Old Hall, Vincent Square, London SW1. Presented by the Federation of British Aquatic Societies. Aquarium society fishkeeping exhibits invited. Details from the organisers, PFA, 554 Garrat Lane, London SW17 0NY; phone 01-947 2825.

26th October, **DONCASTER & DAS** Open Show, Grosvenor Mines Welfare Hall, Welfare Road, Woodlands, nr. Doncaster. Schedules: Mr A. Fawcett, 20 Hills Cross, Sprotborough, Doncaster, DN5 1NW, South Yorks.

2nd November, **BLACKBURN AQUARIST WATERLIFE SOCIETY** Open Show, Windler Hall, Blackburn. Details: Mr T. Burton, 21 Henry Street, Ribblesdale, nr. Blackburn, BB1 4JJ.

8th November, **HALIFAX AS** Open Show, Forest Cottage Community Centre, Cootin Lane, Killingworth, Halifax. Schedules: Mr D. Shields, Colbrestones, Garst, King Cross, Halifax; phone Halifax 60116.

22nd Nov, **GOLDFISH SOCIETY OF GREAT BRITAIN** Meeting, Conway Hall, Red Lion Square, Holborn, London, WC1, 2.00 p.m.

22nd November, **FUR, FEATHER & AQUARIA SHOW**, King's Hall, 39 Lower Clapton Road, London, E5. Schedules: Mrs S. Hedgas, Kol Korner, 150 Ashburton Avenue, Seven Kings, Havering, Essex, IG3 9EL; phone 01-590 3239.

6th December, **FBAS** Annual General Meeting, 2.30 p.m., Conway Hall, Red Lion Square, Holborn, London, WC1.



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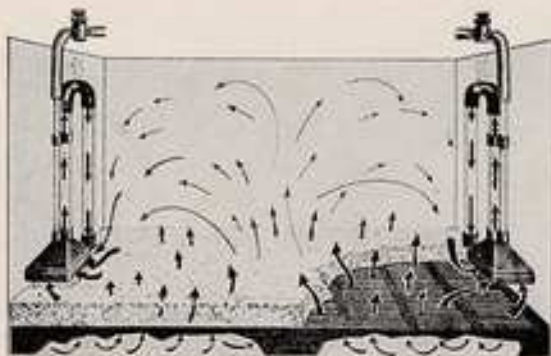
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