

DECEMBER 1974

20p

Pet **Fish**

PRACTICAL FISHKEEPING MONTHLY



Contents include:

Full Show Report of The **AQUARIUM SHOW 1974**

Five-Banded Barb Spawning

A New Plant Species

Dealing with Algae

Line-Breeding Coldwater Fish

Marinist's Notebook

Personal Comment etc.



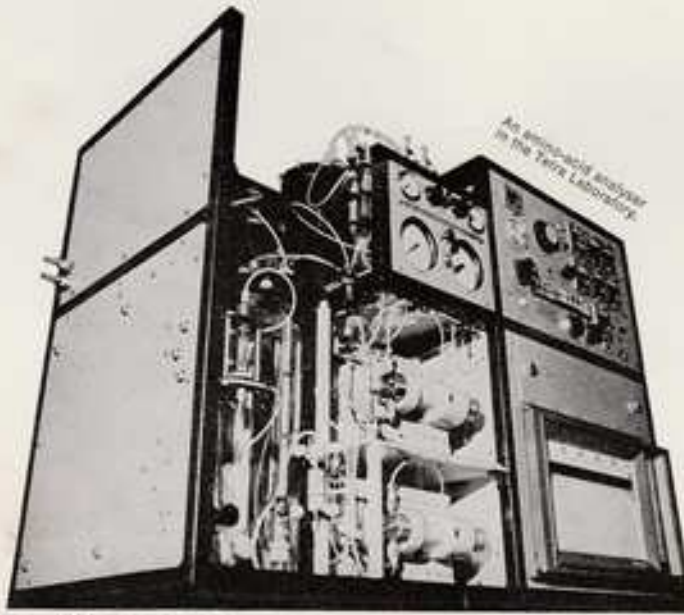
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The AQUARIUM SHOW 1974

ROY PINKS makes a tour of the Show and records some of his impressions

THE wintry October weather stood aside, briefly, to allow the seventh London Aquarium Show to open in the most pleasant of conditions, and the waiting queue was soon enjoying the fruits of many months of hard work on the part of the participants and organisers. The Show's management team has members who come along each year to lend a hand, and how everyone enjoys it! It never ceases to amaze me how they manage to overcome the many problems which come at them from all directions (and which seem to multiply in frequency and intensity as opening time comes closer)—but you have to be on the spot to appreciate how coolly and competently they actually deal with it all. What, then, did the 1974 Show achieve?

The fish. The quality of the fish



First award-winning aquascape at this year's Show

exhibits seemed to me to be as high as ever. Introduction this year of the Special Class ensured that there were many really large fishes on display, and although it is invidious to mention individuals a fine and rarely seen *Distichodus* was the envy of many. There were some excellent

coldwater entries, and I fancy these were numerically encouraging, though the competitive classes (breeders' and pairs classes, this year) could certainly have done with more all-round support. Throughout, the quality was first rate. The judges must have had a difficult time



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G. Bellenger

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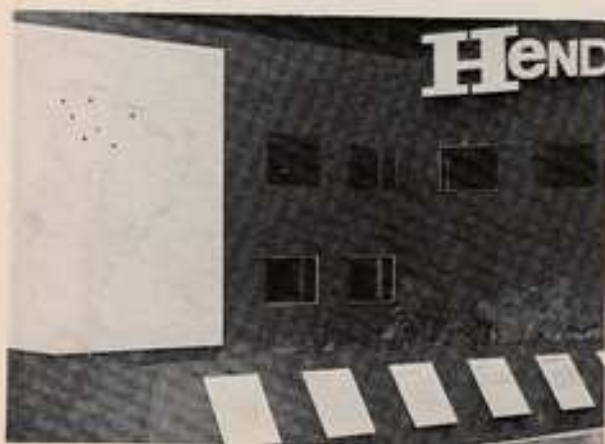
Winner in the Society Tableaux section

in some classes, and I simply defer to their experience and let the results speak for themselves.

The marine classes this year received no entries. In the case of native marines this is highly regrettable, and I had hoped to see some BMAA support here. The doubts and tribulations which beset tropical marines at shows seem to have kept these species at home—a fact which I do not personally regret overmuch—but as our native species stand up well to these rigours, it was a pity that there were none for us to

enjoy. The marine invertebrates, especially, would have been very welcome, and I hope that the BMAA will make every effort next year to fill this particular gap.

The Societies. Whatever the individual choices of visitors for 'best tableau' might have been it was clear that a tremendous amount of hard work had gone into all these displays, and every one deserved a medal or better. I suppose that Portsmouth AS with their gorgeous Carolina ducks turned many heads.



Iford & DAS were starkly real about the hard graft which precedes the achievement of every fish house, but the pleasures, too, were there for us to weigh. The Hendon AS exhibit (second prize winner) technically sound and visually attractive, displayed the source of a number of our most popular South American species by depicting a jungle settlement by a river, linked to tanks containing some superb specimen fishes. A splendid effort! Basingstoke AS cavern was mysterious and perhaps thereby lost the immediacy of other tableaux nearby—by contrast the Bethnal Green AS exhibit was fresh as a daisy, full of craft and impact with its village scene and industrious waterwheel. This was another example of wonderfully clever and thoughtful composition—the stuff which draws the crowds. Rummymede AS cichlids in their native haunts was largely authentic, but lost credibility by using English willow. The Mid-Sussex AS Picture Gallery (first prize winner) and Isle of Wight AS Living Jewels (third prize winner) were both examples of a light and discriminating touch, and the furnished aquaria in the latter were highly competently executed and a joy to see; they contributed one of the best sights of the whole Show, in company with the other furnished tanks in the competitive classes, and all those who submitted tanks under this heading deserve more than usual congratulations, prizewinners or not. Eirich & DAS used floral arrangement to good effect in a comparable exhibit of great attraction.

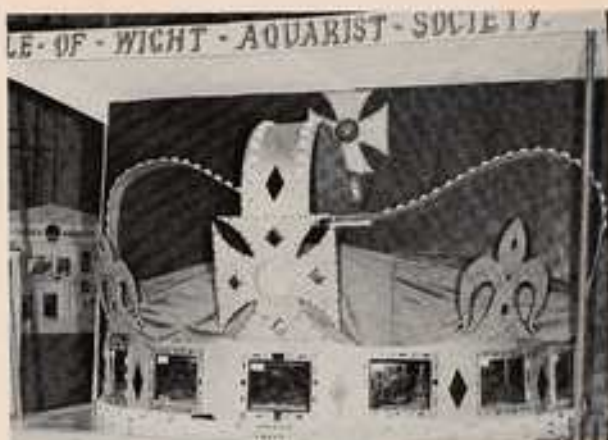
The specialist fishkeeping societies were well represented, though some had more positive appeal than others, and their objectives appeared to differ. The BMAA were simply factual and sought to recruit, whilst the FGBS had a comprehensive display of available varieties. The Catfish Association (GB) put on an impressive display of photographs in black and white, supported by more specific exhibits. The British Ichthyological Association had some beautiful specimens of our native fishes, but it was a pity that they were not displayed to better purpose, and that they were not named. I

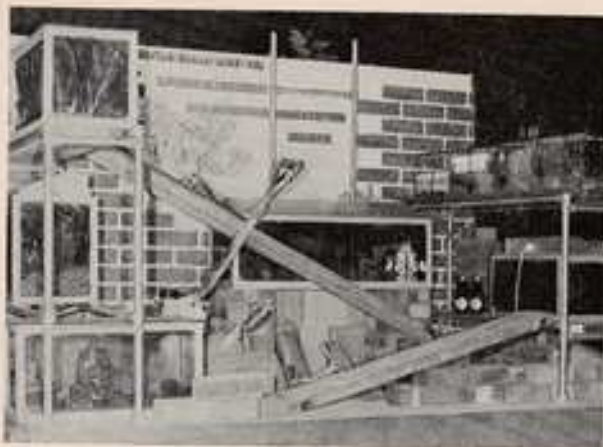
A tableau full of information was staged by Hendon AS (left)

have commented before on the all-round competence and attractiveness of the British Killifish Association exhibit, and I was glad to see that their seemingly traditional method of presentation has been retained. Splendid fishes, a tidy stand, neat typed labels on each tank, and readily available information about the fishes, are all the most desirable attributes of a show stand. Full marks once again to this admirable Association for both courtesy and show technique. Both the Koi Keepers' Society and the Goldfish Society of Great Britain were well represented, and there were some very tempting specimens for the impressionable. The Cactus and Succulent Society stand was manned by Mr Harry Auger, and bore an astonishing selection of plants. I greatly enjoyed a short gossip about plants with Mr Auger and my children were fascinated by the tiny *Lithops* ('living stones') which I managed to pack into my travelling bag and transport home without casualty.

The Trade. This year, trade representation in the Hall looked to be as good as it has ever been, and it was in this segment of the Show that I tried to assess the temperature of the hobby as a whole. I think we have all been somewhat depressed in recent times about its likely future, but I am delighted to say that the message of The Aquarium Show trade representation was one of solid optimism. There was a vast range of subjects and products, and without exception the principals on each stand gave the strong impression that it was their intention to progress; the busy-ness of the entire gathering added an authenticity which certainly bucked one up.

I have always felt that it would be a good thing to mount an exhibition of fish with the full support of the floral art world, and Martin's *Aquaria* went along with this. They have some fine examples of petrified wood which are popular in both camps. If you fall with plants, the plastic plant exhibits at King British and Armitage's Aquarium Products would put new life and hope into you. Metaframe seem to have taken my advice to market plants of differing heights (these come in groups), and they certainly look very real. Promin and the Phillips





Company provided much food for thought as well as for consumption in their separate well-equipped stands, and it was obvious from the visitors around them that passive items are as vital to many people as the fish themselves.

There were some fine plants for sale at the extensive Hobby Fish stand, and at the stand of Ampchill Aquatics, who also mounted a fine display aquarium of plants. Again, there seemed to be a really healthy interest in this static part of the hobby, and the quality of the specimens no doubt stimulated sales. Both Harlow Aquarium Supplies and Highgate Tropicals presented dazzling selections of fishes for intending purchasers, and there was much evidence of brisk business when I went my rounds. It is certainly good business to have such numbers to choose from, as any less than perfect specimens would have stuck out like sore thumbs—but I failed to see a single one.

The TFH and Fantasy Pet Products stand, immense as ever, offered a comprehensive selection of transatlantic literature and equipment, and I was heartened to note that a number of air pump spares were on display, too. At the other end of the Hall, matching TFH in diversity, Mr. Sarigny's wonderful display of corals and shells was dwindling rapidly, though he assured me that reinforcements were at hand. Visitors interested in quality equipment found much to interest them at the displays staged by Interpet and by John Allan Aquariums Ltd. On the former was a new compressor designed to serve some 50 tanks (it markets at about £60), and on the latter there appeared some of the finest aquaria available together with the essentials for making your own with the help of the newest sealants. Modern filtration techniques were well represented by Vortex Innerspace Products, who featured the Dimple Filter. On the same subject the Rosewood stand had much to offer on the subject of biological filtration,



Tableaux by (top downwards) Iford & District AS, Bethnal Green AS and Basingstoke AS

and the nearby firm of Wingate and Golding went a long way to meet the mariners' demands for an alternative saltwater mix—in this case Iw Marinemix. There were numerous innovations, and I expect I missed a lot, but I did note that the attractive Aquasphere could be hired for suitable occasions and that Peterama had a new freeze-dried bloodworm pack, together with a ruby colourant. This latter contains carotene, which is used to retain the colour in flamingoes in captivity. It certainly works in that case, and the reaction of fishes will be of interest to many. M. J. Scott's stand featured a heat pump and other means of economising in heating, and this topical approach was certainly opportune. I was surprised that the former was priced around £30—it looked far more formidable. New from Hillside Aquatics, which also presented a fine display of air pumps, was the Elite brine shrimp feed, which Mr Small explained can enable newly hatched brine shrimp to reach adulthood within 4-6 weeks. This is an important aid to mariners, who often tempt their problem fishes to feed by just this means. Other news for the mariner is the likelihood that Instant Ocean, the product of Aquarium Systems Inc., Ohio, may soon be on the market in this country. Mr Maguire of Laboratory Equipment Consultants (Europe's sole distributors) reminded me of the very considerable research and educational work undertaken by this company in the U.S.A.

Visitors and Others. The Aquarium Show was a splendid occasion, as ever, for the renewal of friendships and acquaintances and the making of new ones. The friendliness and courtesy of all those I spoke to on the stands was particularly welcome as I was working against time and nearly all concerned had customers to serve. Then there was a magical half-hour with George Hervey and Jack Hems, with



Carolina ducks on the tables by Portsmouth AS



Right: FBA's chairman Mr Frank Tomkins shows M. Crabbe-Boes from Oostend the distribution of federated societies in the U.K.



subjects ranging from Twigg to Delius and from card games to birds. We did get round to fish, too! The *1974* stand was our headquarters, of course, and it was in the office here that many of the dramas besetting the Show were sorted out.

I found The Aquarium Show, 1974 totally enjoyable, but as the introduction of pairs classes this year proved to be less than popular I

Show secretary Mr Derek Lambourne and the Show organisers thank the many who helped and coped before, during and after the Show. Among those to be specially thanked are Ken Adams, Tony Bullock, Pete Elson, Alf Gardner, Terry Jones, Mr and Mrs W. Netherwell, Ron Newman, Ed Stainer and Dave Wain. To the assistant show secretary Mrs Sybil Hedges and secretary to the Show Committee Mrs Pat Lambourne, and the FBAS judges at the Show, B. Baker, A. Blake, C. A. T. Brown, R. Forster, E. R. Nicoll, D. Renton, J. Snihwell, J. Sutcliffe, F. Tomkins and J. Wheeler, further thanks are due.



Show secretary Derek Lambourne and his assistant Mrs Sybil Hedges check entries and awards after judging

Left: the aquarium given by John Allan Aquariums as the prize in the competition arranged by the Aquatic Development Group at the Show

look forward to more exhibits of fish species next year. The most encouraging aspect was the optimism of all the participants to whom I spoke, who reflected further expansion and prosperity in the hobby in the foreseeable future. This was not mere talk: I detected plenty of enterprise, new ideas and a measure of willingness to cooperate which was as refreshing as it was unexpected. It was certainly music to the ears that so many were feeling that it was the fish which were important and not the politics, and perhaps what is left of 1974, and 1975 to come, will provide the concrete evidence for which we hope so much.



The Renton Trophy

Show Results

THE *Ditrichodus lusoco* that Mrs Pat Lambourne (Riverside) entered in this year's Aquarium Show had a very successful time and won for her the Best Fish in Show award (the Scanco Challenge trophy), the Ted Jessopp Memorial trophy for the Special Class of fishes over 12 in. in length and the Es-ls trophy for the Best Exhibit by a Lady. Bethnal Green AS won the T. Horeman Rose Bowl for the Society Furnished Aquaria and Riverside AS the Taylor Smith trophy for the Society gaining most points. Other trophy winners were: Mr K. Lewis (Rochampton), the Phillips Cup for Class



Winners were congratulated by Professor B. Condé, President of the French Federation of Aquarists, at the prize-giving.

Left: Professor Condé presents the Calgary Trophy to Mrs J. Burtles of Mid-Sussex AS.

Right: Mr. K. Lewis receives the Phillips Trophy from Professor Condé.



Ad or Ag; Mr T. Jones (Southend), the PFM trophy for barb pairs; Mr K. Bisson (Basingstoke), the Halvin Cup for characin pairs; Mr D. Reilly (Runnymede), Marsh trophy for cichlid pairs and the Terramin trophy for rasbora pairs; Mr & Mrs Crewe (Wellingborough), the Hykos/Peterama trophy for dwarf cichlid pairs and the TFH/Miracle Shield for mollie pairs; Mr P. Grosvenor (Runnymede), the Rena trophy for toothcarp pairs; Mr R. Newman (Riverside), the Kimmel trophy for labyrinth pairs; Mr G. Carpenter (Riverside), the PFM trophy for danio pairs; Mr C. Kinsingbury (Runnymede), the Trophy trophy for guppy pairs; Mr G. Smith (Walhamston), the new Kenton trophy for best livebearer exhibit, the PFM trophy for best pair of fish and the Pengilly trophy for platy pairs; Mr A. E. Noronha (Orpington), the FGA Cup for breeders' guppies; Mrs Sybil Hedges (Bethnal Green), the Boughton trophy for best goldfish, the Longlife plaque for best cold-water fish and the FBAS Council trophy for Class W; Mr G. J. Burron (Ealing) won the specimen plant donated by Mr R. Feeder; the Best Junior Uno Rosette award was won by Master S. Emptage of Walhamston.

The Supreme Championship class was won by the *Asadoras grypes* entered by Mr D. Lambourne (Catfish Association) which received 89 points. An *Ophiocphalus obscurus* entered by Mrs S. Hedges (Bethnal Green) was second with 86 points; 3, *Barbus platanus* (Mr R. Bisson, Basingstoke, 84); 4, *Danio rerio* (Mr T. Cruickshank, Ealing, 84); 5, *Labostrophus tetrastriatus* (Mrs M. Nethersell (Riverside, 83)); 6, *Orphoides barb* (Mr K. Smith, Runnymede, 79). Other results were:

A4: 1, Bethnal Green AS (71); 2, Sturminster AS (70); 3, ESB & DAS (64); A5: 1, Portsmouth AS (70); 2, Riverside (58); 3, Lyth (56); A4: 1, Mr K. Bowman (Ealing, 70); 2, Mrs J. Sainsbury (Harlow, 61); 3, Mr B. Bunker (Ealing, 62); A5: 1 & 3, Mr K. Lewis (Rushampton, 82); 2, Mrs J. Lewis (79); A6: Runnymede (76); 2, Riverside (59); 3, ESB (55); A4: 1, Master K. Emptage (Walhamston, 66); 2, Mr D. Parrat (Runnymede, 67); 3, Mr J. Shepherd (Runnymede, 66).

NH: 1, Mr T. Jones (South London, 75, pink barbs); 2, Mr J. Neillery (Riverside, 74, dusky barbs); 3, Mr D. Eiden (S. London, 73, B. *Andichthys* NC); 1, Mr K. Bisson (Basingstoke, 74, *A. andichthys*); 2, Mrs H. C. Thompson (Harlow, 72, *Vari. marginatus*); 3, Mr C. Kinsingbury (Runnymede, 71, *H. andichthys*); NDM: 1, Mr D. Reilly (Runnymede, 76, *P. ananias*); 2, Mr & Mrs Crewe (Wellingborough, 74, *P. arthenoides*); 3, Mr C. Kinsingbury (73, *A. andichthys*); NF: 1, Mr P. Grosvenor (Runnymede, 71, *Chloris ananias*); 2, Mr D. Reilly (75, *A. ananias*); 3, Mr R. Newman (Riverside, 72, blue guppies).

NK: 1, Mr G. Carpenter (Riverside, 79, *zebra danio*); 2, Mr D. M. Bailey (58, *R. melanostictus*); 3, Mrs M. Nethersell (Riverside, 74, *R. melanostictus*); NOP: 1, Mr C. Kinsingbury (79); 2, Mrs M. Nethersell (77); 3, Mr & Mrs Woodward (N. Kent, 74); NF: 1 & 2, Mr D. M. Chroswright (Chesham, 76, 75, *P. ananias*); *Blue jama*; 3, Mr K. Bisson (Basingstoke, 74, *P. ananias*); NORS: 1, Mr G. Smith (Walhamston, 79, *P. ananias*); 2, Mr A. E. Noronha (Orpington, 75, red platys); 3, Mr K. Bisson (84, *P. ananias*).

XB-M: 1, Mr G. Carpenter (Riverside, 80, *Pop. melanostictus*); 2, Mr R. Oatley (Basingstoke, 79, *A. melanostictus*); 3, Mrs P. Lambourne (Riverside, 79, *Callistohya rathbini*); X0-P: 1, Mr A. E. Noronha (75); 2, Mr & Mrs Woodward (72); 3, Mr T. Woolley (71); X0S: 1, Mr G. Smith (78, *P. ananias*); 2, Mr A. E. Noronha (76, green tetras); 3, Mr A. E. Noronha (74, red platys); X1: 1, Mr S. Powell (Riverside, 80, *Lamprologus*); 2, Mr D. M. Chroswright (78, *L. melanostictus melanostictus*); 3, Mr H. Waite (Harlow, 77, *L. melanostictus*); X1W: 1 & 2, Mr J. P. Thompson (88KS, 79, 78, *metallicus*); 3, Mr H. Waite (79); 3, Mr & Mrs Woodward (N. Kent, *metallicus*, 77).

Special Class: 1, Mrs P. Lambourne (*Diatelochia jamaica*, 82); 2, Mr E. M. London (Thurrock, 81, *electricus*); 3, Mr K. Adams (Southend, 80, *Callisoma* sp.).

U: 1 & 3, Mrs S. Hedges (Bethnal Green, 78, 89, goldfish, *Lepomis gibbosus*); 2, Mr & Mrs Crewe (75, goldfish); X: 1 & 2, A. C. Green & B. C. Ruffland (Reading, 71, 70, *valtairii*); 3, Mrs B. Bunker (89, *metallicus*); W: 1, Mrs S. Hedges (77, *Lepomis gibbosus*); 2 & 3, Mr & Mrs Woodward (75, 70, minnow, *leucis*).

Za: 1, Mr G. J. Burron (85, 76, *Acanthopoma*, *Acanthopoma* 2 & 3); Mr M. J. Allen (76, 75, *Acanthopoma*, *Acanthopoma*); Zb: 1, Mr & Mrs Woodward (83, 78, *E. gressu*, *Lepomis*); 2 & 3, Mr M. J. Allen (78, 76, *Lepomis*, *Bacopa carolinensis*); Zc: 1, Mr M. J. Allen (77, *water lilies*); 2, Mr & Mrs Woodward (76, *analis*); 3, Mr D. Bailey (68, *claus*).

A Merry Christmas and Happy Fishkeeping in 1975 to all our readers everywhere



PETFISH
MONTHLY

LETTERS

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

Breeding Pencil Fish

AFTER reading Personal Comment by Arpee regarding pencil fish, I bred and reared two adult fish *A. beekfordi beekfordi*. I took 50 to a shop and I got five pence each. At the same time the shop had 50 three-quarters-grown pearl danios from me and I got five pence each for these—perhaps this is why pencil fish are scarce.

I bred my pencils in an 8 in. by 4 in. by 6 in. tank, with a fine mesh net 1 inch from the bottom and with 3 in. of soft peaty water above the net, and two to three pieces of fine-leaved plant. I put the pair in the tank just before dusk and placed the tank on the top shelf of the fish house where it would receive plenty of light and heat. The fish spawned first on the second day and sometimes the water temperature was over 90°F. I removed the fish and plants and net and shook the plants and net into the tank. A few more eggs dropped off and joined the others on the bottom of the tank. I placed the tank away from the light for 6 days. The eggs hatched in 36 hours and the fry hung on the sides of the tank like vertical splinters. On the sixth day they were free-swimming. I fed them micro cels for 2 weeks, and then brine shrimp; 50 to 75 eggs each spawning is the usual number, with a 90% hatch. I find that pencil fish live from 2 to 4 years and live well on dried food. A shoal of pencil fish in a well-planted tank is a sight to see.

Strood, Kent

L. B. ARNOLD

Every Reasonable Precaution

I FEEL that I must write this letter to make public the events leading up to the death of my fish, a 12 inch specimen of *Distichodus sexfasciatus*, during the recent B.A.F. held at Belle Vue, not to fulfil any personal need but in the hope that I may be able to prevent the same from happening again at some future event.

The fish was seen to be in distress by the night patrol early Friday morning. The steward observed that the power filter I had set up on the tank was not aerating the water adequately and so he placed an airline from an adjacent tank into my tank. This remedy was apparently effective and on returning half an hour later the steward removed the airstone and replaced it in the adjacent tank. Unfortunately, on a later patrol the fish again was

showing signs of distress, caused by lack of aeration. The steward therefore repeated the earlier procedure and again the fish responded to the aeration. However, instead of rigging up some means of permanent aeration to last for the duration of the show, as was obviously required, the steward aerated the water for a period and then replaced the airstone in the other tank. A few hours later on a later night patrol the fish was seen to be dead.

I arrived first thing on Saturday morning and was shocked by the sight of an empty tank and no explanation as to why. When I contacted the head steward he related the details as given above. In answer to my question as to why some sort of permanent supply could not have been provided he replied that they do not carry spares—no spares at a show of this magnitude and popularity, and organised by the F.N.A.S. with more than £4,000 in their coffers!

I did, of course, approach the show manager with my grievance but he did not seem to appreciate my points. In short, I do not consider that 'every reasonable care' had been taken of my exhibit and perhaps at future festivals appropriate emergency facilities could be on hand just in case.

Huddersfield, Yorks.

DR P. A. LEWIS

Mr George W. Cooke, Honorary B.A.F. Organiser, has replied: It is always regrettable when a fish is lost. However, in my view the letter has been written to the hobby press not as Dr Lewis states 'not to fulfil any personal need but in the hope that I may be able to prevent the same from happening again' but contrawise—in short a trouble stirring one. I am sure my stewards did what they considered best—*note* they found Dr Lewis's own pump had failed or was inadequate. So I draw the conclusion the fish had begun to die when left by Dr Lewis... Dr Lewis can best help by helping to steward than by letter writing.

Cons and Feds

MANY moons ago I wrote in to PFM and expressed what I felt was in many other aquarists' thoughts, i.e. the need for our divided hobby to make some real attempt to get together and for the various Federations, Associations etc.

Continued on page 381

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RE-USABLE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
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EHFIFIX-FEIN is a mechanical pre-filter which protects the other filter materials from damage from large particles.

EHFIFIX-GROB is similar to EHFIFIX-FEIN but is recommended for use in large aquariums.

EHFIMECH is strictly a pre-filter media. The multitude of the round, hollow bodies of EHFIMECH create a turbulence in the water as it passes through, retaining many substances and extending the duration of effectiveness of the other filter mediums.

BIOLOGICAL MEDIUMS

EHFISUBSTRAT-FEIN provides an ideal attaching surface for bacteria which break down biological waste materials in the aquarium. It is specially recommended for use at the bottom of the aquarium.

EHFISUBSTRAT-GROB is an effective biological filter medium. A highly porous material, it provides an ideal attaching surface for bacteria which break down biological waste materials in the aquarium.

EHFIBAS is a coarse, sharp edged, crushed gravel which should be used in uncrowded aquariums as pre-filter for other materials. In addition to its mechanical filtration of large particles, a biological filter is formed as bacteria settles on the rough surface of the gravel particles.

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LETTERS

continued from page 376

to come to some general agreement as to guide lines for the future. I finished by saying that what was needed was a Confederation. Since then such an organisation has been formed: tragically, to my mind, it appears that it was formed in a different spirit from my sentiments and from the attitudes of most aquarists that I have met from all areas over the past few years.

My impression is that the Confederation gets its incentive from one source only—that is, its confrontation to the FBAS. This is expressed by the Confederationists' fixation on the letter 'B'. They would have us believe we have no right to use the word 'British' in the name of our organisation. (I suspect that if any other organisation had been first in the field in our hobby, rather than the FBAS which was, it would be even more jealous of that tradition!) This attitude is even more disastrously expressed by the restrictive methods of the 'C's towards clubs who want membership of more than one organisation—at least when the second organisation happens to be the 'B's. Thank goodness that the organisations that my society normally come into contact with don't go in for these 'party games'.

Proof of my impression can be found in 'A Word in Your Ear' published in this year's BAF Catalogue. Although many of my contacts found the sentiments contained therein humorous, I believe that Geo. Reid was being serious and was expressing the 'C's views. There are so many points that deserve to be taken up and discussed. For instance, how can the 'C's say they speak for all U.K. aquarists unless they consider the views of the 50%, represented by the 'B's—especially as this is the very criticism levelled at the 'B's in the past? At that time, if we put things in perspective, the 'B's were a majority and were organised, whereas the aquarists represented now by the 'C's were fractionated and could not have been expected to reflect 'British aquatic opinion'.

Reference to the FBAS in terms of 'governed by' and 'imposed' reflects the 'C's lack of understanding of the basic democracy in the FBAS, where the societies are the ones who govern, and it also reflects the 'C's acceptance of the dictates of top judges and officials within their own organisa-

tions. Reference to 'outdated rules' can only bring the retort that if these are so outdated how come all trace of our methods had to be removed at this year's BAF? Competitors in the north should ask themselves why their leaders are so afraid of these 'outdated' rules and methods? We don't believe our system is by any means perfect, but as a competitor I am prepared to defend or debate with any 'C' in print or in person the merits of any system.

I fear that there are many myths built up and propagated about the FBAS wanting to impose its rules on others. Many references are made to a meeting held some years ago when MAAS invited the 'B's to discuss a get-together on rules. The 'B's thought the other organisations ought to take part, and so MAAS made the invitations, but only one other—a representative of the FNAS—attended. At that meeting, however, neither the FNAS nor MAAS produced any show rules for discussion. Only the FBAS presented a complete set, so naturally these became the basis for the discussion. This is now interpreted as 'FBAS domination' and even though the 'B's made several compromises to suit the national outlook, the 'B's are now reported as not agreeing to any compromises.

As aquarists we know, for instance, that if you cannot make up your mind whether to set up a tank as a marine set-up or as a freshwater one, a compromise of half and half will not be such a good solution as a decision in favour of one or the other. The same with some basic rules—we could never agree to compromise, say, on the number of fish to be pointed. Where competitors are used to all their fish being pointed, no compromise would be satisfactory along the lines "you point only six fish now, we point them all, so let's compromise and point twelve". Compromises must be advances and not retrograde steps. The FBAS is always prepared to accept any improved method which can obtain a majority vote at an assembly.

The myth that the 'B's wish to take over and run other organisations is the exact opposite of the facts; the policy has always been for local aquarists to run their own affairs. The CNAA, the TTAA, and others are the living proof of this policy. It is odd that criticism of agreements for us all to use the same rules should come from the 'C's, as this is, after all, the professed reason for forming the Confederation.

Finally, can I remind Geo. Reid of this professed purpose, and as Management Committee chairman ask him to adjust the present policy of propagating myths about the 'so-called parent body' and to adopt an open-arms policy towards all aquarists in the U.K., even we 'B' fishkeepers?

Neville Close, Basingstoke, Hants. M. STRANGE

Breeding and Care of the Five-Banded Barb



Barbus pentazona pentazona

BARBUS pentazona pentazona has been imported into Europe for over 60 years now—since 1911. Its home waters are in the Malayan peninsula, Singapore, Sumatra and Borneo areas. It grows to a size of about 2 inches (5 cm.) and resembles the chequer barb in build. Although in colouring it is more like the tiger barb it is not only the difference in shape that distinguishes it from that fish—the number and patterning of the diagonal stripes that adorn its sides, and for which it is called the ‘five-banded’ barb, also prevent confusion.

Although both species, *B. pentazona pentazona* and *B. tetrazona tetrazona*, share the same natural habitat and do bear this resemblance, our five-banded barb is quite distinct in character and behaviour. In the community tank it is essentially a quiet and very timid fish. I have never seen them, for instance, biting or tearing other fish's fins, as I have seen the tiger and four-banded barbs doing much to the distress of fish such as *Pterophyllum esmaki*.

The care of these peaceful, relatively shy fish presents no special problems, though they are rather choosy in their food. Breeding them is not so easy as with the tiger barb and their display behaviour is different. The male is the smaller, slimmer fish with deeper colouring and brick-red fins. The female is larger and fuller in the belly. It is also paler coloured.

By RUDOLPH ZUKAL

Photographs by the author

Translated by F. MARSH

The pair of barbs during the pre-spawning stage. The female is easily recognized as the deeper-bodied fish



To spawn the five-banded barb, a smaller tank (2-3½ gallons; 10-15 litres) can be planted with fine-leaved plants and filled with medium soft, crystal-clear water at a temperature of 78-80°F (26°C). When I put my breeding pair into their tank it was nearly 6 days before they had acclimated themselves to their new quarters. At first, they darted into the plants with little, jerky movements, breathing quickly with their whole

bodies trembling. They lost their colours and it was a fairly long time before they quietened down.

When the spawning did take place, the displaying male 'fluttered' around the female with spread fins, and sometimes I could see him quivering. Then he tried to approach her. At first, she resisted and he continued to swim round her, crossing from side to side. Finally he became impatient and gently rammed her. As she tried to



During the spawning embrace the female has turned on to her back as the eggs are released

swim away he followed her, endeavouring all the time to get beside her.

Then the first attempt at mating took place. By this time the female, of course, was willing to spawn, and together they swam side-by-side into the plants looking for a suitable place. At this

stuck to the plants. These matings were repeated several times in various parts of the tank, one shortly after the other (altogether the process lasted from 2 to 4 hours).

Once the spawning has come to an end the parent fish must be removed as they will soon eat



After the spawning embrace the pair separate abruptly and are motionless for a brief period.

stage the female initiated the search for a suitable spot and the male followed meekly along. At last they were in earnest. Above the plants they pressed together, the male threw his caudal fin over the rear part of the female's back, there was a jerky separation and the ejected eggs fell down and

the eggs. The brood hatches in about 24-36 hours. As soon as the young fish are free-swimming they need a plentiful supply of live foods. Also, just like their parents, they are very susceptible to a sudden change of water or transfer to another tank.

Meetings and Changes of Officers

BRIGHTON & SOUTHERN AS. Secretary, Mr S. Fook (55 Newmarket Road, Brighton); Meetings: 1st Monday of month, 8.00 p.m.; K. & T. Social Club, Franklin Road, Poyshole. New members and visitors always welcome.

BRISTOL TFC. Secretary, Mrs L. Linton (9 Little Socka Road, Stoke Bishop, Bristol); Meetings: 3rd Thursday of month, the Black Horse, Old Market, Bristol.

BRITISH CICHLID ASSOCIATION. Chairman, Mr J. Burles, general secretary Mr T. Green (12 Greenwood Meadow, Chalfont, Oxford); Treasurer, Mr K. Elliot.

BRITISH ICHTHYOLOGICAL SOCIETY. Chairman, Major S. A. Luen; Treasurer, Mr A. Johnson; secretary, Mr D. Marborough (60 Newfields, Welwyn Garden City, Herts.); editor, Mr G. Neufrock; librarian, Mr W. Buller; Co-ordinator editor, Mr D. W. Park.

BRITISH LIVERBARGER ASSOCIATION. Chairman, Mr J. A. Laidler (19 Alb Avenue, Georh, Newcastle-upon-Tyne); secretary,

Mr B. Lawson (84 Grosvenor Road, Jesmond, Newcastle-upon-Tyne; phone 0632 312623).

CHARACIN STUDY SOCIETY. New Society. Acting chairman, Mr R. M. Fox (44 Crickwood, London, NW 2); acting secretary, Mr M. West (75 Lingfield Avenue, Kingston-on-Thames, Surrey).

DEVIZAN AS. New name. London Road Youth Centre, Devizes, 4th Wednesday in the month. Chairman, Mr B. Parsons; secretary, Mr P. Lobbett (22 St James, Devizes, Chippenham, Wilt.); show secretary, Mr M. Brown; treasurer, Mr R. Burden.

FEDERATION OF NORTHERN AQUARIUM SOCIETIES. New secretary, Mr D. R. Glen (15 Nantac Avenue, Whitfield, Manchester M23 9JA).

GLOUCESTER AS. Secretaries, Mr & Mrs G. Perkins (213 Bodham Avenue, Quobley Court Estate, Gloucester); Meetings: Old Tuller Community Centre, Gloucester.

LEWISHAM & DAX. Chairman, Mr J.

Ackland; secretary, Mr T. D. Hewitt (109 Farley Road, Canford, London SE 9); show secretary, Mr P. Jarvis (73a 2, 239 Hither Green Lane, Lewisham, SE 13); phone 01-488 6041; treasurer, Mr E. Southon.

MID-SUSSEX AS. New meeting date, to 1975, the second Thursday of the month and not the third.

PORTSMOUTH AS. Secretary, Mrs L. Howard (11 Kingscote Road, Cowplain, Waterlooville). Meetings: 1st and 3rd Wednesday of month, 8.00 p.m., Malins Road, Bookham.

ROMFORD & BEACONTRIE AS. Chairman, Mr D. G. Kent; secretary, Mr D. E. Hyfield (71 Cecil Avenue, Hornchurch, Essex; phone Hornchurch 50952); treasurer, Mr G. C. Reading; show secretary, Mr F. Jacobs; associate, Mr W. J. Baker; entertainment secretary, Mr P. Egan. Meetings: alternate Thursdays, dates in November 14th and 28th, St Augustine Church Hall, Rush Green Road, Romford, Essex. New members always welcome.

SOUTH SHIELDS AS. New secretary, Mr Peter Wright (11 Boston Crescent, Town End Farm, Sunderland, Tyne Wear).

SOUTHAMPTON AS. New secretary, Mrs D. Mills (88 Fersden Way, Bitterne Park, Southampton).

COLDWATER SCENE



By FRANK W. ORME

Selective Line-breeding to Establish a Strain

● Winter Check of Equipment

DECEMBER is a month that provides little activity for the coldwater fishkeeper with fish in a pool or fish house. This is a time of year that allows us to sit in the warmth and comfort of our homes, and reflect upon the success or misfortunes of the past season.

During these day dreams perhaps that perfect 'show-stopping' fish is visualised. If quality fish are to be produced the breeder must, however, work to some form of plan, for although the haphazard breeder who spends money on the frequent introduction of new fish may occasionally rear a good specimen, he will not obtain an overall improvement, each year, in the quality of the young fish he produces. In other words, a strain must be built up by one of the methods of line-breeding.

As I promised in the July issue of *PFM*, I will describe the method which I use, but it must be remembered that it takes time to build a strain and it is patience that brings the results—quality improvement will not happen in either the first or second season, but it will come if things are not rushed.

A trio, of two females and one male, is required and obviously these should be the best that can be obtained. Either purchase a few young fish and grow them to sexable size or buy three well-grown yearlings. Whichever way you decide upon, be prepared to pay—the type of fish you want do not get offered as the week's cut-price bargain! If you have decided upon one of the fancy varieties of goldfish it is most unlikely that the desired characteristics will appear on one fish. Possibly the veiltail is the chosen variety, and it may well be that you will have to select one fish for body shape, another for colour and the third for finnage—especially a broad well-shaped caudal fin.

It will be the aim to bring these features together, by selective line-breeding, so that they are evident upon a large number of the future generations of young fish to be produced. Where possible try to ensure that the two females are the better quality fish, as it is these that will be used, in the early years, to establish the line.

During the breeding programme all spawnings, hatchings and rearings must be kept separate. You will also find that if simple records are kept they will prove of great assistance. Make a note of the breeding pair, the date of spawning, and

hatching together with a note of the water temperature. The final notes should be a brief description of the fish selected from the spawning for future breeding. If you have a camera try to take photographs of the fish; pictures are so much more accurate than words and will serve as a reference against which to compare future fish. Such a comparison will give an excellent idea of the progress being made.

In order to simplify the breeding I will detail the crossings under 'Generations' headings, and as this system requires two lines I will refer to them as line A and line B.

Commence by crossing the male first with one female, to start line A, and then with the other female, for line B. Ruthless culling of the resulting young must be practised so that only the best fish are kept. Details of how to cull fancy goldfish have been given in these columns of previous issues of *PFM*, together with the points to look for. The selected fish must receive the best of food and ample space in which to make good sturdy growth. These are your first-generation fish.

Second generation: From the first-generation fish choose the best male from line A and the best male from line B. These males are now crossed with their mother and the ensuing young again subjected to severe culling so that the best can be given the maximum space and food. Do not be tempted to keep the 'also rans'.

Third generation: Again the two best males are picked from lines A and B, of the previous generation, and each is crossed back to its respective mother/grandmother, the young being given the same preferential treatment as in the past.

Fourth generation: This time the best young female is chosen from each line and crossed with the original male. The original three fish will not be required again and can be disposed of to a fellow fancier.

Fifth generation: Select the best male and female from both lines of the last generation and breed brother to sister in each line. This particular crossing is known as 'in-breeding', whereas the other crossings were 'line-breeding'. From this generation's young it will be possible to learn just how much progress has been made. In-breeding intensifies both the good and bad points that are being bred into the strain.

Sixth generation: Again the best male and female

of each line, in the fifth generation, is required, but in this generation the lines will be amalgamated by crossing the male from line A with the line B female, but will continue as line A. Of course, line B is carried on by crossing the young male of that line with the line A female.

Seventh generation: The last generation's young will now provide the best male from each line, these being bred back to their great grandmother; in other words the young line A male is bred to the fourth-generation female. The B line male is also crossed with the line B fourth-generation female.

Eighth generation: This generation now follows by the same pattern as described for the second generation, and so the sequence continues until the tenth generation, which is replaced by using the crossings detailed for the sixth generation. In the eleventh generation, use the crossings given under the fifth generation; this generation will reveal how well the strain is established.

Twelfth generation: Use the best young male to cross with its own mother, or, if for any reason the line appears to be weakening, choose the best young female from each line of the previous generation. Obtain a good quality male from another well-established strain and cross with these females. If this course is adopted then the same sequence is followed exactly as if you were starting the strain anew.

It will now be realised that it takes many years to establish your own strain and it does require patience and dedication. In the early days little sign of improvement will be noticeable. There will be set-backs and many disappointments but, with perseverance, the quality will improve until eventually you will have a strain that produces fish that are recognised by other breeders and of which you can be justly proud.

Having dealt with a method of line-breeding your fish I would emphasise a point I have made on numerous occasions in the past. Do not pamper your coldwater fish. Coldwater fish (and despite the views of many, I maintain that all varieties of goldfish should be treated as coldwater fish), do not require warmth during the winter. In my own fish house, during a hard freezing spell of weather, up to a quarter inch of ice will form on the water surface in the tanks. If under these conditions a fish has the misfortune to develop swim bladder trouble it is bad luck, but I am not unduly worried. I would rather the fish develop the complaint than, possibly, use the fish for breeding and pass on the unsuspected weakness, which could happen if I kept my fish warm.

A further point in favour of cold water conditions

is that, after a winter of semi-dormancy, the fish condition more readily in the spring and are more vigorous—a fact that many goldfish breeders have discovered.

The poor spawnings of the last 2 years can to some extent be blamed upon the preceding mild winters. Of course, some precautions must be taken to prevent a real freeze up in a fish house. However, these precautions are not, or should not be, for the benefit of the fish. Only sufficient warmth is required to prevent ice pressure damaging the tanks. My own heater, which is electric, is controlled to switch on at just below freezing point and switch off at just above. Definitely not a place to spend much time if the temperature is really low. A quick dash to make sure all is well and away again!



Between now and next March the opportunity can be taken to overhaul any equipment that will be required next season. Heaters and thermostats can be checked for good working order by placing submersible types in a bowl of cold water and switching on. It takes only a matter of seconds to ascertain whether the instruments are still functioning.

Air pumps can also be looked at and, if found faulty, diaphragms or other parts can be replaced. Water pumps will benefit from being serviced; such types as the Otter can be stripped down and thoroughly washed until clean. When dry, all moving parts can be given a light coating of petroleum jelly and then re-assembled. Make a careful inspection of all electrical connectors and wiring; if there is the slightest doubt about the safety of either—replace it. The time spent, whilst there is little else to do, will be time well spent for it should avoid the frustration of requiring a piece of equipment in a hurry only to find it either faulty or broken.

Should you have the misfortune to find that some of the equipment is beyond repair it is obvious that something must be done—deep sighs and a glum expression may prompt someone to enquire into your apparent misery. If a suitably despondent reply is given—who knows but what a replacement might appear on Christmas Day. This magical replacement, of course, being something that is a great surprise to you!



As this is the last 'Coldwater Scene' of 1974 I should like to finish this contribution by wishing each and every reader of *PFM* a Very Merry Christmas and a New Year that brings both pleasure and success to all fishkeepers.

MARINIST'S Notebook

By ROY PINKS

THE unwonted and extreme savagery exhibited by some marine fishes leaves little to the imagination. Those who have only ever kept freshwater fishes will recognise the broad outlines of the danger areas in that branch of the hobby: most aggressors are quite easily recognisable for what they are, and most will act true to type. Regrettably, it is true of marine fishes that aggression is a characteristic of the majority, and the unpredictable aspects are those of degree and extent of the individual's passions. These may vary on the part of a single fish over a period of time, and it must not be assumed that a young fish which has behaved impeccably will grow up with like manners. It may metamorphose into an absolute shocker overnight and give no warning of its change of temperament. The result could be that the owner of yesterday's six fish may today be the owner of one superno and five corpses.

One usually associates this sort of thing with the larger species, though the butterflies are notoriously much milder in this respect than some of the other groups we encounter. It is the unpredictability of some of the smaller fishes which often proves so perplexing for the mariner. I suppose that the ideal way to set up a tank is to buy all your fishes at once and let them sort themselves out from scratch. This is an unpopular way of going about things, though. Most of us are collectors by nature and half the fun of fishkeeping is that of picking up a specimen here and another there, and the triumph of running down a rare species at a knockdown price is all in favour of piecemeal additions to a basic collection. The other reason for doing things gradually is usually economic, as few of us have enough money to finance what may be a heavy initial outlay. I assume in this argument, of course, that the tank is seasoned, as if it is not, it is utter foolishness to introduce more than a fish at a time.

The present state of the import business indicates that air freight is going up and up and up, and many retailers are crying off marines because the cost of shipping them, per unit, is outpacing the sales value of a number of popular species which cannot be close packed. The inevitable result of this is that we may expect smaller and smaller fishes to become available. In some respects this may not matter much, though undeniably some of the small butterflies are almost

impossible to feed in their extreme youth. Sizes seems to matter less in the case of the commoner species, and good results can be expected even from 1 inch specimens, provided that they are not subjected to the aggressive tendencies of markedly larger fish or of fish of the same size with unusually big ideas. It is not very clear why one fish amongst a group of six of the same species of very similar size will suddenly find itself attacked and possibly killed. It may well be that it is an ailing fish—most marine fishes show few symptoms in the early stages of sickness, and even when on the point of death look virtually as good as when in their prime. Nature is, however, on the lookout for the weak and has its own crude ways of achieving the desired balance.

We must assume, however, that specimens which find themselves unable to carry on a normal existence in the face of attack will die unless we take action to give them the opportunity they need to find their own particular niche. We can perhaps remove a particularly difficult aggressor (if we can catch it without the disintegration of the entire tank!) or, alternatively, provide the weaker specimens with a tank of their own. In the latter case it may be found that they may recover their wits and put on size and gain stamina. In theory this may allow them to be moved to the company of their erstwhile brethren later on. In practice this may be risky: the other fishes will also have grown and will have become even more territorial than they were originally, so you may have to settle for establishing a community around a nucleus of the weak.

You may then find the problem becomes even more complicated when you add other weak fish to this tank, as they in turn will find it difficult or impossible to hold their own. This exaggerated account is mainly to underline the sort of difficulties which marine aggression may pose, and it may help readers to plan against some of the less pleasant eventualities. Above all, your fishes are no better and no worse than the next man's in this respect, so don't get a complex if you do run into trouble on this score. One very good assumption you may make is that a severely victimised fish probably won't make it, and you may have to do a rescue act. This underlines the need for extreme vigilance when introducing each and every fish to your collection.



Linnophila
aquatica

FOR several years now I have had a most beautiful, exotic plant in my tanks with large, finely divided leaves: a *Linnophila* for certain, but which one? Just a little while ago the answer came—from Mr D. Philcox of the Kew Herbarium. The name of this wonderful aquarium plant, he decided, is *Linnophila aquatica*.

Every 'old-timer' in our hobby knows the stories about the 'Ambulia', more correctly the *Linnophila sessiliflora*, that grew so rapidly that it had to be removed weekly from the tank! Just as well known are the tales of the fabulous diameter the heads of the plant reached in those days! Now these tales are not just aquatic fantasy, although it must be admitted that over the last

A New Malaysian Jewel

By W. A. TOMEY

Photographs by the author



20 years the plants have deteriorated. The large heads are gone, the phenomenal growth has slowed down and several mysterious diseases worked their way through the plants until the old 'Ambulia' disappeared from our tanks.

So I was very surprised when I discovered, in a friend's tank, a type of *Linnophila* which showed such leaves, stems and proportions as I had never seen in my life. Even the legendary proportions of the past were surpassed! Picture them yourselves—stem 12-24 in. (30-60 cm.) in length and $\frac{1}{2}$ in. (5 mm.) in diameter, whorls of leaves from 3-4 in. (8-10 cm.) across and a bright green in colour.

Originating from the Malay Archipelago, the plant has been spread throughout the hobby by Chinese exporters of tropical fishes and plants. In the aquarium, grown permanently under the

At the top of the page the large heads of *Linnophila aquatica* are displayed in an aquarium. To the left is a picture of the more common *L. sessiliflora*, once sold under the name 'ambulia'.



With daylight illumination the heads of *Linnophila aquatica* show very finely divided masses of leaves (left). With less favourable lighting or as a result of frequent shortening of stems the leaves are less dense.

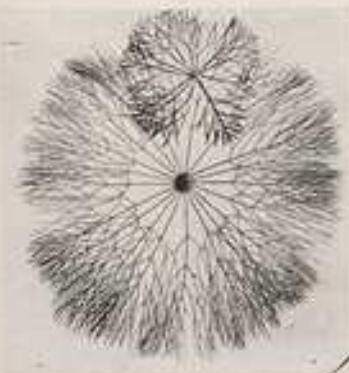
water surface, *L. aquatica* produces thick stalks and whorls of finely divided leaves that can reach 4½ in. (12 cm.) or more in diameter and consist of about 18 to 22 leaves each. A red coloration is often noticeable in the submerged stems, especially on the side towards the light if the plant is growing along the surface of the water. But the red colour never spreads into the leaves themselves.

This species of *Linnophila* needs a loose, soft

and nutritious substrate in which the fine white roots can easily spread out. I tested growth conditions for this plant, using the same lighting for each test but placing some plants in a 'poor' substrate, and they grew noticeably less well than the plants in a more nutritious base. They do well in a substrate made up of unwashed coarse river sand, some fine peat, a small quantity of black soil and some small pieces of clay.

L. aquatica does, however, need extremely powerful lighting. We can see this by the way in which the plant heads show greater growth the closer they come to the water surface. With the correct amount of lighting and just a few floating plants on top of the water this *Linnophila* grows rapidly in long garlands. Lighting by fluorescent tubes, or by tungsten bulbs combined with fluorescent tubes, gives good growth. A normal tropical aquarium temperature of 75-78°F (24-26°C) suits the plant well.

Since the plant normally grows very quickly in the tank it must be regularly shortened, so it is best to place it against the back of the tank or along the sides. I think those who have cultivated *Linnophila aquatica* for any length of time would agree that this 'shortening' process does, in time,



Leaf whorls of *Linnophila sessiliflora* (top of picture) and of *L. aquatica* together for comparison.

Continued on page 392



by
ARPEE

Personal COMMENT

I HAVE written recently about the need to change the water in tropical marine aquaria at regular intervals in order that excessive organic aggregations, accompanied by pH imbalance, may be avoided. The problem does not seem to be as critical in the case of freshwater aquaria, but I have not come across any mention of this for some long time in so far as ponds are concerned. If, indeed, there is a validated need to change pond water at all, the frequency will be determined by the various factors of locality which apply to the pond itself, such as its content of fish, the type of fish, the amount of plant growth, and its orientation as regards the sun etc.

Only the fanatic would seek to find an excuse to clean a pond out when there are more attractive pursuits within the hobby, but it is a job which has to be faced up to every so often. There are those who make a clean sweep and who remove every fish and every drop of water, and then begin all over again. If I thought this did a scrap of good I would probably steel myself to the prospect, but I find that by dividing the job up and staggering the elements so derived over a period, the body suffers less physical stress, and I suspect that the inmates of the pond undergo minimal disturbance and avoid potential damage. It should be remembered that it is not everybody who has a pool which can actually be cleaned out: some ponds are far too large for the attempt to be anything but a mammoth undertaking, and in other cases even small pools may have become physically inaccessible for this particular process because some new garden feature has been added or a bush or tree has grown in an unpredicted fashion.

The main subdivisions of effort are probably renewal of water, division or removal of plants and the culling of fish. Depending on the individual pool one might add the removal of undesirable species of fish and of 'accidentals' like newts, frogs and the insect predators. There are precautions which one can take in the construction of a pond which will simplify some of these tasks, and they should be carefully considered. If you believe, as I do, that a total water change is something to be avoided, a sump will enable you to control such changes as you decide to bring

about. A quarter of the contents can be allowed to drain away, and topping up via a hose or by natural means may then be proceeded with. Those with pools of plastic sheeting may use a hose as a siphon if they have constructed an above-ground system, but of course the end in the pond should be covered with mesh of some sort to prevent blockages; the size of fish, including fry, should be taken into account in determining the gauge of the mesh.

The culling of fish in the average garden pool is best left to Nature, and so long as serious breeding is not contemplated, it is not a process which need cause much worry. If breeding of pond fish is undertaken, dedicated pools or tanks are necessary, and they need to be so constructed that filling, emptying, cleaning and netting can be carried out simply and logically.

The third main activity in pond servicing is the control of plants, and here there are three subdivisions, according as to whether the plants are floaters, submerged or marginals. The former can be thinned with a tiddler net. Most unanchored submerged plants can be removed with a garden rake, and the boxes containing water lilies should be removed periodically for the clumps to be split up and replanted. Many pool keepers find that it is the marginals which tend to get most out of hand, and indeed some of them are best avoided altogether. Water mint is a terribly rampant subject, and many others will occur to readers. The rushes and reeds and grasses which form such hefty basal clumps need careful consideration. Those which are underwater may often be separated with the use of long-handled garden shears or pruners, and those by the water's edge, often dry at the height of summer, may be reduced by gentle sawing. Great care is necessary here if the plants are in a sheeting pool, and it is wise to saw away from the water's edge, rather than towards it. This can be risky, though, and it may prove to be better to raise the water level to soften the growth, and then to apply the garden shears, which usually have rounded ends and are less likely to damage the lining of the pool.

All the above operations can be separated by seasons or even years, but there is one job which needs doing every year, and this may need repetition during each year. It is the removal of some of the deposit of mud and organic matter on the floor of the pool, and this usually takes the form of a black ooze which is both unattractive and difficult to handle. I have found that a large daphnia net successfully raises huge quantities of this to the surface, whence it can be tipped into a bucket or used as a mulch on plants around the pool. Perhaps the compost heap or the vegetable garden is the best repository, because it does look pretty horrible.

There may be readers who disagree with this phased maintenance, but I have found it tolerably workable in an informal garden pool containing both native fish and goldfish. At one time I was more fussy about servicing and I found that there was a major setback each time I did it. This rather lazy method described above has certainly been of benefit to the plants and the fish have done as well as they could have been expected to do. Losses there certainly have been, but there is no evidence to suggest that these would not have occurred anyway.



I know of an aquarium of about 25 gallons capacity in which there are over 40 species of tropical fishes. By normal standards it should look muddled and incongruous and unattractive, but it so happens that by some strange chance it is quite the opposite. I would not recommend a repetition of the experiment so far as the average fishkeeper is concerned, because I believe the success in this case was accidental rather than contrived; lightning seldom strikes twice in the same place. An agglomeration of this sort is most likely to prove useful in a dealer's foyer, and if only single fish of each species are included, the uninitiated will find it most pleasurable to attempt identification of the less-commonplace exhibits.

In the home this approach may appeal to some, but it is more likely that the lady of the house will appreciate very much more a collection of fishes which goes with the curtains. Interior decoration has reached something of a science in recent years, and it is not altogether unreasonable that fish

tanks and their contents should be compatible with their immediate surroundings. Some home planners have more acute colour sense than others and they will demand that certain tones should predominate: it is one thing to demand that because the curtains are blue, we should be able to produce a tank of blue fish, and quite another matter to assemble a tankful of creatures which will fulfil this requirement in a generally successful manner.

In this column and some future ones I will attempt a review of some of the main colour groupings: if you have any particular requests for priority for any given colour, please write.

I suppose that red is the colour most sought after and this is probably because it is so outstandingly well represented by some of the most amenable and trouble-free fishes which we know. My first choice would be for the red platy or for the red platy-red swordtail cross. These fish, which range from 1½ to 2½ inches, cover quite a range of shades of red and the quality is from the metallic to a most wonderful velvet texture. One should take texture into account, as one would consider furnishing fabrics, and for my money the depth of some of the less vivid shades of the platys is in a class of its own. Fish of this calibre are not to be had from the average dealer, and you may have to obtain the shades you want from the club breeder.

It is worth shopping around for these fish, as they make wonderful exhibition specimens, and are most popular with some of our most prominent aquarists. Take care in introducing platys to new surroundings, as they often suffer from shimmying after transfer. A lift of temperature by some 5°F may well overcome this puzzling nuisance. Do



Photo: Angling Photo-Service

A large aquarium displaying a selection of tropical aquarium plants was staged at The Aquarium Show by Mr J. Allen of Amphill Aquatics, exhibitors at the Show.

not use swordtails unless you intend to employ only one species, as individuals are extremely vicious to smaller fishes.

A small group of *Hyphessobrycon* species will merge well with the platys, and the minor tetra, the bleeding heart tetra and the serpa tetra come to mind (*H. callistus minor*, *H. callistus rubrostigma* and *H. callistus serpa*). Only the second named grows over 2 inches, and all are well behaved and undemanding by way of food. You should include several times as many of these as of platys, as these are altogether slighter fishes, and they need to assert their presence by virtue of numbers. Their colours, too, are much less intense than those of the platys, with perhaps the minor having the edge over the others. The overhead lighting needs watching when using these species, as too high a level of illumination can give a washed-out effect.

Neon and cardinal tetras (*H. innesi* and *Cheirodon axelrodi*) are not, or course, completely red, but their effect in shoals of a dozen or so fish cannot be discounted, and if twice this number can be achieved you will have at your disposal one of the finest sights available to the aquarist. Hardy, but becoming steadily more expensive, these are one of our all-time favourites, and they usually live for far longer than one would imagine when their size of a little over an inch is taken into account.

A slightly less vivid fish, but still a species to be regarded as giving a predominantly red effect, is

the glowlight tetra (*H. gracilis*), which is of much the same size as the cardinal and requires similar treatment. Its redness is certainly offset by a silvery transparency in some lighting conditions, but in others the former colour virtually takes over. Here we have a metallic light red, well away from the basic colour of the platys.

To pick up their matt coloration one turns to the red-tailed black shark (*Labeo bicolor*) and the red-finned shark (*L. erythrinus*), whose bodies are a distinct and unusual foil to the redness of fin, and these can be recommended as small specimens, though they can become unpredictable when fully adult. If selected it is perhaps advisable to have only one specimen per tank.

The bloodfin, the flame fish and the red phantom tetra may also be used in association with the above, but their impact is much less, and only the bloodfin could be counted as a really good foil or complementing fish—it has an unusual greyish blue body, and would look well in a small shoal. The fire rasbora is just a possibility, (but tends towards brown in some conditions, and is not quite such a good settler as the others. I would not recommend the fighter for your red collection, as it is comparatively short-lived and its temperament is most unreliable. What a pity this is, as there are some of the best reds in the repertoire in this wonderful species. Don't use red plants in your tank of red fishes, though. But they might do for some other colour scheme.

Limnophila aquatica

continued from page 389

retard the plant growth quite visibly. Partly, no doubt, this is due to some damage being caused to the plant tissue, but also to the fact that the shortened plants are farther from the source of light. The result is considerably smaller leaves, but if the plants are allowed to return to their normal growth they will also return to their normally large leaf size.

Since the stems grow quite thick it is not

difficult to cut them. Practically every one of these stem parts gives new growth if left for a time and these will develop into young plants in due course. Large, fully grown plants will, if kept in a rather high temperature under powerful lighting, develop long, rather bare shoots some little way above the bottom. These shoots, which bear no leaves, can reach a length of 4-8 in. (10-20 cm.) and creep as 'offshoots' over the bottom; where they make contact with the substrate new roots develop and a new plant will grow.

So, if you can provide its requirements—fairly high temperature, clear water and powerful lighting—you will find in *Limnophila aquatica* a most beautiful aquarium plant with bright green, large whorls of finely divided leaves like some exotic tropical jewel.

A GROUP of enthusiastic livebearer breeders have now formed THE BRITISH LIVEBEARER ASSOCIATION. The aims of the Association are 'to bring together the vast multitude of individuals whose main interest is these unique species

of fishes; to provide a panel of specialist judges and speakers; to promote regional sections and to generally liaise with each other for the interchange of fish etc.' Anyone interested or requiring further information should contact either Mr R.

Lawson, secretary, 84 Grosvenor Road, Jesmond, Newcastle-upon-Tyne (phone 0632 812625) or the chairman, Mr J. A. Laidler, 19 Alb Avenue, Gosforth, Newcastle-upon-Tyne (phone 0632 850350).

Allies in the Battle Against Algae

By CLIFF HARRISON

Photographs by the author

IN a well-run aquarium, algae should present no problem'. That is the theory at least, but in practice it can be very difficult—if not impossible—to keep a tank completely free of any kind of algae growth. Whatever arrangements are made, there can never be absolute uniformity of lighting throughout the whole aquarium, and for all seasons of the year: the plants themselves will rarely maintain a perfectly steady rate of growth in any case. And the glass facing a window will inevitably acquire a thin coating of algae, thanks to this source of additional light, even in the winter months. In fact the problems associated with beating algae by regulating the amount of light alone can form a vicious circle: as you change the conditions for the algae, so you also change them for the rooted plants, and this in turn will have an effect on the algae.

I think that one has to accept the production of a certain amount of the finer types of algae in the home aquarium. The coarser types—commonly termed 'blanket weed' or thread algae—can become a headache if unwittingly introduced and subsequently allowed to choke the other plants: physical removal is the only answer here, I am afraid. The fine, soft forms can build up quite quickly on the viewing panels of the aquarium, on the thermostat tube and filter pipes, on rock-work and even on the leaves of the longer-established plants (or slow-growing ones like the



As the aquarium glass receives the treatment the rasping mouth of this suckermouth catfish can be seen dealing with the algae

cryptocorynes). A long-handled scraper is usually used on the glass to clear the growth, but this is not suitable elsewhere. Some people have even used chemicals, principally permanganate of potash or chlorine-based compounds, but this is not a way that could be generally recommended in view of the potential hazards to the aquatic life—fish and plants alike. In any case, chemicals are likely to offer only a temporary remedy, and even then only for the forms of algae, such as those in 'green water', that are suspended in the water.

Our realisation that there is not much that we personally can do to rid the aquarium of unwanted algae does not necessarily mean that nothing whatever can be done. Rather, the reverse is true: provided that we can identify them correctly, we have many allies who will solve the problem for us—allies which rely principally or exclusively on algae for their diet.

First, mention must be made of a number of creatures that have historically been classed as being suitable for ridding the aquarium of unwanted algae, but which have in reality turned out to be a little less than ideal for any of a number of reasons.

Snails. These have long been regarded by novices as essential for including in the aquarium, but this is an opinion rapidly revised in the light of experience. Snails certainly do eat algae in some quantity from the glass and the surface of the plant leaves: unfortunately, with the exception of Malayan burrowing snails and apple snails, they will also remove the outer layer of the leaf itself, resulting in the death or disfigurement of the plant. Once snails are introduced into an aquarium, their eradication can be very difficult to achieve. Their eggs can go almost un-noticed on newly introduced plants, and special chemical remedies can have unfortunate side-effects: one friend, a couple of years ago, found the treatment was just as lethal to his magnificent cryptocorynes as it was to the snails! If snails do present a problem you will find that some of the larger botias are avid snail-eaters, though these botias do have a tendency to bully the smaller fish in the aquarium.

Mollies. Mollies tend to be recommended by aquatic dealers to people setting up their first tank on the basis that they are algae-eaters. This is really only a half-truth. Mollies (being principally vegetarian) will certainly eat the longer, soft forms of algae, but their preference will usually be for the dried foods given to the other fishes in the aquarium. In fact, if you look closely you will realise that mollies have the wrong design of mouth for scraping off the fine algae (compare with the mouths of sucker-mouthed catfishes), and if they had to rely on it as their sole source of nourishment they would be in for a lean time indeed.

Corydoras catfish. Many novices seem to be under the misapprehension that corydoras 'cats' will clear algae from the aquarium, along with all the other unwanted 'rubbish'. Perhaps one explanation for this might be that these cats will

often be seen foraging over algae-covered rocks for small particles of food—giving the impression that they are being attracted to the algae itself. In fact this is one thing they show no interest in whatsoever, even when hungry.

We can now look at those creatures that have a positive role to play in keeping the aquarium free of unwanted algae. There is probably no single 'ideal' for all situations, so selection must be made on the basis of individual requirements, one's financial state and personal taste.

Apple snails. The several species of apple snails commonly available are safe with most plants provided that the snails are kept well fed on other things: they prefer soft algae, but will readily accept flake foods when necessary. Apple snails are best known for their ability to support quantities of Infusoria (for young fry), and in this role they are usually fed on lettuce leaves that have been 'softened-up' by being frozen for a few hours in a refrigerator ice box, or alternatively have had boiling water poured over them. These particular snails can become quite enormous, well exceeding the size of a golf ball, and as can be imagined have appetites to match. One unusual feature is where they lay their eggs—out of the water on the glass sides or even on the hood itself.

Sucking loach (*Gyrinocheilus aymonieri*). This is one of the most popular and least-expensive of the sucker-mouthed fishes, though its coloration of variable dark blotches on a pale-brown background does not make it a particularly spectacular fish. Commonly purchased at around 1½ inch body length, it will rapidly fatten and grow if conditions are to its liking, reaching 5 inches or more in the aquarium. Unfortunately a rather aggressive nature often materialises as it gets larger, and it will chase other fish away from its territory, sometimes attaching itself to their sides with its sucker mouth. The sucking loach is an interesting, if rather shy, fish which is also a quite efficient consumer of algae. It is undemanding in terms of water conditions and temperature, and will readily accept dried flake foods when offered.

Otocinclus catfishes. There are a number of species within the genus *Otocinclus*, and they are all very similar in size and shape, differing principally in the arrangement of their dark markings on a ground colour of light brown to olive green. They remain very small—perhaps 2 inches, usually less—and are by nature very shy and placid; they are therefore ideal for small aquaria containing neons, and other fishes of a similar size and disposition, but their capacity for clearing algae is naturally rather limited. The principal species are *Otocinclus affinis* and *O. arnoldi*; some difficulty may be experienced in finding dealers with them in stock, and they are usually rather expensive—around double the price of the sucking loach.



An 'apple snail' photographed out of water with a 10p coin for comparison of size.

Sucker-mouthed catfishes. There are a number of examples within the family Loricariidae that are commonly termed sucker-mouthed catfishes, principally of the genera *Hypostomus* (*Plecostomus*), *Xenocara* and *Ancistrus*. The main reason for this rather ambiguous nomenclature is that precise identification is usually difficult or impossible—contrast with *Loricaria* and *Otocinclus* 'cats', which belong to the same family but where the genus, if not the individual species as well, is readily identifiable. These sucker-mouthed catfishes are easily the most efficient algae-eaters, partly on account of their size (species can range between about 3 inches and well over 12 inches, so be careful if you are not sure what you are buying), and partly because of their unusual mouth structure. The roughness of the mouth and lips, which rasp the algae from rocks and leaves can be seen, while the fish is hanging on the glass. I tend to move my own specimens around from tank to tank as required, and the absence of a little 'bristlenose' from my main sitting room aquarium will be obvious within a few days by the appearance of a thin film of algae on the front glass.

Despite the size that some of them can attain, these catfishes are of a fairly peaceful disposition with other aquarium fishes; unfortunately the larger species tend to fight or 'spar-up' amongst themselves when adult, and the rule should therefore be just one per tank. They are principally vegetarian, but will occasionally go for dried foods and even tubifex worms. If a fish dies in the aquarium, a sucker-mouthed cat will almost certainly be found with its mouth firmly attached to the body, removing particles of flesh: do not

therefore, as many other people have done, make the mistake of automatically assuming that the catfish was responsible for its death.

Sometimes in their search for fresh pockets of algae these fish may uproot a plant or two, or perhaps disturb the surface of the gravel; surely this is a very small disadvantage for a fish that performs its tasks so well. Unfortunately these catfishes are expensive and not always readily available; one can pay upwards of £2 for quite small specimens.

'Sharks'. There are a number of species of aquarium fishes known as 'sharks'—principally the red-fin, the red-tail and the black shark. The first two, usually seen at about 3-4 inches in length, are ideal for most community aquaria, and whilst they will rarely trouble any other fishes they are constantly chasing each other around in a playful way (rarely is any damage done to fins etc.) The black shark is rather more sedate and gets much larger, 12 inches being common, and therefore really needs a tank on its own.

As algae-eaters, the sharks are only moderate consumers; the red-fin and red-tail black sharks will be seen almost constantly running their mouths over the rocks and leaves in the aquarium in their search for algae. Unfortunately they do seem to have a preference for other foods—dried or live—that are put into the aquarium, and it is probable that algae alone would be an inadequate diet for them. Red-fin sharks are moderately priced, the red-tail black is rather more expensive; both are popular choices for the home aquarium on the basis of their character and activeness, quite apart from their value as algae-eaters.

Book REVIEW

YOUR ANGEL FISH by Jack Hems.
32 pages, 13 colour photographs,
4 line drawings in text. Colour-
master International (Photo Preci-
sion Ltd.) St Ives, Huntingdon.
1974. 30p.

IN the March issue of PFM I reviewed *YOUR AQUARIUM*, a companion volume in the Colourmaster Pet series, also from the pen of Jack Hems. *YOUR ANGEL FISH* is a more specialised essay, and it deals most effectively with the requirements of these fascinating and often frustrating fish. The nine sections cover such aspects as the varieties of angels, their behaviour, feeding and breeding. The type of aquarium, its

furnishings and fittings, is also featured, together with a miscellany of basics. The volume closes with notes on some of the commoner diseases and possible successful treatment. Anyone who has kept and bred angel fish will acknowledge that this is an entirely adequate presentation, and it should enable those who have failed to do well with them to make good their shortcomings. The section on breeding will be of particular interest to those who have attempted to breed this species, and Mr Hems lays great emphasis on the need for scrupulous cleanliness of water during this operation. He then proceeds to point out just why so many would-be breeders fail to use Infusoria successfully, and I cannot recall having seen such clear advice on the subject before. I am not an advocate of using Infusoria with species large enough to take newly

hatched brine shrimp, however, as with these there is minimal chance of pollution.

Not much stress is laid on the modern varieties of angel, and most of the excellent illustrations are of the natural type, for which praise must go to somebody. To be fair, perhaps the purchaser would have expected more pictorial evidence of some of the mutations, but Mr Hems does point to their sensitivity and lack of stamina, and maybe for this reason the book deals mainly with the type. On page 24 there is a picture of a trio of angels: it is remarkable even in this day of outstanding colour photography, and I hope readers will find it as satisfying a composition as I did.

The production is fully in keeping with the high standard already set by the remainder of the series, and I only found one misprint. The style,

as one would expect from the writer, is clear and economical, and very readable. The price is right, too. If, as seems possible, we shall soon have to home-produce our aquarium fishes, this little volume will prove a best seller, so I recommend a quick visit to the booksellers, before it is too late...

COLLECTING WORLD SEA SHELLS by Alan Major. 187 pages, 12 colour plates by Tom Scott and over 200 line illustrations by Barbara Prescott. Bartholomew, Edinburgh. 1974. £2.95.

TODAY'S odd world is a direct encouragement for folk to collect things, be they raggs or bottles or bones. In some cases the articles have an intrinsic value, and in others there is none, and the collector gets satisfaction from possession of something different, as well as temporary relief from the pressures of the daily round. There is nothing new in collecting sea

shells, but in recent years there does seem to be something of a resurgence of the hobby as an activity in its own right. The marine aquarist certainly has his eyes on all this because many of the subjects form extremely interesting and attractive additions to his tanks, both within and outside the water.

This book is a highly practical guide to all this, and even those who are only mildly interested in the subject will find much absorbing material within its pages. It starts with a glossary, which therefore gets read. Glossaries at the end of books are often passed over, but this volume has been well planned. The reader is then introduced to the art of collection and to the nature of the mollusc and its shell. The remainder of the book, apart from a brief bibliography, is dedicated to a description of the species, admirably supported by some fine photographs and a series of beautifully executed line drawings.

I found this a pleasing volume from beginning to end. It is pleasant

to handle and the pages are made of real paper—they will stand up to the hard use they will get at the hands of the practitioner, and there is room to scribble in marginal notes if you are so inclined. The print is eminently readable, and it is something of an unusual experience to come across a text so free of the irritating spelling errors and non-sequiturs which seem to plague literature from some publishers. The author records his gratitude to his wife for the proof reading, and I will second this most willingly.

The conservationists will regret many forms of collecting, but shell collecting can be carried out in such a way that no living specimens are ever taken. It would be too much to expect this to be adhered to in all cases, but Alan Major does give guidance about how to satisfy one's acquisitive instincts without offending the principles of preservation which concern us all. An excellent and altogether tasteful volume which has a quiet authority all of its own.

ROY PINKS

What's New?



The Aquasphere

Spherical Aquarium

AN unusual free-standing unit suitable for housing tropical or coldwater fishes, marines or other forms of aquatic life, has been introduced by Volumatic Limited of Coventry, sole distributors of which are the Newform Company, 15 Sussex Gardens, Chessington. This is the **Aquasphere**, consisting of a transparent rigid acrylic sphere mounted on a plastic-coated wire base. The sphere is in two halves and the top half incorporates four specially designed access 'ports'. The overall height of the Aquasphere is just over 2 ft, the diameter is 21 inches and the floor area occupied by the stand is 2½ sq. ft. The sphere is supplied complete with air pump, filter, heater, thermostat and thermometer. The manufacturers suggest that the unit is not only suitable for the home but for restaurants, hotels, exhibitions and office foyers, and in order to cater for such users, the Newform Company are offering them a complete

installation and routine maintenance service. The unit is guaranteed for a year and costs £35.00 complete, VAT and a nominal carriage charge extra.

Fish House Insulation

FOR the heating-economy conscious (as we must all be these days) a number of interesting new items were on display at the M. J. Scott & Son (Aquatic Division) Stand at this year's Aquarium Show. **Double Glazing Kits** were being shown in use in the Company's demonstration fish house, which consist of pre-cut panels of a plastic material, Melinex polyester film, that very much resembles cellophane initially and has the same excellent light-transmitting properties and lack of visual distortion of that substance. When warmed with a fan heater or domestic electric iron, however, the plastic material hardens to form a stiff but flexible substance for use as an inner pane that will cut the heat-

loss experienced through window glass. The material has been tested and has been in use for a period of over 8 years and is said to have suffered no deterioration during that time. Kits are supplied complete with double-sided adhesive fixing tape and are being offered at top per square foot, VAT inclusive. The dimensions of the windows involved must be stated and orders sent to M. J. Scott & Son, (Lynwood House, Woodside Close, Amersham, Bucks).

This same Company also have

available **Tank Insulation Kits** consisting of pre-cut panels of Purfoboard, a material in each square foot of which the temperature loss per hour is reduced to 0.16 of a degree Fahrenheit. The panels cover the base, sides and rear of the tank and, for breeding units, a removable front panel can be supplied as an extra. The kits are sent post free complete with adhesive for fixing at a cost of 85p per foot run of tank for tanks up to 15 in by 15 in (VAT inclusive). Larger sizes can be quoted for.



JUDGES at the **CARDIFF AS Open Show** were Mr J. Stillwell, Mr J. Wheeler, Mr W. Rundle, Mr A. Ibbertson and Mr P. Jordan. Best Tropical Fish in Show was exhibited by Mr A. C. Tull (Salisbury); Mr & Mrs C. Harding from Cardiff gained the most points in the show and Best Coldwater Fish award with their entries. Remainder of results:

R: 1, Mr J. Egan; 2, Mr & Mrs Guthrie; 1, Mr D. Reed, C: 1, Mr & Mrs C. Harding; 2, Mr B. Pender; 3, N. & C. Bowth, C: 3, Mr K. Taylor; 2, Mr R. Neuman; 3, Mr C. Turner, D: 1 & 2, Mr S. Compton; 3, Mr R. Dawe, D: 1, Mr C. J. Davies; 2, Mr B. Purdy; 3, Mr P. Thomas, D: 1, Mr C. Turner; 2, Mr R. A. Poole; 3, Mr D. Warmant, D: 1, Mr & Mrs C. Harding; 2, Mr C. Morrison; 3, Mr R. Dawe, E: 1, Mr P. Thomas; 2, Mr N. Shepherd; 3, Mr D. Warmant, E: 1, Mr & Mrs Harding; 2, Mr M. Gray; 3, Mr R. Newton, F: 1 & 2, Mr C. Morrison; 3, Mr B. Purdy, G: 1 & 2, Mr & Mrs Harding; 3, Mr N. Jones, H: 1, Mr & Mrs Harding; 2, Mr A. M. Smith; 3, Mr R. S. Wigg, I: 1, Master J. Edwards; 2, Mr R. G. Purdy; 3, Debbie & Susan Guthrie, J: 1, Mr & Mrs Harding; 2 & 3, Mr R. A. Poole, K: 1 & 3, Mr J. J. Edwards; 2, Mr K. Taylor, L: 1, Mr A. C. Tull; 2 & 3, Mr W. Gibson, M: 1 & 3, Mr D. Warmant; 2, Mr H. Chick, N: 1, Mr C. Turner; 2, Mr & Mrs Guthrie; 3, Mr & Mrs Harding, O: 1, Timothy & Donna Sklar; 2, Mr N. Shepherd; 3, Carl & Donna Price, P: 1, Mr & Mrs Guthrie; 2, Mr R. S. Wigg; 3, Master J. Edwards, Q: 1, Mr N. C. Bowles; 2, Mr E. Hurley, R: 1, Mr W. G. Best; 2, Mr E. Newton; 3, Mr G. Lewis, S: 1 & 2, Mr W. G. Best; 3, Mr A. M. Smith, T: 1 & 3, Mr A. M. Smith; 2, Mr C. Turner, X: 1, Mr & Mrs Harding; 2, Mr S. Compton; 3, Mr D. Warmant, X: 2, 1, Mr R. A. Poole; 2 & 3, Mr C. Morrison, Y: 1 & 2, Mr & Mrs Harding; 3, Mr C. Rupert, Y: 1, 2 & 3, Mr C. Rupert, W: 1 & 2, Mr C. Rupert; 3, Mr & Mrs Harding, Z: 1, Mr & Mrs Harding; 2, Mr R. Dawe.

Readers' Queries Answered



Not All Placid

After seeing some Pseudoxiphophorus bimaculatus at the Aquarium Show I would very much like to get some for my community tank but I have been advised that they would not be suitable livebearers. Is this possible?

The two-spot livebearer is generally looked upon as a very predatory species. Livebearers are not all of the placid guppy, platy and mollie type. They can be moderately troublesome, like the swordtail, or like *Belontiex belizanus*, the pike top minnow, which is a livebearer that can ingest full-grown guppy females without problem! At best, *Pseudoxiphophorus bimaculatus* tend to be quarrelsome and you would be better advised not to introduce them into a peaceful community of small- to medium-sized fishes.

Shallow Water Problem

Instructions given for breeding fighters say use only 6 inches of water. I was all set to do this when I realised my heater/thermostat is too long for this to be feasible. I know there is something about putting it in a jar but I would be glad if you could give me exact instructions as I

don't want either to break it or have to get a new heater specially.

The heater/thermostat should be placed in a glass jar tall enough to accommodate it and the jar then placed in the shallow water of the aquarium. When the jar is filled with water and the required amount placed in the tank the thermostat in the jar can be regulated in exactly the same way as if it were in the tank itself. If this method is used, however, it is necessary to remember to keep the jar well topped up with water pre-heated to the exact temperature. The rate of evaporation from a jar used in this way tends to be very high.

Peat Base

How do I introduce peat into my aquarium tank without having it floating all over the tank? I want to put it under the plants but I have no success in keeping it there.

Try sewing the peat into a nylon net bag. You can make the bag of a size suitable for your tank and sew up the open end after the peat has been placed in it. Use horticultural peat that has been well soaked previously and cover the bag over with your gravel.

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as one would expect from the writer, is clear and economical, and very readable. The price is right, too. If, as seems possible, we shall soon have to home-produce our aquarium fishes, this little volume will prove a best seller, so I recommend a quick visit to the booksellers, before it is too late...

COLLECTING WORLD SEA SHELLS by Alan Major. 187 pages, 12 colour plates by Tom Scott and over 200 line illustrations by Barbara Prescott. Bartholomew, Edinburgh. 1974. £2.95.

TODAY'S odd world is a direct encouragement for folk to collect things, be they raggs or bottles or bones. In some cases the articles have an intrinsic value, and in others there is none, and the collector gets satisfaction from possession of something different, as well as temporary relief from the pressures of the daily round. There is nothing new in collecting sea

shells, but in recent years there does seem to be something of a resurgence of the hobby as an activity in its own right. The marine aquarist certainly has his eyes on all this because many of the subjects form extremely interesting and attractive additions to his tanks, both within and outside the water.

This book is a highly practical guide to all this, and even those who are only mildly interested in the subject will find much absorbing material within its pages. It starts with a glossary, which therefore gets read. Glossaries at the end of books are often passed over, but this volume has been well planned. The reader is then introduced to the art of collection and to the nature of the mollusc and its shell. The remainder of the book, apart from a brief bibliography, is dedicated to a description of the species, admirably supported by some fine photographs and a series of beautifully executed line drawings.

I found this a pleasing volume from beginning to end. It is pleasant

to handle and the pages are made of real paper—they will stand up to the hard use they will get at the hands of the practitioner, and there is room to scribble in marginal notes if you are so inclined. The print is eminently readable, and it is something of an unusual experience to come across a text so free of the irritating spelling errors and non-sequiturs which seem to plague literature from some publishers. The author records his gratitude to his wife for the proof reading, and I will second this most willingly.

The conservationists will regret many forms of collecting, but shell collecting can be carried out in such a way that no living specimens are ever taken. It would be too much to expect this to be adhered to in all cases, but Alan Major does give guidance about how to satisfy one's acquisitive instincts without offending the principles of preservation which concern us all. An excellent and altogether tasteful volume which has a quiet authority all of its own.

ROY PINKS

What's New?



The Aquasphere

Spherical Aquarium

AN unusual free-standing unit suitable for housing tropical or coldwater fishes, marines or other forms of aquatic life, has been introduced by Volumatic Limited of Coventry, sole distributors of which are the Newform Company, 15 Sussex Gardens, Cheshington. This is the **Aquasphere**, consisting of a transparent rigid acrylic sphere mounted on a plastic-coated wire base. The sphere is in two halves and the top half incorporates four specially designed access 'ports'. The overall height of the Aquasphere is just over 2 ft, the diameter is 21 inches and the floor area occupied by the stand is 2½ sq. ft. The sphere is supplied complete with air pump, filter, heater, thermostat and thermometer. The manufacturers suggest that the unit is not only suitable for the home but for restaurants, hotels, exhibitions and office foyers, and in order to cater for such users, the Newform Company are offering them a complete

installation and routine maintenance service. The unit is guaranteed for a year and costs £35.00 complete, VAT and a nominal carriage charge extra.

Fish House Insulation

FOR the heating-economy conscious (as we must all be these days) a number of interesting new items were on display at the M. J. Scott & Son (Aquatic Division) Stand at this year's Aquarium Show. **Double Glazing Kits** were being shown in use in the Company's demonstration fish house, which consist of pre-cut panels of a plastic material, Melinex polyester film, that very much resembles cellophane initially and has the same excellent light-transmitting properties and lack of visual distortion of that substance. When warmed with a fan heater or domestic electric iron, however, the plastic material hardens to form a stiff but flexible substance for use as an inner pane that will cut the heat-

loss experienced through window glass. The material has been tested and has been in use for a period of over 8 years and is said to have suffered no deterioration during that time. Kits are supplied complete with double-sided adhesive fixing tape and are being offered at top per square foot, VAT inclusive. The dimensions of the windows involved must be stated and orders sent to M. J. Scott & Son, (Lynwood House, Woodside Close, Amersham, Bucks).

This same Company also have

available **Tank Insulation Kits** consisting of pre-cut panels of Purfo-board, a material in each square foot of which the temperature loss per hour is reduced to 0.16 of a degree Fahrenheit. The panels cover the base, sides and rear of the tank and, for breeding units, a removable front panel can be supplied as an extra. The kits are sent post free complete with adhesive for fixing at a cost of 85p per foot run of tank for tanks up to 15 in by 15 in (VAT inclusive). Larger sizes can be quoted for.



JUDGES at the **CARDIFF AS** Open Show were Mr J. Stillwell, Mr J. Wheeler, Mr W. Rundle, Mr A. Ibbertson and Mr P. Jordan. Best Tropical Fish in Show was exhibited by Mr A. C. Tull (Salisbury); Mr & Mrs C. Harding from Cardiff gained the most points in the show and Best Coldwater Fish award with their entries. Remainder of results:

R: 1, Mr J. Egan; 2, Mr & Mrs Guthrie; 1, Mr D. Reed, C: 1, Mr & Mrs C. Harding; 2, Mr B. Pender; 3, N. & C. Bowth, C: 3, Mr K. Taylor; 2, Mr R. Neuman; 3, Mr C. Turner, D: 1 & 2, Mr S. Compton; 3, Mr R. Dawe, D: 1, Mr C. J. Davies; 2, Mr B. Purdy; 3, Mr P. Thomas, D: 1, Mr C. Turner; 2, Mr R. A. Poole; 3, Mr D. Warmant, D: 1, Mr & Mrs C. Harding; 2, Mr C. Morrison; 3, Mr R. Dawe, E: 1, Mr P. Thomas; 2, Mr N. Shepherd; 3, Mr D. Warmant, E: 1, Mr & Mrs Harding; 2, Mr M. Gray; 3, Mr R. Newton, F: 1 & 2, Mr C. Morrison; 3, Mr B. Purdy, G: 1 & 2, Mr A. Mrs Harding; 3, Mr N. Jones, H: 1, Mr & Mrs Harding; 2, Mr A. M. Smith; 3, Mr R. S. Wigg, I: 1, Master J. Edwards; 2, Mr R. G. Purdy; 3, Debbie & Susan Guthrie, J: 1, Mr & Mrs Harding; 2 & 3, Mr R. A. Poole, K: 1 & 3, Mr J. J. Edwards; 2, Mr K. Taylor, L: 1, Mr A. C. Tull; 2 & 3, Mr W. Gibson, M: 1 & 3, Mr D. Warmant; 2, Mr H. Chick, N: 1, Mr C. Turner; 2, Mr & Mrs Guthrie; 3, Mr & Mrs Harding, O: 1, Timothy & Donna Sklar; 2, Mr N. Shepherd; 3, Carl & Donna Price, P: 1, Mr & Mrs Guthrie; 2, Mr R. S. Wigg; 3, Master J. Edwards, Q: 1, Mr N. C. Bowles; 2, Mr E. Hurley, R: 1, Mr W. G. Best; 2, Mr E. Newton; 3, Mr G. Lewis, S: 1 & 2, Mr W. G. Best; 3, Mr A. M. Smith, T: 1 & 3, Mr A. M. Smith; 2, Mr C. Turner, X: 1, Mr & Mrs Harding; 2, Mr S. Compton; 3, Mr D. Warmant, X: 2, 1, Mr R. A. Poole; 2 & 3, Mr C. Morrison, U: 1 & 2, Mr & Mrs Harding; 3, Mr C. Rupert, V: 1, 2 & 3, Mr C. Rupert, W: 1 & 2, Mr C. Rupert; 3, Mr & Mrs Harding, Z: 1, Mr & Mrs Harding; 2, Mr R. Dawe.

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Readers' Queries Answered



Not All Placid

After seeing some *Pseudoxiphophorus bimaculatus* at the Aquarium Show I would very much like to get some for my community tank but I have been advised that they would not be suitable livebearers. Is this possible?

The two-spot livebearer is generally looked upon as a very predatory species. Livebearers are not all of the placid guppy, platy and mollie type. They can be moderately troublesome, like the swordtail, or like *Belontiex belizanus*, the pike top minnow, which is a livebearer that can ingest full-grown guppy females without problem! At best, *Pseudoxiphophorus bimaculatus* tend to be quarrelsome and you would be better advised not to introduce them into a peaceful community of small- to medium-sized fishes.

Shallow Water Problem

Instructions given for breeding fighters say use only 6 inches of water. I was all set to do this when I realised my heater/thermostat is too long for this to be feasible. I know there is something about putting it in a jar but I would be glad if you could give me exact instructions as I

don't want either to break it or have to get a new heater specially.

The heater/thermostat should be placed in a glass jar tall enough to accommodate it and the jar then placed in the shallow water of the aquarium. When the jar is filled with water and the required amount placed in the tank the thermostat in the jar can be regulated in exactly the same way as if it were in the tank itself. If this method is used, however, it is necessary to remember to keep the jar well topped up with water pre-heated to the exact temperature. The rate of evaporation from a jar used in this way tends to be very high.

Peat Base

How do I introduce peat into my aquarium tank without having it floating all over the tank? I want to put it under the plants but I have no success in keeping it there.

Try sewing the peat into a nylon net bag. You can make the bag of a size suitable for your tank and sew up the open end after the peat has been placed in it. Use horticultural peat that has been well soaked previously and cover the bag over with your gravel.

helping with the organisation. We are already thinking of next year's show and hope to stage it a little earlier in order to encourage all those livebearer enthusiasts who were saving their fish for the BAF and The Aquarium Show, to come and support us next year. Mr D. Pomeroy (TAS) exhibited the Best Fish in Show and Mr P. Wright (South Shields) the Best Guppy in Show. Mr J. Fortune (NGLS) won the TTAA trophy (male play) and the Robinson trophy (male mollie), and Mr & Mrs D. Renon (NGLS) won the FBAS trophy (male nov). Remainder of results:

Male mollie: 1, 2 & 3, Mr Fortune. Female mollie: 1, Mr Fortune; 2, Mr Wright (S. Shields); 3, Maura Fellows (Killingworth). Breeding pairs mollie: 1, Mr Costain (Priory); 2 & 3, Mr Dudley (Hastings). Breeders class mollie: 1, Mr Laydon (S. Shields). Male play: 1, Mr Fortune; 2 & 3, Mrs Hernand (Priory). Female play: 1, Mr Pomeroy; 2, Mr Costain; 3, Mr T. Marshall. Breeding pairs play: 1, Mr Parkes (Shildfield); 2, Mr T. Marshall; 3, Mr Costain. Breeders class play: 1, Mr Pomeroy; 2, Mr Dunstan (NYFS). Male swordtail: 1, Mr Turnbull (Mount Pleasant); 2, Mr & Mrs Sowebly (Mount Pleasant); 3, Mr Quinlan (Priory). Female swordtail: 1 & 2, Mr & Mrs Sowebly; 3, Mr Kerr (NGLS). Breeding pairs swordtail: 1, Mr Kerr; 2, Mr T. Marshall; 3, Mr & Mrs McKenna (Priory). Breeders class swordtail: 1, Mr & Mrs Fenswick; 2, Mr & Mrs Sowebly; 3, Mr Turnbull. Male nov: 1 & 3, Mr & Mrs Renon; 2, Mr Osoilo (Loughborough). Female nov: 1, Mr Osoilo; 2, Mr & Mrs Renon; 3, Mr Dunstan (Priory). Breeding pairs nov: 1, Mr Kerr; 2, Mr & Mrs Renon; 3, Mr Parkes. Breeders class nov: 1, Mr Daly; 2, Mr & Mrs Renon; 3, Mr Parkes. Male guppy swordtail: 1, Mr Wright; 2, Mr Gibson; 3, Mrs Howard. Male guppy swordtail: 1, Mr Fensick; 2, Mr Lawson; 3, Mrs Martinelli (DGG). Female guppy: 1, Mrs Howard; 2, Mr & Mrs Sowebly; 3, Mr T. Marshall. Breeding pairs guppy: 1, Mr Kerr; 2, Mr Fensick (NGLS). Breeders class guppy: 1, Mr & Mrs Sowebly; 2, Mr Laydon; 3, Mr Daly.

HASTINGS & ST LEONARDS

AS much enjoyed an amusing but very practical talk on setting up a tank for breeding given by three members from East London Aquarists & Pondkeepers Association. All species from barbs to cichlids were covered. Questions were asked by large numbers of members present and the answers gave further information to all. The table show for characins was judged by Mr D. Hunt (1 & 2), Miss H. French; 2, Mr P. Martin. The vice-chairman Mr L. Smith announced that the second Open Show held in September had been a great success and congratulated Mr M. Penfold for the wonderful result. At another meeting, Mr Colin George from Eastbourne announced the winners of the

FEDERATION ANNOUNCEMENT

ALL societies interested in discussing arrangements for Society Tableaux at future Aquarium Shows are invited to attend the FBAS meeting called solely for this matter on Saturday, 18th January next, 2-5 p.m. at Conway Hall, Red Lion Square, London WC1.

Home-Aquaria competition, which he had judged earlier in the year: 1, Mr A. L. McCormick; 2, Mrs M. Greig; 3, Mr C. Reed. Best junior entry, Gary Brookes; best plants, Mrs M. Greig.

LOUGHBOROUGH & DAS were hosts to Leicester AS and Bedworth AS for the inter-club show and social evening. Winners were:

Anabantids: 1, Mr J. Salisbury (B); 2, Mr G. Taylor (Lo); 3, Mr C. Pratt (B). Barbs: 1, Mr J. Salisbury; 2, Mr J. Parry (Lo); 3, Mr J. Williams (Lo). Novice egg-layers: 1, Mr M. Brambridge (B); 2 & 3, Mr T. Parry (Lo). Cichlids: 1 & 2, Mr J. Salisbury; 3, Mr C. Jackson (Lo). Catfish: 1 & 2, Mr D. White (B); 3, Mr C. Pratt (B). Characins: 1, Mr H. Richardson (Lo); 2, Mr R. Shakespeare (B); 3, Mr G. Howe (Lo). Livebearers: 1 & 2, M. B. White (B); 3, Mr G. Lindsey (Lo). Singletail goldfish: 1, and Best in Show, Mr H. Brakes (Lo); 2, Mr R. Shakespeare; 3, Mr G. Lindsey (Lo).

Bedworth achieved most points (2, Loughborough); 3, Leicester).

SUFFOLK AQUARISTS & PONDKEEPERS ASSOCIATION'S

annual show, Coloursfish 74, was a great success with well over 170 fish on display. The Association also held an inter-club show with Norwich, Ely & Thetford entering many extra fish. Norwich emerged victors of this.

Results at Coloursfish 74 were: Furnished aquaria: 1, Mr M. Hart; 2, Mr Norris; 3, Mr Turnbull. Characins: 1 & 2, Mr V. Green; 3, Mr K. Cocker. Rasboras: 1, Mr V. Green; 2, Mr L. Jerry; 3, Mr C. Breakwell. Loach: 1, Mr V. Green; 2, Mr C. Breakwell; 3, Mr Turnbull. Breeders: 1, Mr V. Green; 2, Mr C. Breakwell; 3, Mr F. Aulfin. Egg-laying swordtails: 1, Mr V. Green; 2 & 3, Mr F. Aulfin. Corydoras & Brokers: 1, Mr V. Green; 2, Mr C. Breakwell; 3, Mr L. Jerry. Danos: 1, Mr Fensick; 2, Mr V. Green; 3, Mr K. Cook. Singletail goldfish: 1, Mr H. Labyrinth; 1 & 3, Mr C. Breakwell; 2, Mr L. Jerry. Nov Goldwater: 1, 2 & 3, Mr A. Cook. Barbs: 1, Mr Thurlow; 2, Mr Woodland; 3, Mr V. Green. Swordtails: 1 & 2, Mr W. Card; 3, Mr C. Breakwell. Catfish: 1, Mr W. Card; 2, Mr K. Cocker; 3, Mr B. Mole. Mollies: 1, Mr C. Breakwell; 2 & 3, Mr W. Card. Twinstail goldfish: 1 & 2, Mr A. Cook; 3, Mr W. Card. Plants: 1 & 3, Mr W. Card; 2,

Mr L. Jerry. Male guppy: 1, 2 & 3, Mr K. Cocker. Cichlids: 1, Mr V. Green; 2, Mr Turnbull; 3, Mr Soren. Topiary: 1, Mr W. Card; 2, Mr C. Breakwell; 3, Mr Woodland.

The award for Best Coldwater fish was won by Mr A. Cook; Mr V. Green won in the Best Tropical fish, Best Breeders, Most Popular exhibit and Best supported class. The Best Furnished tank award went to Mr M. Hart. The Junior Cup winner was K. Cook.

Several new members have been welcomed to the Association recently. The club are presenting a fish tank to a local Old Peoples' Home.

MEMBERS OF BOURNEMOUTH AS

travelled to Salisbury for the annual ASSOCIATION OF SOUTHERN AQUARIST SOCIETIES Open Show and were very successful in gaining awards. Mr & Mrs Bebb won four firsts, three seconds, a third and a fourth and received the Fish of ASAS Annual Challenge trophy and a tankard for personal retention. Mr B. Coombes achieved two firsts, two seconds, three thirds and a fourth, and Mr Walker and Mr K. S. Gibbs a first. The society lost the inter-club quiz by only a small margin but, in any case, many felt that the quiz was not up to standard for a Final.

Mr K. S. Gibbs has won the club's annual Home Aquaria competition (2, Mr Edwards; 3, Mr J. J. Jeffery).

THERE were just over 400 entries at the RUNNYMEDE AS OPEN SHOW.

The best fish in show was a *Melanochromis variabilis* entered by Mr K. Rees of Gosport, which won a gold pin, the Mrs J. Garrad trophy for Best Fish and the T. A. and C. A. Butler trophy for Best Rift Valley cichlid. Mr Rees also won the C. Kiss trophy for Best Rasbora. Other annual awards went to: Mr P. Grovener (Runnymede), the TRM Reilly Cup for miniature aquaria; Miss R. Coyle (Independent), the Queensborough trophy for Best Characin; Mr R. Goodson (Rochampton), the Trop-aquaria Cup for Best Dz cichlid; Mr W. A. Cowburn (Basingstoke), the C & C Cup for Best Db cichlid; Mr E. Farnham (Sudbury), the Lambourne trophy for Best nov Catfish, Mr A. I. Feast (Tonbridge), the Lin trophy for Best Class L; Miss K. Howell (Gosport),

the D. Reilly trophy for Best Corydoras & Brechin; Mr D. Reilly (Runnymede), the K. Smith trophy for Best Pair; Mr J. Bayley (Sudbury), the P. Grosvenor trophy for Best Barb; Mr C. Kistingbury (Runnymede), the H. Nicholls trophy for Best Mollie; Mr A. P. Taylor (Sudbury), the Helen trophy for Best Male Guppy; Mr S. J. Rigby (Gosport Breakaway), the Mandy Cup for Best Female Guppy. The K. Smith trophy for the visiting society gaining the most points went to Sudbury. The FRAS trophy for Class Ma (Labos) went to Mr H. Pratt of Hounslow.

The rest of the results were:

Aq: 1, Mr P. Grosvenor (Runnymede); 2, Mr D. Reilly (Runnymede); 3, Mr S. K. Burgess (Hounslow). Ba: 1, Mr K. C. Smith (Runnymede); 2, Mr R. Goodson (Roehampton); 3, Mr R. F. Adams (Salisbury). Bc: 1, Mr J. Bayley (Sudbury); 2, Mr M. J. Lewis (Sudbury); 3, Mr R. Cook (Hounslow). Ca: 1, Miss R. Coyle; 2, Mr R. Cox (Il Wycombe); 3, Mr L. J. Beazley (Sudbury). Cb: 1 & 2, Mr P. Coyle (Hounslow); 3, Mr L. J. Beazley (Sudbury). Cc: 1, Mr P. Coyle; 2, Mr D. M. Reilly; 3, Mr W. A. Knight (Gosport). Dc: 1, Mr W. A. Cawburn (Basingstoke); 2, Mr I. Clarke (Gosport); 3, Mr E. Farnham (Sudbury). Dd: 1, Mr K. Rees (Gosport); 2, Mr T. A. Butler (Runnymede); 3, Mr F. McDowell (Runnymede). Df: 1, Mr R. Goodson; 2, Mr A. A. Houghton (Gosport); 3, Mr R. F. Adams, Esq.; 1, Mr D. R. Fothery (Anson); 2, Mr B. Pratt (Hounslow); 3, Mr A. P. Taylor (Sudbury). Ee: 1, Mr D. M. Reilly; 2, Mr T. Cripps (Basingstoke); 3, Mr A. P. Taylor, Esq.; 1, Mr N. Roberts (Brocknall); 2, Mr J. H. Jackson (Basingstoke); 3, Mr R. J. Norris (Brocknall). Ff: 1, Mr P. Grosvenor; 2, Miss K. Howell (Gosport); 3, Mr P. Davies (Brocknall). G: 1, Mr E. Farnham; 2, Mr M. H. London (Tottenham); 3, Mr M. J. Lewis (Sudbury). H: 1, Miss R. Howell (Gosport); 2, Mrs J. Lloyd; 3, Mr J. Shepherd (Runnymede). Jf: 1, Mr K. Rees (Gosport); 2, Mr M. J. Lewis; 3, Mr P. Coyle, Kt.; 1, Mr J. H. Jackson (Basingstoke); 2, Mr T. Fraser (Basingstoke); 3, Mr R. Poole, Esq.; 1, Mr A. E. Frost (Tottenham); 2, Mr R. Leslie (Il Wycombe); 3, Mr A. C. Tull (Salisbury). Mf: 1, Mr H. Pratt (Hounslow); 2, Mr R. Goodson (Roehampton); 3, Mr M. H. London (Tottenham). Me: 1, Mr I. Clarke (Gosport); 2, Mr E. J. Brazier; 3, Mr J. Bayley (Sudbury). Nk-M: 1, Mr D. Reilly; 2, Mr C. Kistingbury; 3, Mr J. H. Jackson. NO-T: 1, Mr T. Fraser; 2, Mr W. West (Salisbury); 3, Mr W. A. Cawburn (Basingstoke). Q: 1 & 2, Mr A. P. Taylor; 3, Mr C. Kistingbury. Pl: 1, Mr S. J. Rigby (Gosport Breakaway); 2, Mr C. Kistingbury; 3, Mr I. Morris (Gosport). Qf: 1, Mr E. Farnham; 2, Mr G. Penrose (Gosport Breakaway); 3, Mr R. Nicholls, R.T.; 1, Mr G. Penrose; 2, Mr T. E. Nicoll (Basingstoke); 3, Mr T. Cripps, S.; 1, Mr C. Kistingbury; 2, Mr M. D. Chapman (Hounslow Ind.); 3, Mr R. J. Hard (Hastings). T: 1, Mr T. Fraser (Basingstoke); 2, Mr E. Farnham; 3, Mr T. Cripps, Kt.-M.; 1, Mr R. Poole; 2, Mr D. R. Fothery; 3, Mr T. A. Butler, KD-T; 1, Mr A. E. Norris (Orington); 2, Mr W. West (Salisbury); 3, Mr R. Nicholls.

THE GOLDFISH SOCIETY OF GREAT BRITAIN report a very successful Open Show. Fish were entered in all the adult classes and it could be seen that all varieties of GSGB standard fish are kept by the

NEW secretary of the FEDERATION OF NORTHERN AQUARIUM SOCIETIES is Mr D. B. Glen, 16 Nutall Avenue, Whitefield, Manchester M25 6QA.

members. Mr R. M. Whittington, editor of the Bulletin of the Society reports: 'If the numbers of entries in each variety at the recent Open Show can be taken as indicative of the stock held by the Society members, some interesting facts are revealed. There is increasing interest shown in the dorsal-less basic varieties;... the Bramblehead is growing both in strength and quality, due to reinforcement stock from Japan. Certain varieties seemed to have declined in numbers, however. Whilst certain breeder members were not exhibiting this year, we continue to be woefully short of veiltails. We were short of fantails, London shubunkins, globe-eyes, broadtail moors and comets.' Results were:

Singles: 1, Mr G. King; 2 & 3, Miss D. Morris, Breeders; 1, Mr I. Fleming; 2, Mr G. King; 3, Mr R. Whittington. Veiltails: 1 & 3, Mr S. Tibble (best fish in show); 2, Mr W. Cook, Breeders; 1 & 2, Mr D. Mills; 3, Mr S. Tibble, Brambleheads; 1, Mr A. Lawson; 2, Mr D. Craig; 3, Miss D. Morris, Breeders; 1 & 2, Mr D. Craig; 3, Miss D. Morris, Breeders. Fantails: 1, Mr S. Tibble; 2 & 3, Mr R. E. Wynnan; 3, Mr J. Pollard, Breeders; 1, Mrs P. Whittington; 2, Mrs M. Dudley, Celestials; 1, Mr H. Berger; 2, Mr D. Craig, Breeders; 1 & 2, Mr E. Matcalf, Post-post; 1 & 3, Mr H. Berger; 2, Mr R. Berger, Bubble-eyes; 1, 2 & 3, Mr K. Speaks, Breeders; 1, Mr K. Speaks. Common goldfish: 1, Mr A. Law; 2, Mr A. Marshall (art); 3, Mr K. Speaks, Breeders; 1, 2 & 3, Mr E. King, London shubunkin; 1, R.S. Mrs P. Whittington; 2, Mr F. Leach, Breeders; 1 & 2, Mrs P. Whittington, Comets; 1, Mr D. MacKay; 2, Mrs M. Dudley; 3, Mr A. Marshall (art). Fantails: 1 & 3, Mr C. Speaks; 2, Mr S. Tibble, Breeders; 1, Mr H. Herbert, Celestials; 1, Mr R. Whittington; 2, Mr A. Lawson; 3, Mr R. Eason, Breeders; 1, Mr A. Lawson, Broadtail moors; 1 & 3, Mr R. Whittington; 2, Mr A. Young; 1 & 2, Mr R. Whittington, Nevick class; 1, Mr D. Craig; 2, Mr D. Seymour; 3, Mr R. Herman.

AN inaugural meeting of the CHARACIN STUDY SOCIETY is being arranged for early in the New Year at which officers will be elected. During 1975 it is proposed to hold an exhibition and a slide show of characins. Any person interested in joining the Society should contact Mr M. West, 76 Lingfield Avenue, Kingston-on-Thames, Surrey.

In Brief . . .

... MR E. M. Sreanley, P.R.O. of **PORTSMOUTH AS**, writes: 'Among the recent lectures given at the general meetings of Portsmouth AS included one given by Mr S. Crabtree on reptiles. The Society was shown specimens of iguanas, toads and snakes and learnt about their living conditions and breeding habits. Another lecture was given by Mr M. Mason on fish photography, and with the aid of slides he illustrated to members the correct way to set up a tank and camera in order to gain the best results in photographing fish. All aspects of fishkeeping are dealt with in the Society, which meets at the Portsmouth Community Centre, Malins Road, Buckland at 8.00 p.m. on the 1st and 3rd Wednesdays every month (with the exception of August when the Society hold their annual show, circumstances permitting). New members are always welcome, beginners and the more experienced, so why not come and join us'.

... **BETHNAL GREEN AS** will be holding their annual Dinner-Dance on the 8th February 1975. Details are obtainable from the secretary, Mr J. E. Connolly, 39 South View Drive, South Woodford, London, E18 1NR; phone 01-530 3945.

... MR T. COLLIER of Gloucester gave an interesting lecture to the members of the **BRISTOL TROPICAL FISH CLUB** on the feeding and care of fry and young fish. For the past few months there has been a steady growth in the attendance of new members and it is hoped that interested persons will continue to come along the third Thursday of the month to the Black Horse, Old Market, Bristol. For further information please contact the secretary, Mrs L. Littleton, 9 Little Stoke Road, Stoke Bishop, Bristol.

THE ASSOCIATION OF GOLDFISH BREEDERS reports: members at the AGM pronounced themselves satisfied with the club's

first year's efforts. After officers were re-elected, Mr A. Lawman displayed some young lionheads that had contracted an unusual disease and members suggested remedies, which he will try and report back on at the next meeting.

... AT the monthly meeting of **MID-SUSSEX AS**, the chairman, Mr D. Soper, warmly welcomed members and visitors and especially the judge and speakers, Mr R. Fox, Mr R. Forder and Mr J. Parker. Mr Forder showed coloured slides on aquatic flora and Mr J. Parker gave a talk on 'Bris and Bobs', which was basically ideas to save the aquarist time and money. The table show was judged and prizes awarded to the winners: novices: Mr A. Holmes (82 pts). Fish of Year: J. & B. Burtles (86 pts). Breeders (livebearers): Mr C. Roffe (75 pts). Breeders (egg-layers) and plants: Mr D. Soper (78 pts). Information regarding the Society can be obtained from the secretary, Mr J. Reeve (35 Rumbolds Lane, Haywards Heath; phone 3702, evenings).

... MR D. MILLS (Editor, FRAS Bulletin) was warmly welcomed at a recent meeting of **BRIGHTON & SOUTHERN AS**, when he gave a very informative talk on angel fish, their habitat and the best ways of caring for these beautiful fishes in the aquaria. He also offered advice on how to run a newsletter for the benefit of the members. Mr J. Stillwell judged the table show of all classes and after pointing the fish he helped members with their showing problems.

... 30 members of **GLOUCESTER AS** attended the meeting at the Old Tuffley Community Centre, Gloucester, to hear an interesting lecture and slide show by Mr D. Noble, Bristol. The lecture was on aov catfish, their care and breeding, which everyone enjoyed. Mr F. Timmins won the monthly table show for catfish (2, Mr G. Dixon; 3, Mr L. Griffiths). Results of the annual home aquarium competition are: 1, Mr K. Taylor; 2, Mr J. Williams; 3, Mr F. Timmins.

... AT the last meeting of **WEYMOUTH AS**, members were given a talk by Mr N. Bennett on his water

lily and fish farm. Mr Bennett was a founder member of the Society in January 1952. He illustrated his talk with coloured slides on the progress he had made over the last 15 years, transforming old brick clay pits to huge lakes for water lilies and fish. Many slides showed the different colours of water lily and some of the many ponds, lakes and gardens visited by Mr Bennett. Weymouth

AS wish all 1974 readers and fellow aquarists a Happy Christmas and prosperous New Year.

... AT the **BRADFORD & DAS** 1974 Members' Show, trophies were awarded as follows: Mr D. Sugden, the Beadbeet trophy for livebearers, the Kathleen Gill Cup for barbs, the Smith trophy for anabantids, the Luther Wright trophy for cichlids and the Taylor trophy for breeders egg-layers; Mr J. Cawthra, the Aled trophy for characins, the Brown trophy for catfish and the Best in Show trophy; Mr W. Holmes, the Thornley trophy for fighters, the Wainmough trophy for coldwater and the Firth trophy for pairs. Mr R. Hainsworth won the breeders livebearers trophy.

... **THE BRITISH CICHLID ASSOCIATION** stand at The Aquarium Show proved very successful with many new members enrolled. Winners of the raffle were: Sterba's FRESHWATER FISHES; Mr M. Parsons, 16 Lyffard Crescent, Newport, Gwent; AFRICAN CICHLIDS OF LAKES MALAWI & TANGANYIKA; Mr G. Flint, 37 Copley Crescent, Scawsby, Doncaster.

Dates for Your Diary

1975

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

1st March. **FRAS** Assembly, Conway Hall, Red Lion Square, Holborn, London, WC1, 2.30 p.m.

1st March. **CATFISH ASSOCIATION OF GREAT BRITAIN** 2nd Open Show (catfish only) St Saviour's Church Hall, Cobbold Road, London, W12. Details: Mr D. Lambourne, 7 Wheeler Court, Plough Road, London, SW11 2AX; phone 01-223 2630.

15th March. **HENDON & DAS CONGRESS**, Whitefields School, Clarendon Road, London, SW2. Speaker: Mr W. A. Tunney from Holland.

16th March. **DON VALLEY AS** Open Show: Staff Dining Room, British Steel Corporation Works, Stockbridge, nr Sheffield. Details: Mrs B. Hardley, 11 Hall Road Walk, Silkstone Common, Barnsley, Yorks.

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

11st March. **SOUTHAMPTON AS** Open Show, The Avenue Hall, The Avenue, Southampton. Details: Mr D. Mills, 30 Ferriside Way, Boterns Park, Southampton.

5th April. **RIVERSIDE AS** Open Show, St Saviour's Church Hall, Cobbold Road, London, W12.

19th April. **CORRINGHAM & DAS** Open Show. Details: Mr D. C. North, 198 Scotland Road, Slough, Berks, Bucks.

28th April. **COVENTRY POOL AS** Open Show, Tompkins Junior School, Titchell Lane, Coventry. Booking: 11.00 a.m.-1.00 p.m. Schedule (large size): Mr S. Woodbridge, 23 Lime Tree Avenue, Titchell, Coventry.

28th April. **MERSEYSIDE AS** Open Show, Rainhill Village Hall, Exchange Place, Rainhill, Lancs. Details: Mr B. Wilson, 3 Thorpe, Skeltondale, WNr 800, Lancs.

24th May. **GOLDFISH SOCIETY OF GREAT BRITAIN** Meeting, Conway Hall, Red Lion Square, Holborn, London, WC1, 2.00 p.m.

25th May. **CORBY & DAS** Open Show, Corby Civic Centre, FRAS Rules. Schedule: Mr A. Snow, 175 King Street, Kettering, Northants (mid-March).

1st June. **NEWCASTLE TROPICAL FISH SOCIETY** Open Show, St John's Church Hall, Westgate Road and Granger Street junction, Newcastle-upon-Tyne. Schedule shortly. Mr L. R. Lawson, 84 Government Road, Jesmond, Newcastle-upon-Tyne 2.

1st June. **HAVANT & DAS** Open Show, The Merchiston Hall, Horndean, Hants. Schedule: Mr K. Taylor, 1 Hollybank Close, Caversham, Hants; phone Romsey Way 4140.

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

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 fish-keeping exhibits invited. Details from the organisers, 199, 254 Gerrard Lane, London SW17 6NY; phone 01-947 2805.



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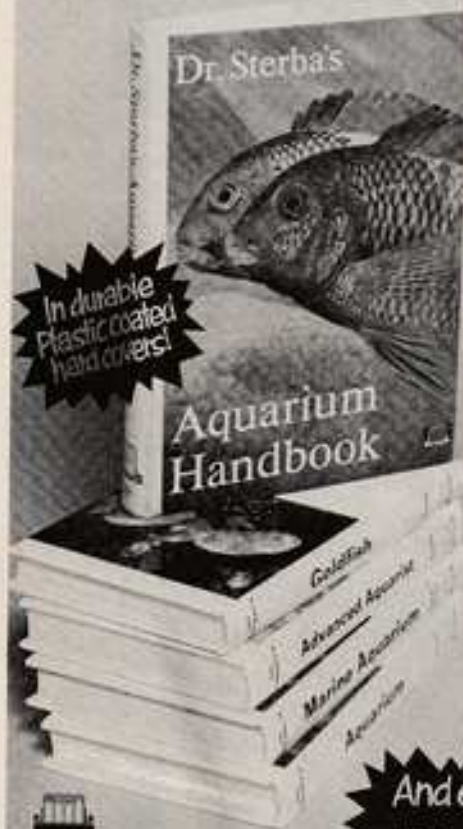
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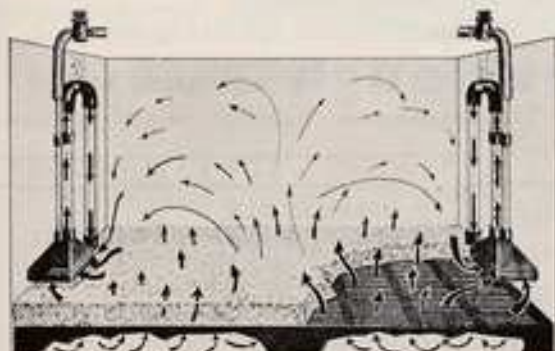
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