

DECEMBER 1976

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Pet **Fish**

# PRACTICAL FISHKEEPING MONTHLY



**Contents include:**

Full Report of the AQUARIUM SHOW '76

Mouthbreeder Spawning

Coldwater Scene

Aquarists up the Amazon

Plants called Ludwigia

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# The AQUARIUM SHOW 1975

A round-up of exhibits and events at the Show by ROY PINKS

**T**HIS year The AQUARIUM SHOW really seemed to have come of age, and there was a fluency and confidence to mark the event. The Royal Horticultural Society Old Hall was filled to a nicety and I thought that the overall balance was better than I had seen it. There were some absences of old friends, but some very pleasant new faces put this back into perspective.

## The Fish

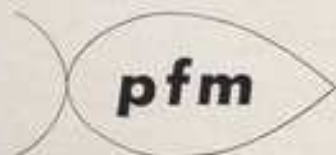
There were many fine entries of both fish and furnished aquaria, to say nothing of those exquisite aquascapes which must have been abominably difficult to judge. The latter all de-



First in the Society Tableaux competition was Portsmouth AS. Hendon AS was second and Isle of Wight AS gained third place

served prizes: I thought that the exhibitor who entered those lovely golden platy hybrids to match the heather was singularly unfortunate not to have caught the judge's eye, but on the other hand, throughout the

entries I think that the adjudicators had their work cut out. It is most helpful to have the FBAS judging sheets publicly exhibited. How very clear they were, too! It was good to see so many rarely-seen species, and



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Champion fish line-up

In the tropical sections there were some Congo tetras which defied the imagination until one saw the specimen in the Supreme Championship entry; then one had seen all. The *Synodontis clarias* was indeed very fine, but when seen alongside that *Aphyosemion mirabile mirabile* and the golden severum, the viewer comes to realise how one has to have very special qualities even to begin judging outstanding fishes like these. The furnished aquaria classes were also of very high quality, and the classic touch running throughout made one wonder



Roy Pinks admires one of the aquascapes on display

the coldwater section once again gave me special pleasure. The appearance of some wonderful sunfish perhaps bodes a revival of this fascinating group, and I look forward to seeing lots of bass next year. The bitterling, on view in several tanks, were really beautiful, and these intriguing pigmy sun bass must have whetted many an appetite.

SOME of the unplanned highlights of The Aquarium Show take place before it opens to the public and thus are seen only by participants. This year there were the superbly staged entrance and exit of 'Stanley', whose presence graced the tableau of Hendon AS. On setting-up night, the strains of 'Colonel Bogey' from a cassette player stopped work in the Hall as through the entrance



Stanley formed the central figure on the Hendon AS tableau, which was placed second in the competition

marched a contingent of Hendon members, in distinctive woolly caps and stockings, on their shoulders bearing an inanimate 'body'. Was it a Hendon member past the point of no return? asked bystanders. No, 'Stanley' was introduced all

round and work was resumed with laughter and many a confiding 'They're a crazy crowd!'. At breakdown, after the Show closed, 'Stanley' was borne from the Hall in a slow march by his bareheaded creators and exhibitors.

whether the influence of a certain 1931 writer from the Netherlands may be being felt more widely than would perhaps be freely acknowledged! The furnished and the aquascape classes were highly competent and appealing. Those who managed to keep the toadstools in the latter looking so fresh are indicative of the standards prevailing. Those who sought the sublime will have been well satisfied with that wonderful electric eel, whilst those who sought the other end of the scale will not have missed the baby black mollies in that lovely piece of nonsense in the furnished class which irreverently attempted to take the 'mickey' out of very distinguished personalities connected with the show, Whose Names We Shall Not Mention.

Sybil Hedges' brainchild Weiridos and Nasties was a great success and contained some fine specimens of fish which I would rather see in other tanks than mine — or almost. I suppose the pike was an all-round favourite, and for my part I rather regretted that the mud-skipper had to be categorised with those other really villainous types. He certainly looked a little affronted. The pike characin and the black ghost were but two of the exhibits which are rarely seen, and those who contributed in any way to this non-competitive display earn our unqualified thanks. In particular the descriptive detail was most interesting, and the ancillary medical display added a (?) final touch.

**Specialist Society Displays**

The specialist societies did their bit to present their cases cogently, and in so doing they achieved the general high standard set by the Show. In particular the British Killifish Association and the Catfish Association of Great Britain mounted displays which I cannot praise too highly. The former, with a wealth of individual detail and a large number of illustrative tanks, featured *Fundulus heteroclitus*, which is the first species to have been



Mid-Sussex AS riverbank scene

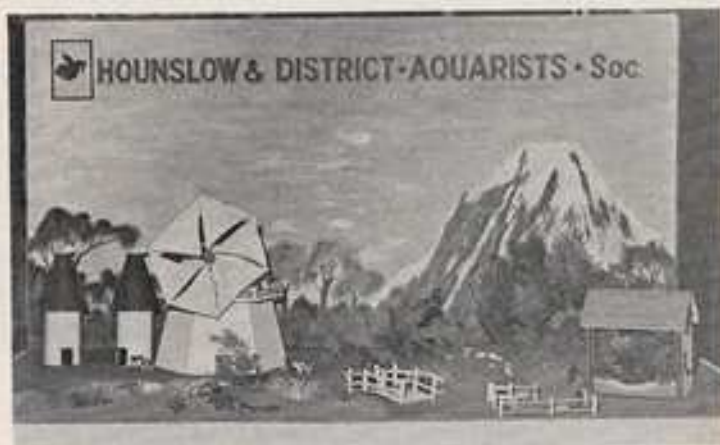


Tableau by Hounslow & DAS



Pyramid aquaria and a sphinx on Erith's tableau



Isle of Wight AS members at work on their tableau, which showed a sunken galleon with marine fishes

used in outer space experiments. The red-tailed catfish (*Phractocephalus hemiopterus*) caught my eye on the catfish stand, which was highly professional in concept and execution. Quietly informative, but unmanned until the Saturday showing, was the Characin Study Society stand. This new enterprise has done well to have made its first appearance at The Aquarium Show only some 6 months after formation. The subject is of wide interest and I hope it goes from success to



Philip Newman (left) kept the aquascapes fresh with a water spray

Right: FBAS judge Mr W. Ryder assesses the coldwater entries



Best fish in show was owned by Mrs Sybil Hedges, seen here receiving her awards from Dr John Wilkinson (right), watched by FBAS vice-president Mr Ken Pye

success. It was near enough to the strong FBAS stand, which bristled with expertise and hardware, perhaps to benefit from its influence, and no doubt when the doors closed its membership list was looking longer than when the Show began. The British Koi Keepers' Society display showed some fine typical fish and the Goldfish Society of Great Britain stand was nicely informative. I believe that, given hardy specimens, there is a growing future for coldwater species, and those who have to do with them should plug them for all they are worth for as long as this attitude prevails. Another general love is the guppy, represented by the stand of the Federation of Guppy Breeders Societies. However, I would like to see the guppy display incorporating more specimens which would leave even me speechless.

Mrs J. Stillwell received the Calgary Trophy on behalf of Portsmouth AS

The British Cichlid Association provided lots of informative material, but their stand would have benefited by some live specimens, such as the British Ichthyological Society, nearby, managed to assemble.

The Cactus and Succulent Society of Great Britain, so ably and agreeably represented by Harry Auger, its vice-president, once again arranged a tempting display of plants for sale, which, like other offerings, were rapidly finding new owners as the Show proceeded.

I know full well what a jolly hard job it is for a society to put a stand together, let alone man it usefully, but it has to be remembered that these displays are the spearheads of the societies, and to be effective they must be sharp. The aims of all these bodies are really worthwhile, and I hope for their achievement, thus in some cases a brush-up on public relations can only benefit the entire membership.

#### Aquarium Society Tableaux

These were very even this year, with the odd exception. The most individual, perhaps, was the Basingstoke and District entry, twinning with South Shields in the joint publication of Fish Forum, their club magazine. This was featured almost exclusively on the stand, and it was tantalising without actually giving anything away. Isle of Wight AS presented a convincing wrecked galleon containing some blue damsel coral fish, which were surprisingly well behaved. One of the few marine exhibits, the fish looked well in this situation and were good unmarked specimens. Nearby, a somewhat sinister figure in

Right: FBAS judge Mr D. Ranton pointing in the livebearer pairs section



Above: Mrs Winifred Meadows, popular FBAS judge and lecturer for many years, paid a visit to the Show and is photographed in conversation with FBAS chairman Mr Frank Tomkins

## AQUARIUM SOCIETY

### TABLEUX (continued)

solar topee (whom I warmly greeted on several occasions, but who turned out to be Stanley linking the Zaire River expedition with our better past) was the principal subject in the Hendon AS tableau. This was a well-planned display which included a number of excellent specimen fish, notably the Congo tetra. The Runnymede AS exhibit comprised a large tank of African cichlids, supplemented by a shopping centre in which individual tanks represented individual traders. Hounslow AS preferred a rural scene with much detail, but I should have liked more fish here, as there were only some half a dozen goldfish in the 'village pond.'

I suppose the choice for prizes lay somewhere between the tableaux of Mid-Sussex, Erith and Portsmouth. Mid-Sussex AS mounted a huge tank, about 8ft by 2ft by 2ft. The concept was quite masterly — a sloping riverbank with underwater tree roots and aquatic population. The back lighting and generally quiet tenor of the display had the touch of real authority, and I found it most impressive. I was much disappointed when the fishes were added. There were some fine native fishes — tench, carp and perch, but when some sunfish and one of those horrible American freshwater catfish were placed with them, the authenticity vanished. What a pity! Erith and District AS had a fascinating Bedouin tent opening from which the Pyramids were viewed: two pyramid-shaped glass tanks containing guppies and neons were so simply set on sand alongside a sphinx, and the effect was distinctly arresting. A very thoughtful project.

Superficially the Portsmouth display was rather like Runnymede's. There, too, were lots of 'shops' with excruciating names

like Koo Lee Loach etc., but when one studied the little tanks which comprised the 'shops', here was another matter altogether. Almost without exception these miniature furnished aquaria were real set pieces, and each stood in its own right. Elsewhere they had been just fillers, but here they were individuals. Splendid stuff and some lovely fish too. Portsmouth got my vote before the results of the tableaux competition were announced.

I admire more each year the ingenuity and improvisation which goes into this part of the Show. It takes a lot of guts to go to all the trouble, only to get beaten, but to return again to do battle, and I hope to see many more societies making entries next year.

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*THE splendid all-glass tank that featured on the Mid-Sussex AS tableaux was made from 1/2 in. glass, 8ft. by 2ft. by 2ft. The total weight was well over one ton—something like 3000 lbs and the 200 gallons of water it contained were circulated by two pumps at the rate of 400 gallons/hour.*

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### Things to Buy

The shop window of the trade was full of interesting exhibits, ranging from the wide spectrum of the average pet store to the highly specialised wholesaler of an individual equipment. There was lots more optimism than last year, when a brave face was nevertheless turned to the prospects we all felt would be grim, but which have turned out rather better than we believed possible. In keeping with the rest of the Show, the trade stands as a whole were well planned and convincing. I am grateful to all who spared me time, when they were so busy, to chat about their enterprises and their new products and anything else which came to mind. In particular, those who listened

to certain complaints which I voiced showed the sort of courtesy and interest which one always hopes for but does not always get.

The beginner was well catered for by the enormous range of books offered by TFH Publications, by J. and J. Bower Ltd and the PFM stands. No excuse now for not starting off on the right foot. TFH also introduced a highly pleasant pastime for the winter evenings, namely Sand Designing. This is like a sophisticated Isle of Wight sand configuration, and should appeal to schools and to those who like making their own Christmas presents without spending a fortune. Bowers Ltd, at the Show for the first time, featured the new Carbo Freeze-dried Bloodworms, an interesting addition to the larder.

Air pumps are high on my list of things to investigate. Spares problems, indifferent performance, noise factors and so on are always cropping up, and I am still looking for a product under £10 which will drive a 30 gallons marine tank without buzzing like a bee or requiring attention every month or so. Mr Small, of Hillside Aquatics, expressed great faith in the BIKO and suggested that the new Aqualonic air diffuser, measuring about 12in. by 1in., might be coupled with it in order to enhance the internal surge of water which marines so seem to enjoy. Rosewood (Eric Woods Ltd) favoured the KIRO 3000, claimed to be so silent as to prevent divorces, and the GLORY G6, of which they are the sole distributors. I was pleased indeed to see Armitage Pet Products selling a small DC pump driven by an HP2 torch battery, which should give an output for about 24 hours. Perhaps next year we shall see some 12 volt models. Vortex Innerspace Products exhibited the famous DIATOM filter, with a foresight of a commercial version, for release towards the end of the year at around the £80 mark.

Food is a must, but it is a rare puzzle to determine which





## FBAS Supreme Championship

The Supreme Champion Fish 1975 was a *Synodontis clarias* entered by Mrs May Nethersell, and second was a *Pseudotropheus macrophthalmus* entered by Mr W. Knight (Gosport). 3, Mr P. Moye (kerri danio, Sudbury); 3, Mrs O. Lay (*Aphyo. mirabile mirabile*, Newton Abbot); 5, Mr M. West (*Microlestes interruptus*, Kingston); 6, Mrs M. Nethersell (Brochis).

Mrs May Nethersell (Riverside AS) at the presentation of her Supreme Championship award by Dr John Wilkinson

## Two Winning Aquascapes



Above: a large piece of petrified wood of exquisite shape provided a basis for the design of winning individual aquascape entered by Mr John Shepherd



Left: winning club aquascape was this entry by Riverside AS, designed and staged by Mr Malcolm Goss. A shoal of zebras occupied the 'pool' below the bright green planted bank

## Things to Buy

(continued)

make to favour when faced with the bewildering display offered at the Show. It all looked so well conceived — and similar — that price, for many, will soon become the deciding factor. Phillips Yeast Products stressed the importance of vitamin supplements (SUPERFOOD). Promin set much store by continuing research into what is best for fish of all species. Peterama displayed the new Tetra SQUID Flakes, which the mariner will be eager to try out. Allandale Aquaria, too, had much to offer the mariner, ranging from a variety of sterilised frozen sea foods to live mysus shrimp at about 15p a bag. The latter was almost too good to be true, as a single bag would yield most interesting pets at a fraction of a penny per head! Not available everywhere yet, however, but let's hope that the habit spreads. Newpet Ltd. also exhibited some quality foods, with additional therapy in the form of TRIEBAKTIV Sera, claimed to restore vitality to males. (Fish, of course!) The Aquarian stand (Thomas's of Halifax) was brimful of good things with which we are not yet completely familiar, but a very distinguished personage was overheard to opine that they were very good indeed. Welcome another newcomer to the Show, and all success in the new venture!

I have for some time enthused over Mr W. Tomez's sage advice in PFM on the planting of tanks, but this presupposes that the aquarist is willing to spend quite a lot of money on plants. I am all for this, as most home aquaria are badly planted, and I like the frustrated gardener to have something to do in the winter time. The stand of Hobby Fish, a firm always seeking new plant species of merit, had a really wide selection of quality plants to choose from, including

some, like a dwarf *Marsilea*, which are usually difficult to come by. I thought that Crawley Aquarium also had the right idea about all this by offering specimen plants for sale in boxes of ten. They not only come cheaper that way, but one is discouraged from that innate meanness we all possess when it comes to buying anything but fish.

It was a great show for the aquarist who wants to tear his tank apart and redesign it. There were stacks of petrified wood on the Allandale Aquaria stand, as was also the case at Ross' of Reading, who also offered cork bark and plants. The latter exhibitors are newcomers to the show, too, and seemed to be enjoying themselves. The mariner is always well catered for by Sarogny Art Products, whose corals and shells were as entrancing as ever and very much less expensive than in the provinces. You can buy a shell here for a penny, or a large cup coral for under £3.

Some aquarists will want new tanks, and Tritern Trading Co. would point to the new SEE-ALL aquaria, which are beautifully designed as well as being of practical value to the mariner and his freshwater counterpart alike. I certainly liked the apparent absence of fittings which rot away under the influence of salt water. In similar vein, Martins Aquaria exhibited the John Allan Panavision tanks with integral lighting, although these are not yet available to the public. Martins also offered some fine marines for sale — almost alone in this courageous venture, so it would seem. Two interesting new culture aids were also exhibited. Wingate & Golding showed bags of a new substratum by Velda, which should enable those Tomez-orientated plant enthusiasts to get the best from their purchases. You put about an inch of it on the bottom of the tank and then cover it with your usual sand or gravel. Allandale also exhibited an exciting new type of lighting tube called

TRUE-LITE. It was on view illuminating a tank of highly expensive and rare marines, and the effect was exhilarating, to say the least of it. The price, alas, was not, and we still have no valid explanation from tube manufacturers why such as these need be so disproportionately expensive in comparison with much larger domestic and industrial tubes.

There were lots of fish on sale on the more general stands, but the Tisbury and Sons range of quality fancy goldfish was really something. I was greatly encouraged to learn that a breeding programme for home-produced goldfish is planned, with the object of developing some hardy and reliable strains. All success to this. I am sure it is in the right hands if the splendid specimens on display are anything to go by — as they most certainly are. Geoff Claxton of the Kingston Koi Company was another welcome new exhibitor, and he not only conveyed a deep understanding of the species, but also a plea that intending purchasers of these wonderful fish should first educate themselves about their needs.

Those who visited the Show will echo my thanks to the organisers, the exhibitors and others who have missed out on sleep and worked so hard to please us. I think they also displayed a proper attitude towards the dignity of the fish on display, whose welfare was clearly of primary concern, as witness the very few casualties. Competitive marine entries and specialist marine society exhibits were non-existent, which indicates that the bubble has burst and that mariners are now sitting down and thinking a bit harder about their responsibilities instead of counting their acquisitions. All in all, the atmosphere was brisk and hopeful for the hobby, and I think we may look forward and begin to plan for the best ever Show in 1976, which marks *PetFish Monthly* in its tenth year of publication. So get thinking now — all too soon it will be too late!

## Great Success of the 'Weirdos and Nasties'

I think most visitors to the Aquarium Show would agree that the 'Weirdos & Nasties' fish display was a great attraction. It was very pleasing to me to see that all the people who promised to exhibit their fish on this stand all arrived in good time, and there was no problem of an empty tank to be filled at the last minute.

'Sparky', the fish collection box for the Intensive Therapy Unit of Whipps Cross Hospital, did light up when money was fed into it. The total sum collected at the show was £16.50 plus a cheque for £10 from PFM. The Intensive Therapy Unit will be putting this money towards buying more equipment to further their excellent work.

My thanks go to all who rallied round and helped me to produce this display, no matter how small the deed, and to the following people for their fish, which made it all possible. Alf Gardiner, *Mike & Gina Sandford, Pygidium itatayea*; Bob Thoday, *Periophthalmus barbarus*; Gerry Biggs, *Dinotop-terus jacksoni & Malapterurus electricus*; Ken Adams, *Sternarchus albifrons*; Dave Byfield, *Rooseveltella nattereri*; Keith Beadle, *Esox lucius*; Mrs. Shirley, Mr & Mrs Gudgeon, *Serraninus rhombus*; Pete Cottle, *Acestrorhynchus cacharro*; Roy Goodson, *Luciocharax* species; May & Bill Nethersell, *Crenicichla* species; Billy Onslow, *Heteropneustes fossilis*; Ron & Pat Burplitt, *Clarias batrachus*; Mark Bish, scorpion, nurse shark & moray eel.

I am already thinking about next year's Show, and look forward to receiving ideas and suggestions; so, come on—participate, it's more fun and never too early.

Sybil Hedges, Assistant Show Secretary, Koi Kornor, 150 Ashburton Avenue, Seven Kings, Ilford, Essex IG3 9EL. Telephone 01-590 3239.



Resuscitation equipment loaned by Whipps Cross Hospital formed part of the display of fishes that can poison, bite or otherwise be unpleasant

**A Merry Christmas  
and  
Happy Fishkeeping in  
1976  
to all Readers of PFM**

### Show Organiser's Acknowledgements and Thanks:

## To All Who Make The AQUARIUM SHOW Possible

SO much help is given by so many people both before and during the Show that to mention individual names in the recording of thanks is a hazardous undertaking, but nevertheless the occasion cannot pass without sincere thanks being given to the Aquarium Show Committee — Mr C. A. T. Brown, Mrs Pat Lambourne, Mr P. Cottle, Mrs Sybil Hedges, Mr D. Lambourne and chairman of the Federation Mr F. C. Tomkins — and the Show Management team that included Mr F. Campbell, Mr S. Tarrant and in particular the Show Manager, Mr Cliff Harrison, who solved innumerable problems and was in all places at once coping with intricate electrical details.

There were many delighted comments this year on the number of fine and rare fishes exhibited and thanks must go to all the competitors who entered them and to all those who not only helped to erect the benches for them but who looked after the fish during the 3 days and nights. These included Mr K. Adams, Mr A. Bullock, Mr W. Nethersell, Mr G. Biggs, Mr P. Elson, Mr A. Gardiner, Mr T. Jones, Mr T. King, Mr A. Maitland, Mr E. Stainer, Mr and Mrs M. Sandford — and Mrs May Nethersell, who looked after everybody's welfare. Above all, very special thanks must go to the Show Secretary, Mr Derek Lambourne, to the assistant Show Secretary Mrs Sybil Hedges and Committee secretary Mrs Pat Lambourne for the great amount of work that they contributed not only during the Show but long before 'opening day' itself. Elsewhere on these pages Mrs Hedges has thanked the exhibitors who loaned fishes for the special display of 'Weirdos & Nasties' but it was her own enthusiasm and pro-

longed effort in gathering together all the items involved, and the very kind co-operation of the Whipps Cross Hospital Intensive Therapy Unit, that made the exhibit possible.

Special thanks must also go to the judges, Mr A. Blake, Mr C. A. T. Brown, Mr M. Carter, Mr C. W. Gorwill, Mr B. Pye, Mr D. Renton, Mr W. Ryder and Mr F. Tomkins for their careful and expert guidance in deciding the winners of the awards, and it was a particular pleasure to welcome this year honorary Vice-President of the Federation of British Aquatic Societies, Dr John Wilkinson, as the presenter of the prizes.



Mr Alf Gardiner, one of the stewards at the Show, received a special award for his (unofficial) entry of a novelty furnished aquarium (referred to on page 355)

## Show Results in Detail

THE Best Fish in Show award, the Scanco Challenge trophy, was won by Mrs Sybil Hedges of Bethnal Green AS for a common goldfish. Mrs Hedges also received for this fish the Boughton trophy for Best Goldfish, the Longlife plaque for Best Coldwater Fish, and the Es-Es trophy for Best Exhibit entered by a lady. Mr A. E. Noronha of Orpington won the Pet Library trophy for competitor gaining most points, and the society with most points was Riverside AS (the Taylor Smith trophy) who also won the FFM Scalare trophy. Hendon AS won the T. Horemans Rose Bowl for Best Furnished Aquarium. The Phillips Cup for Best Individual Furnished Aquarium was won by Mr K. Lewis of Riverside. Other awards were: FFM Barb trophy, Mr John Stollery, Riverside; Best characin pair, Halvin Cup, Mr D. Winder of East Dulwich, and FFM trophy for Best Pair; Best cichlid pair, Marsh trophy, Mr T. Butler, Runnymede; Best labyrinth pair,

Kinnel trophy, Stephen Emptage, Walthamstow; Best tooth-carp pair, Rena trophy, Mr S. Powell, Riverside; Best rasbora pair, Tetramin trophy and FFM trophy, Mr M. Strange, Basingstoke. Mr Strange was also awarded the FFM Betta trophy, Best cichlid pair, Eheim trophy, Mr G. Biggs, Riverside; Best guppy pair, 'Trophy' trophy and FGA trophy, Mr A. E. Noronha, Orpington; Best platy pair, Pengilly trophy, Mr G. Smith, Walthamstow. Mr Smith also received the Renton trophy, and the Colindale Plant Cup for Best aquatic plant. Best mollie pair, TFH/Miracle Shield, Mrs M. Crewe, Wellingborough, Best native and foreign, FBAS Council trophy, Mr B. Brett, N. Kent; Best aos catfish pair, the Johnson trophy, Gina Sandford, Reigate & Redhill.

Detailed results were: Aa: 1. Hendon AS (73); 2. Walthamstow (72); 3. Riverside (70); 4. Bracknell (69). Ab: 1. Portsmouth (75); 2. Basingstoke (70); 3. Bethnal Green (69); 4. Riverside (67). Ad: 1. Mr R. Paine (Haslemere, 74); 2. Mr P. Newman (Riverside, 73); 3. Mr K. Bowman

(Erith, 65); 4. Mr. J. Wallace (Erith, 62). **Ac:** 1. Mr. E. T. Davison (J. of Wight, 71); 2. Mr. K. Beadie (Erith, 70); 3. Mr. P. Theobald (Erith, 61). **Ag:** 1, 2 & 3. Mr. K. Lewis (Riverside, 77, 76, 74); 4. Mr. R. Paine (71). **Al:** 1. Riverside (Mr. M. Goss, 77); 2. Erith (Mr. M. Thomas, 66). **Ar:** 1. Mr. J. Shepherd (Runnymede, 76); 2. Mrs. J. Lewis (Riverside, 74); 3. Mr. D. Parrott (Runnymede, 73); 4. Stephen Emptage (Walthamstow, 72). **NB:** 1 & 2. Mr. J. Stollery (Riverside, 76, 73); 3. Mrs. D. Winder (E. Dulwich, 70); 4. Mrs. M. Crewe (Wellingborough, 68). **NC:** 1. Master D. Winder (E. Dulwich, Emperor tetra, 79); 2. Mr. S. Bartlett (A. Harrison, 72); 3. Mr. M. Strange (Basingstoke, N. anomalus, 71); 4. Mr. R. Brett (N. Kent, cocacus, 70). **ND-M:** 1. Mr. T. Suller (Runnymede, Hepi, euchilus, 63); 2. Mr. A. S. Rigby (Gosport, 78); 3. Mr. G. Biggs (Riverside, Tel. hofkei, 76); 4. Mr. G. G. Woodhams (Farnbridge, P. auratus, 74). **NE:** 1. Stephen Emptage (thicklip gourami, 73); 2. Mr. T. Woolley (Saracens, C. chuna, 65); 3. Mrs. D. Taylor (Riverside, leeri, 63). **NF:** 1. Mr. S. Powell (Riverside, Jordaniella floridae, 70); 2. Mr. J. Parker (BKA, A. gularella, 70); 3. Mr. C. Morrison (Port Talbot, A. marmoratum, 69); 4. Mrs. E. Elson (Soothend, A. lineatus, 66).

**NGHL:** 1. Gina Sandford (Reigate & Redhill, Oso. vittatus, 73); 2 & 4. Mr. E. A. Noronha (Orpington, Lep. thermalis, 72); Hoplo. thoracatum, 70); 3. Mrs. M. Crewe (Hoplo. thoracatum, 71). **NJK:** 1 & 2. Mr. M. Strange (Brachy. kerri, 80); R. pauciperforata, 74); 3. Mr. R. Newman (Riverside, WCMM, 72); 4. Mrs. M. Crewe (Ras. reticulata, 71).

**NO-P:** 1. Mr. A. E. Noronha (66); 2. Mr. P. Elson (Soothend, 65); 3. Mr. P. Mills (61); 4. Mr. R. Brett (N. Kent, 53). **NOR:** 1. Mr. G. Smith (Walthamstow, variatus, 78); 2 & 3. Stephen Emptage (variatu, 71, 70); 4. Mr. B. Myers (ch. fin, 66). **NS:** 1. Mrs. M. Crewe (sailfin, 66); 2. Mrs. M. Nethersell (Riverside, blue sphenops, 66); 3. Mr. R. Brett (N. Kent, sailfin, 59); 4. Mr. B. Myers (gold, 54). **NT:** 1, 2 & 3. Mr. K. Usher (Doncaster, X. variatus ziphidium, 70); P. gracilis, 68; P. gracilis, 68); 4. Mr. C. Morrison (P. Talbot, blue limias, 65).

**XB-M:** 1 & 3. Mr. M. Strange (C. aeneus, 81); B. phutunio, 76); 2 & 4. Mr. A. E. Noronha (L. thermalis, 77); L. thermalis, 75). **XOP:** 1, 2, 3 & 4. Mr. A. E. Noronha (red veiltails, 72); lilac veiltails, 69; blue veiltails, 69; green veiltails, 67). **XQS:** 1. Mr. G. Smith (X. variatus, 73); 2. Mr. G. Carpenter (Riverside, platies, 71); 3

& 4. Mr. A. E. Noronha (red platies, 71, 70). **XT:** 1 & 2. Mr. K. Usher (Doncaster, Priapella intermedia, 70); Betonessox belizanus, 69); 3. Mr. S. Powell (Riverside, L. melanogaster, 66); 4. Mr. A. E. Noronha (Orpington, Phallichthys amates, 66). **XU-W:** 1 & 2. Mr. T. Woolley (Saracens, pygmy sunbass, 77, 75); 3 & 4. Mr. R. Brett (bitterling, 74; stickleback, 72).

**Special class for fish over 12in. in length:** 1. Mr. & Mrs. Cooper (Corringham, electric eel, 86); 2. Mrs. M. Nethersell (Riverside, Tilapia mariae, 82); 3. Mr. M. Sandford (Reigate & Redhill, Clarias angolensis, 76); 4. Mr. A. S. Rigby (Gosport, 74, Hypostomus plecostomus).

**U:** 1, 3 & 4. Mrs. S. Hedges (80; 76, 74); 2. Mrs. M. Crewe (77). **V:** 1 & 3. Mr. A. Bullock (Bathnal Green, moor, 75, 73); 2 & 4. Mrs. H. Gardner (Reigate & Redhill, calico fantail, 74; nacreous fantail, 72). **W:** 1. Mr. R. Brett (N. Kent, mirror carp, 81); 2 & 3. Mrs. S. Hedges (koi, 77; Lepomis gibbosus, 73); 4. Mrs. M. Crewe (sun bass, 72). **Za:** 1. Mr. G. Smith (93); 2. Mr. M. J. Allen (84); 3 & 4. Mr. R. Brett (82, 81). **Zb:** 1 & 2. Mr. R. Brett (95, 94); 3. Mr. M. J. Allen (93); 4. Mr. J. Hughes (Roehampton, 92). **Zc:** 1. Mr. M. J. Allen (93); 2. Mr. R. Brett (92); 3 & 4. Mr. J. Hughes (91, 90).

## Breeding Marine Fishes for Aquaria on a Commercial Scale in the U.S.A.

OVER 100,000 marine tropical fishes were reared during the last 2 years at an experimental coral reef fish farm in St Petersburg, Florida. Percula clownfish, tomato clownfish, neon gobies, tiger gobies, sea robins, sea trout, black drum, spade fish and other common species were reared during these experimental years. Now, the company responsible, Aqualife Research Corporation, has announced a move for its marine fish farm and is about to launch into large-scale commercial production. Once the move to new quarters is completed, Aqualife Research Corporation will produce many species of clownfish and gobies and will begin propagation of marine angelfish and other Atlantic tropical fishes and invertebrates. An ideal island site in the Florida Keys has been obtained for the project. Aqualife Isle is a tropical island set in protected Bonefish Bay, a few miles northeast of Marathon, Florida. Only 4 water

miles separate Aqualife Isle from Florida's beautiful coral reefs and the warm waters of the Gulf Stream. Damselfish spawn on the rocks around the island, snappers school under the boat house and spiny lobsters hide in crevices under the docks. It is a perfect site for the culture of marine tropical animals.

Although tropical reef fishes have great reproductive potential (one female may produce hundreds of thousands of eggs per year) survival rates in Nature are very low and coral reef habitats are limited. Harvesting of marine tropical fishes is on the increase as their popularity for home aquaria grows at a rapid pace throughout the world. An estimated 5 million marine tropical fishes are imported into the U.S.A. each year. These fishes are collected from all the tropical oceans of the world and collectors are hard pressed to meet the demand. Nets, poisons and explosives are

often employed to extract these living gems from their hiding places in the reefs and concern has been expressed for the delicate ecology of the tropical coral reefs.

Aqualife Research Corporation is currently the only company in the world that has succeeded in propagating marine tropical fishes in large numbers. The company's success lies in the technical accomplishments of marine biologist Martin Moe, nutritionist Barbara Moe, and production manager Don Lockard, who have spent many hours developing the sensitive biological and mechanical systems that allow control of marine fish reproduction. Moe, formerly Senior Fishery Biologist of the State of Florida and Director of Biological Research of Oceanographic Mariculture Inc. of Riveria Beach, Florida, has been involved with fish culture for 15 years. Moore has been active in marine culture operations for the past 10 years.

# Guppies in the Public Eye

A report on the varieties displayed at The Aquarium Show this year

By F. CAMPBELL

**T**O stage a show to suit everyone connected with the aquatic hobby, and those closely related to it, is an unenviable task. I firmly believe, however, that The Aquarium Show '75 achieved this objective. It was perfectly balanced in every respect with top-class exhibits to satisfy all fancies; tableaux to delight the less aquatic minded; and a collection of traders who, between them, offered everything considered to be necessary for the successful keeping of fish.

As a guppyot of long standing, I naturally paid a great deal of attention to the guppy exhibits and was delighted to discover an almost comprehensive representation of the development of that fascinating yet frustrating little creature.

The specimens entered in the competitive classes were all of the large, broad-tailed, multi-coloured type we have become familiar with over the past few years and, from an aesthetic point of view, little fault could be found with the judge's findings. In the class for pairs the females were well chosen and in some instances were nearly as colourful as the male. In the breeders class, however, although preference is given to a team of two males and two females, the latter were conspicuous by their absence. Perhaps this was due to their general drabness in comparison with the males, for four colourful males make a far more eye-catching sight than two males and two females.

I am of the opinion that these beautiful broad-tailed specimens, imported from tropical countries where they are bred commercially, are impeding the efforts of the serious amateur breeder. Some of the results obtained in trying to produce a true-breeding strain are nothing short of chaotic.

Upon viewing the stand presented by the Federation of Guppy Breeders Societies I was delighted to note that its members are clinging to the short tails and sword tails which formed its original standards.

Founded in 1938 as the Guppy Breeders Society, it was not until 1951 that the Society had to make provision for two new outlines. The scarftails and veiltails arrived, some from America and some from Australia, and were promptly incorporated into the standards. These were, of course, much more flamboyant than the short-tailed varieties and in order that judging could be done on a fair basis the late George Phillips, who was at that time Chairman of the GBS Judges and Standards Committee, was instrumental in introducing the 'five twenties' system of pointing, i.e. twenty points each for body, caudal, dorsal, colour, and condition and deportment. To a certain extent, therefore, history has repeated itself but the specialists of today have not been able to cope with the flood of broadtails as efficiently as the GBS members of more than twenty years ago.

I still have an FGBS Standards Handbook dated 1955 and the outlines shown therein are cofertail, pintail, speartail, roundtail, top sword, bottom sword, double sword, lyretail, veiltail and scarftail. It was with a great feeling of satisfaction, therefore, that I noted every one of these varieties was presented on the FGBS stand at The Aquarium Show, even to the original veil, which was much narrower than the present trend and had curved top and bottom rays with the back edge slightly concave.

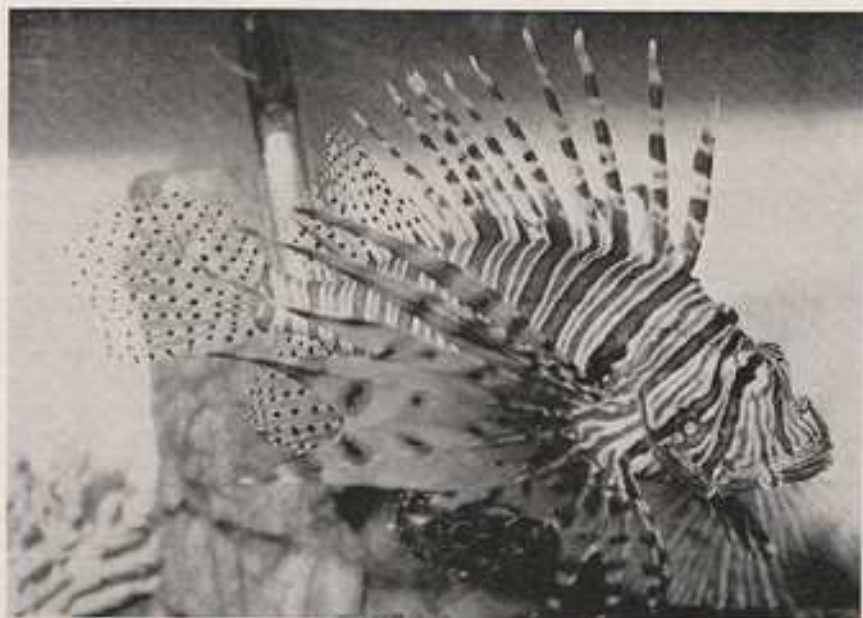
I know from experience how difficult it is to achieve a true-breeding strain of some of these old shapes, particularly the spears, pins and lyres, and the work of this specialist group in keeping them in the public eye is commendable. I might add that the lyretails on view were the only ones I have seen recently that conform to the FGBS emblem adopted so many years ago.

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## Dangers in the Marine Aquarium

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By GRAHAM C. ROBERTSON



A fish with many popular names (lionfish, scorpionfish, turkeyfish etc.), *Pterois volitans* is capable of giving a pain-causing jab from its spines

**H**AVE you ever sat down and admired the beauty of your marine tank — thinking what a safe hobby you had become involved in? Well, think again! Some of your fishes may be able to kill you without you being aware of the fact.

There can be said to be two types of fishes: poisonous ones and venomous ones. Poisonous fish will only kill you if you eat them, and it is unlikely that many marine aquarists will do this. A great many of the common species kept in aquaria can be poisonous. I say can be, since it is generally regarded that they gain their toxicity through their dietary habits. By eating poisonous marine algae or invertebrates they build up various toxins in their own tissues. Some species have their own built-in supply though, such as most

species of puffers and boxfish. Puffers produce tetrodotoxin, although it is believed that the food of these fish may also have a role in producing their poison.

Toxicity is at a maximum at the breeding season and there is a distinct relationship between toxicity and gonadal activity. The Japanese, believe it or not, actually eat puffers although they must be prepared by specially qualified cooks who have to undergo stringent examinations. All the toxic parts of the fish have to be learned and these must be carefully removed so as to avoid poisoning customers!

Venomous fishes have the capability of actively injecting poison into their victim and so provide a far greater hazard to the aquarist. Most aquarists will know of the poisonous spines of the scorpion fish.

There are a great many species in the family Scorpaenidae, most of which are found in temperate seas although the majority of poisonous species inhabit tropical seas.

The best known of these is *Pterois volitans*, also known in various parts of the world as a zebrafish, lionfish, turkeyfish, scorpionfish, flying dragon, fireworksfish, devillish and so on; all giving a good description of this magnificent species. *P. volitans* exhibits a typical defensive behaviour which every aquarist keeping fish should know. If antagonised or approached too closely by some moving object, such as an aquarist's hand, the dorsal spines are erected to their fullest extent and the fish rotates its body so that it is head down and its spines face its aggressor. A quick darting motion forward and the fish inflicts its sting, almost painlessly at first but after a few seconds the pain becomes excruciating. The wife of a B.M.A.A. member, Joe Sutcliffe, was stung by one of these fish while cleaning a tank and hospital treatment was the result.

The answer is to keep your hand out of the scorpionfish tank, but should it become necessary to perform some duties on the tank, then keep a close watch on the scorpion and separate him off from the part of the tank you are cleaning by a sheet of glass.

The poisonous glands of *Pterois* are not solely associated with its dorsal spines but three anal spines and two pelvic spines also have venom glands. The anal and pelvic spines, however, do not contain as much glandular tissue as the dorsal spines and so are not capable of delivering as large a quantity of venom into a wound as the dorsal spines. Most stings are, in any case, inflicted by the dorsal spines. The effects of being stung are quite unmistakable. There is almost immediate pain, which is very intense, and this radiates out from the vicinity of the wound. It can last for hours or days and is usually accompanied by a reddening and swelling of the affected area, which may also feel hot. There are also a multitude of other effects such as nausea and faintness, and even deaths have been reported.

There is some immediate first aid which can be given including cleansing the wound, by bleeding if need be, and

immersing it in as hot water as can be withstood. The important aspect of treatment is to combat shock and maintain blood circulation and heart action.

Another venomous marine which is perhaps not so well known for its poisonous properties is the black and white striped catfish *Plotosus lineatus*. This is somewhat regrettable since it is quite a common fish in dealers' tanks yet it is almost certainly one of the most dangerous venomous fishes known, and a sting from this species may be fatal. I know of a great many aquarists who are ignorant of the venomous nature of this species, let alone the degree of its toxicity.

Its venom apparatus is composed of the dorsal and pectoral stings and the axillary gland. The dorsal and pectoral spines are covered by an integumentary sheath and below this, running the entire length of the spines, are the venom glands. The axillary gland is situated at the base of the pectoral spine. This gland is connected by means of a canal to the tip of the pectoral spine, so supplying it with venom from not only its own fin glands but also venom from the axillary glands. The spines of this species are particularly dangerous since they are locked into a rigid extended position if the catfish is disturbed, such as if it was being caught in a net.

With its spines erected it would be quite easy for this species to become entangled in the mesh of a net and the aquarist may unknowingly try to untangle it using his fingers. The fin spines are very sharp and will quite easily penetrate the skin. This causes the integumentary sheath to be damaged and the venom glands, thus being exposed, release their poison.

Violent pain results which may last for 48 hours or more and may be accompanied by other effects, and subsequent infection. The wound which is inflicted may also take many weeks to heal so it would be well to think carefully before buying this species.

I am not saying that aquarists should not buy these venomous fishes, but they should be aware of these dangers. Stories of the poisonous nature of scorpions etc. may, in some individual cases, be exaggerated. In a great many cases, though, they are not; and one would be foolhardy indeed not to treat these fish with the respect which they deserve — for your own good.



**COLDWATER SCENE**

By FRANK W. ORME

- **Standards for goldfish varieties**
- **Bristol coldwater display**
- **Peculiar behaviour of water hawthorn**

OH dear, oh dear, was it really necessary to create more confusion in the world of the fancy goldfish? Apparently the 'Confederation of United Kingdom Aquarists' thought so, for they have produced a further set of standards to add to those which already exist. I cannot help but feel that they would have served the hobby better if they had saved their money by merely announcing they intended adopting those published by the Goldfish Society of Great Britain!

The copy, which I was allowed to borrow from a friend, comprised 29 pages, stated to be 'copyright', and commenced with an explanation of the terms used. This was followed by a straight word for word copy of the GSGB description of the 'Main variations in external character possessed by varieties'. Even this heading can be found, on page 3 of the GSGB Standards, as the final sentence of their introductory paragraph; the Confederation have merely left off the last few words, which read 'in Great Britain in 1970 were as follows: —'

Pointing differs — the 'Confederation' using the well-known 'five twenties' sys-

tem. The standards also differ from other standards on one very important point and this is in the 'Breeders Classes'. Whereas it is generally accepted that a breeder's team of young fish should consist of four, the 'Confederation' standards require six fish and this, I suspect, reflects the influence of tropical interests. This, I think, is also evidenced by their pointing for size, which gives an 'Aquarium Norm', in which fish of a stated length are awarded 15 points, fish exceeding the stated size are given additional points to a maximum of 20, whilst small fish have points deducted. Large coldwater fish are usually older specimens; therefore, under this system, a young fish is automatically penalised owing to its lack of growth.

Acknowledgements are made to the GSGB for the veiltail, fork-tailed globe eye (incorrectly called a 'globeye'), and broad tail moor. With the exception of the common and Bristol-type shubunkin, the other varieties could also have been acknowledged — their resemblance to the GSGB outlines being so remarkably similar! The Bristol-type shubunkin is nothing

### Goldfish is Top in Premier Show Awards

Best fish in the show at The Aquarium Show '75 was this common goldfish, entered by Mrs Sybil Hedges of Bethnal Green AS



Photo: Cliff Harrison

like the shubunkin, having a heavy common goldfish body and a tail vaguely resembling that of the Midlands produced Bristol shubunkin standard. The fish shown would not be tolerated in the tanks of a true enthusiast of the Bristol shubunkin.

Harsh words, I know, but, if standards must be proliferated, at least let them contribute something. Unfortunately, this latest effort has produced nothing new — the shubunkin apart, even had it been necessary to bring out a new standards booklet — which it was not — I cannot see this being welcomed by lovers of the fancy goldfish.

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During October, BBC television presented a discussion on 'Nationwide' between 'Tommy' Thomas of Bristol AS and Bill Leach of the GSGB. The subject under discussion was the Bristol shubunkin and the standards of the two societies for this fish. As readers are no doubt aware, each requires a different outline for the tail and the reasons for this were gone into, together with a brief history of the variety. Both live fish and the two differing standards were shown, and these were used to illustrate the points made by the speakers.

Although the general public may have been wondering where the news value was they probably found the fish interesting, which is good publicity for the hobby. To the goldfish exhibitor the discussion was of great interest, especially the end of the programme announcement that both sides hoped to get together with the aim of producing a mutually agreed standard for this variety. It is to be hoped that this will happen and, thereby, produce a single standard in place of two!

★   ★   ★

At the Bristol AS annual Coldwater Open Show banks of tanks, ready filled with water, awaited the forty or so exhibitors to arrive. Many travelled quite long distances, from as far afield as Northampton, Dorset, London, Devon, Hampshire, Birmingham and Lancashire. In all, they staged 315 fish in 19 classes which were ready for the judges' consideration by 11.30 a.m.

The public were admitted at 3.00 p.m.

and a steady stream paid their admission into the hall. As with the exhibitors, many travelled over quite long distances. For instance I had the pleasure of meeting friends such as Mr & Mrs Amos from Northampton, Gordon King from Hertfordshire, Mr & Mrs Whittington of Surrey and Mrs M. Dudley from Wimbledon, to name but a few. Part of the joy of visiting these shows is the pleasure of meeting fellow enthusiasts and chatting over fishy matters.

A pleasant surprise came when Mr 'Tommy' Thomas of Bristol AS reminded me of criticisms I made of their show schedule, last year. He thanked me and said that my remarks had been valid and, therefore, acted upon by the Show Committee. How nice it is to find that criticism is taken, by some people, in the manner in which it is intended. I do not become a critic unless I feel it is warranted and would benefit the hobby in one way or another.

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At the time of writing these notes, October news has reached me that the proposal to form an 'umbrella' organisation to represent goldfish interests will take a further step forward during November. Representatives of the proposing groups — Association of Goldfish Breeders, Association of Midland Goldfish Keepers, Bristol Aquarist Society, Goldfish Society of Great Britain, Midland Aquarium and Pool Society and Northern Goldfish and Pondkeepers Society, will meet at Coventry as guests of the AMGK. The purpose of this meeting is to place the organisation upon a firm footing by the election of officials and agreeing the aims and principles that will guide the officials and delegates in their future actions and decisions.

This is good news indeed and a move that should receive the support of all enthusiasts of the fancy goldfish. With a single body, comprising only goldfish hobbyists, to represent the goldfish-keepers' interests it is quite possible that the status of the goldfish will improve. At the present time most national, area or local organisations are dominated by tropical fish interests, with hardly any voice to speak for the coldwater side of the hobby. Proof of this can be seen at the majority of open shows. Very few

Officers of the Goldfish Society of Great Britain arranging the Society's exhibit at The Aquarium Show '75. Mr M. D. Cluse (left), president of the Society, entered fish in the first-ever public show in London in 1926



water for the coldwater fish to an extent comparable to tropical classes. If this state of affairs can be improved, so that more comprehensive coldwater classes appear in a greater number of show schedules, it would be a step in the right direction. If a wider range of classes were provided, instead of the usual Any Variety Single Tail, Any Variety Twin Tail and Any Other Variety Pond or River, it is possible more goldfish exhibitors would be encouraged to enter their fish in these shows.

A strong body and voice to represent the goldfish hobby might also encourage other enthusiasts to band together into specialised groups. There is enough interest in most areas, and it only requires people who are present to take the initiative to seek out their fellow hobbyists and bring them together.

Let us hope that 1976 will see more specialist groups being formed, a wider range of coldwater classes in open shows and a strong national body to represent the interests of the goldfish keepers at all levels. For too long the coldwater fish keeper has been the poor relation of the hobby.



The hot weather earlier in the year had a curious effect upon the water hawthorn in my garden pool. For a time it made profuse growth and was smothered in flowers that produced seeds — these provided numerous seedling plants. One morning a visit to the pool provided a shock, for the plants appeared to have died overnight. The previously green leaves

and stems had turned brown and were rapidly rotting. I thought how lucky it was that I had saved some of the young plants — feeling sure that they would be needed to replace those which had apparently been lost. However, during late September new growth began to appear and in October the plants are as strong as they ever were. The subject was mentioned to a horticulturist, who told me that, because of the intense heat over a prolonged period, his own plants had shown similar symptoms but he had saved them by providing shading and running in cold water once a day during the hottest spells.



Now that we coldwater hobbyists are at the end of the year we have little to do, in respect of our fishkeeping, and so the ideal opportunity is provided to check over any ancillary equipment, such as heaters, thermostats and aerators or water pumps. Any worn or damaged electrical wiring should obviously be renewed for reasons of safety. If any item is found to be faulty, and not of a type that can be reconditioned, it should be noted so that a replacement can be obtained. As this is December perhaps subtle hints would prompt some new equipment to appear on Christmas morning — well, it could happen!

Finally — did you hear about the bullion dealer who lost a fortune when his goldfish turned silver? And on that note I will wish all readers a prosperous New Year and successful fishkeeping.

## MARINIST'S NOTEBOOK

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# Simplest Techniques are Best

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By ROY PINKS

**A**FTER a singularly unsuccessful and expensive essay at keeping tropical marines some 3 years ago, I took stock of the sorry situation in order to decide whether to continue the agony or not. Unlike other forms of pet keeping, there are no reliable advisers to turn to, and on the whole any progress you make is largely of your own inspiration. At all costs you should avoid turning to a dealer or an enthusiast for advice. Most dealers are in it for the money and you cannot expect them to be wholly truthful. The enthusiast has a lemming-like tendency to disregard all the signals and to follow disaster by even larger scale calamity. All you can do, really, is to take apart your own experience and question every single step you took. Obviously a log book or a diary is a great help here, but you have to have some yardstick for comparisons.

Readers will be familiar with the names of Spotte and King. The former has published a number of books dealing in detail with water chemistry, and even if you cannot understand the scientific detail, the conclusions are in the sort of English anyone can understand. John M. King, the late Director of Research of Marine Systems Inc., Ohio, was another brilliant young American, whose recent death was a sad and significant loss to the ranks of responsible and dedicated mariners. His careful and detailed guidance will be found in past issues of *SEA SCOPE*, and those who wish to get a balanced view of marine aquarium management should study what he wrote.

The impression one gets from reading the more balanced papers on the subject is that some of the best results come from application of the simplest techniques. The use of ultraviolet radiation to kill micro-

organisms, for example, is put firmly in its place, and I was relieved that none of the recommendations could be classed as being unreasonably expensive for the average fishkeeper. In writing a column of this sort I think it important that I do not lose sight of the fact that most readers are neither millionaires nor scientists. If it seemed that success in marines could only come by spending unduly large sums of money, I would stop writing on the subject altogether. Similarly, if it really seemed that we could only get results by highly complicated and devious methods, I would throw my hand in, for the simple reason that I live in a house which is a home, and not a public aquarium or a research laboratory.

Looking back on my failures, I believe that my main shortcomings fell in the following categories. First, I was too ready to accept the recommendations of dealers as to what fish I should keep, and how many. Secondly, I overcrowded. Then I blithely disregarded the standard chemical tests after the initial maturing period of the tank had expired. I believe that I overdid things with medication, and that the variety of food offered was wrong. I seldom did anything about the tank water, and only topped it up when it fell below the level of the top frame. So long as bubbles were coming from the undergravel filter pipe outlets, I lost no sleep.

Perhaps these revelations will give some clue to where I went wrong — in fact many will wonder how I ever kept a fish alive at all. Thus, I attacked all these points and made a determined effort to do

*Continued on page 373*

Extracts from an aquarist's log kept on an

## Amazon Adventure

*In June this year a party of aquarists from the U.K. set out on a trip to the Amazon (via the Caribbean) to collect fish. Keith Barraclough, one of the 'expedition's' leaders, kept a detailed, interesting, amusing and personal log of the party's travels and experiences, some extracts from which are presented here.*

Cartagena, Colombia, was the base from which we would start our Caribbean experience. From there we made a trip to Rosario Island for observation of marine fishes. The outbound journey to Rosario took just over 3 hours. The weather was glorious and the party was already showing signs of sunburn. We were escorted a greater part of the way by small flying fish skimming along the surface of the water with the occasional pelican diving into the sea, filling his beak with fish. Two black cormorants stood on posts marking the entrance to Rosario, a coral island in the Caribbean. It was just as exotic as it sounds. You could clearly see the coral reefs only a couple of feet below, fish darting in all ways as the boat was slowly guided through the reef to a small landing stage at the foot of the beach where we were to spend our next night. The chalets were very simple with just a roof made of leaves and no windows.

Very quickly we were nearly all in the water with snorkel gear, catching fish for identification and photography. It was less than ten minutes before the first coral-grazed knees and urchin spines in toes were reported, but this was part of what we had come for. Only ten paces from our bunks the reef was alive with fish, small damsel, yellow-tail blue, beau gregory, wrasse, butterfly, yellow and

blue tang, small hogfish, the occasional boxfish and squirrel fish, with crabs, anemones, starfish, tubeworms etc. Soon we discovered more reefs nearby where even more activity took place with new spawning of fry darting in and out of large coral heads, and the odd moray eel looking out to see who was poking about. It seemed only minutes before we had to break for lunch. Fish was the order of the day as it was to be for a greater part of our diet when away from general habitation.

Straight after lunch we took the boat around the other side of the island to a large submerged reef. Here, the water was quite deep. Although the fish could be seen from the boat it was necessary to swim about 50 yards to the reef proper in order to experience the wonders of such a place. Here, the coral head stood up to 10ft. high and we had to be very careful of the fire coral, a soft coral that burns the skin rather badly on contact. Almost everyone had a go at snorkelling around this area, where one could see angel fish (*Holocanthus isabelita*) up to 20in. long and an amazing 4-5ft. hogfish.



A small and simple lodge on Santa Sofia Monkey Island was our first and major base in the Amazon. The sturdy wooden building was on stilts and had four rooms, a dining area and a large rest area.

Within minutes of getting our kits into the rooms a party was out looking for fish. The ground was very swampy where the river had been in flood, creating many inland pools. The mud was glutinous, as one sank up to the knees. Soon we were catching fish, small ones at first — blood-fins, small characins, *Mylossoma*, dwarf cichlids and many like that. We went

down river a little way, seeing a large number of squirrel monkeys in the trees. We turned off through the narrowest gap in the trees, and along a stream through about 150 yards of dense overhanging trees, which suddenly opened out into a large lake full of giant Regina water lilies, some with leaves 5 ft. across. Under the leaves and in the reeds we discovered festive cichlids, pencil fish and yet more *Metynnis*, *Leporinus* up to 6in. and odd killiefish.

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A local Spanish-speaking family (father named Navarro) accompanied the party as their fishing guides. For the first fishing expedition a large pool close to the lodge was selected.

Navarro and his daughters carried the canoe across the mud to the pool and were very quickly running the big net out. A number of us joined in around the net, winding it in and removing the floating water hyacinth. The fishing family seemed quite taken aback when we joined them in the water. I think they had expected everyone to stand on the bank and watch, but here we were up to our waist in water, which was so cloudy with silt that you could not see 1 inch below the surface. They were even more surprised when we could readily recognise a great number of the fish, the Latin names being the same in Spanish as English, and this first effort was to form a bond between us and the local family of mutual respect.

The first net full produced a wealth of varieties — over thirty in all, and a great deal of discussion took place in the water trying to identify all of them, but already fish were being caught that none of the party could positively recognise. This first pool was an aquarist's paradise, producing *Metynnis duraventis*, *Piranha natterii*, *Piranha rombus*, *Leporinus frederici* and others, Peruvian bloodfins, *Aequidens curviceps*, *Hemiodus gracilis*, *Prochilodus*, angel fish, festivum, *Curimatopsis*, a spike-tail characin, silver hatchets, *Rivulus*, small pike cichlids, a dogfish with enormous teeth, a 12in. tiger shovel nose, some large blowfins, a 10in. plecostomus, *Copeina* and *Pyrrhulina*, assorted *Pimelodella*, beacons, banjo catfish, leaf fish, eques pencil fish, *Charax gibbosus* and numerous other tetras.

The river falls as much as 12ft. in the dry season and pools such as this one must dry out completely. This one was 4ft. in this part but we discovered after lunch that it was much deeper in places and houses large piranha. We were told that by August the piranhas are very large, because as the water goes down they eat all the other fish. Water in this pool was pH 6.7 and DH 7 (test by courtesy of Alf Robbins), and very heavy with suspended silt, which must offer a great deal of protection to young fish.

We returned to our lodge for lunch with thousands of fish, caught in the first morning, which we kept in a big quantity of large cans.

★ ★ ★

On the day of our move upriver to another lodge we were up before dawn. At our selected fishing spot the river was rather like a lagoon. It was impossible to get on to the bank as there was none — just marsh land. We unhitched the small boats, leaved the nets and were away once more. On this occasion we were not to go far from the boat. The water was deep and the net work had to be done from the boats or by swimming. Navarro was not happy about the catch. Not enough, he said, but the variety was there and this is what we were after. Water was very soft here with a DH reading of 3-4, pH 6.7. Fishes included angels, festive cichlids, *Plecostomus*, pike cichlids, severum, piranhas, *Mylossoma*, *Leporinus*, bloodfins, scissortails, characins, *Amblydoras* cats, knife fish, *Ameiurus* cats, crabs and snakes. Snakes were still very much in our minds this day; after half an hour we encountered yet another, this time the deadly coral snake. Navarro had cast the large net around a big clump of floating water hyacinth, having totally encircled it and drawn it up underneath. We all eagerly set about throwing the hyacinth out of the net. Suddenly Navarro shouted 'coral snake' and we all retreated into the canoes, quicker than a tube worm into its tube. There, swimming around in the net, was an 18in. long beautifully coloured coral snake. We were staggered when Navarro indicated that he was going to catch the snake, but sure enough that is just what he did with his bare hands. Carefully he put it in a polythene bag and

sealed it, hanging it upon the boat. At this point we returned to our big boat for lunch (would you believe, fish again?).

After lunch we did a little more fishing, catching pike cichlid, festive cichlids, angels, knife fish and a very attractive baby lung fish. Now we had to move on towards our new camp Tambo Amazona, where we arrived just before nightfall. This was a large platform on stilts over the water with a roof made from leaves, no sides at all and no beds. The boat crew and our guides quickly set up the dozen or so hammocks, which caused great hilarity as many of us had not slept in hammocks before, especially completely in the open. Soon the mosquitos were out. They were not too bad but the beetles and other large flying objects began to move in by the thousand.

After a meal we sorted out the plans for the evening. Tonight we were to do some night fishing and a crocodile hunt. We split the party in two, one group going on the crocodile hunt, the other on the night fishing with a planned change after one hour. We were anchored in a large lake and the still darkness had to be experienced to be believed. I was in the fishing party first go. We headed out into the dark unknown. It was quite eerie once around the bend and into the reefs. We slowly drifted near the edge, where there were a number of very large silver hatchets that proved quite hard to catch, plus a few *Plecostomus* and talking cats. It was not, however, very productive. After about an hour we returned to the boat with less than a dozen fish. Shortly afterwards the other boat returned absolutely elated with their experience, having caught four crocodiles up to 4ft. long.

★ ★ ★

Sunday morning dawned, our last day on the river. We had completed our fishing programme. All that remained was to sail down river to collect our fishes from Monkey Island and back to Leticia. On the way down river we visited two Indian villages, the Yagua and Tricuna. The Yaguas being very primitive, the Tricunas much more westernised, although the two were only about 15 miles apart. We loaded all the fish into our boat and arrived back at Leticia just after dusk feeling very tired and very sticky. The hot water and

showers of the *Paradore Ticunaa* were very welcome. After a meal and a few drinks everyone retired in preparation for the long journey home.

Monday morning we packed the fish we were to carry as hand baggage and tried to make arrangements to have the rest shipped forward. This unfortunately did not materialise. However, a number of very interesting and much valued specimens were brought home and arrived in good condition. The homeward trip was uneventful but very smooth; we left Leticia at lunchtime on Monday and arrived at Heathrow on Tuesday evening.

A number of friendships were struck or strengthened on this memorable expedition and it is the intention of Worldspan International and my Company to endeavour to make another such trip in June 1976, when we sincerely hope more enthusiasts will be able to join us and enjoy all the pleasures of collecting and studying fantastic tropical fish in their natural setting.

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## Marinist's Notebook

*continued from page 370*

better. It would have been cheating to put them all right at the same time, so I applied the various corrections over a period in the hope that I might observe whether any one appeared to have a greater impact than others. Of course, scientifically speaking, this was a hopeless sort of operation because there were no controlled conditions. However, the average aquarist has not the means to indulge in anything elaborate and I feel that what I did was what many would agree with as being tolerably realistic, taking into account the everyday constraints which affect most of us.

What rather worries me, though, is the series of stories one hears from time to time about the chap who has kept several large angels and butterflies in a 30 gallon tank for the past 3 years. Of course, the water looks like gravy and he feeds the fish on dried food and dog meat. All I wish is that he would get in touch!

An Introduction to some of the less common



Leaves and flower of the best-known species of ludwigia to aquarists — *Ludwigia natans*

# Aquarium Plants Called Ludwigia

By W. TOMEY

Photographs by  
the author

**S**PECIES of the genus *Ludwigia* have been known as strong growers and particularly good aquarium plants since just about the beginning of the aquarium hobby. In my country their tough, vigorous growth has even given rise in the hobby to the phrase 'as strong as ludwigia' and indeed these splendid plants don't easily give up the fight! They also have many other good qualities: there is their shape and the colour differences between the species. Because of their method of growth, a few small cuttings in the aquarium can easily be increased to become a group of fine plants. Another advantage is that ludwigia, provided that it is well treated and the lighting is correct, will grow in all parts of the tank and can be used as a back, middle or side plant, while, if allowed to grow tall, it will hide from view technical equipment such

as heaters, thermostats and air-tubes. All of which is more than enough reason for us to re-consider these old-established plants to see how we can best grow them in modern tank conditions.

Although some species of *Ludwigia* do still give a very satisfactory appearance I can't help thinking that the ludwigia seen in tanks in the past looked even more beautiful and had a better form and colour than that seen in the modern tank. And I think there are probably two reasons for this: one is the former, more general, use of tungsten lighting and the other the fact that previously taller tanks were used in which the plant could grow up without being continually topped or, at least, the interval between topping was longer. This seems a very important point to me. The plants were not disturbed and could develop stronger growth. Modern tank



sizes don't allow plants to remain untouched. Constant topping is an absolute necessity if they are not to overgrow themselves, but this does often cost the plant its health and vitality. The plants themselves react by ceasing to gain height and produce only very small leaves, that are either quickly shed or become yellow.

To maintain the health and vitality of *Ludwigia* species in the modern tank it is necessary (a) to position the plants correctly; (b) to keep the substrate light and nutritious; (c) to use a combination of normal tungsten bulbs and fluorescent tubes.

It is worth noting that most species of *Ludwigia* react very well to the use of preparations containing the iron salts so necessary to plant growth. *Ludwigia* species cultivated in modern tanks often show the symptoms of iron salts deficiency — bareness of stem, yellowing of the leaves and slimy leaves etc. In connection with this it is also interesting to remember that the 'old-timers' used to put rusty nails into the gravel between the roots of *Ludwigia*.

Bottom compost must include those items that are advocated in modern methods of cultivation, i.e. clay, loam, ferrous sand and some peat dust. This formula will help to prevent weakness of growth and give the plants greater vitality.

In natural conditions *Ludwigia* is more of a bog plant, propagated by fruits from the small flowers. Continual cultivation under water makes generative propagation of the plant quite impossible and it is still an open question whether such cultivation might not weaken the plant.

As for the quantity of light required, different species of *Ludwigia* require a variety of lighting conditions, depending on how they grow in Nature. Generally, *Ludwigia* species grow best under combined normal bulbs and fluorescent tubes and if the plants can be placed so that they obtain the full benefit of both types of lighting then they gain the most.

It is not possible to give exact details for the lighting requirements of *Ludwigia*. Our own experience must guide us with each different tank, but a comparative method is useful with the different species. So, if *Ludwigia natans* is growing well under a certain type and quantity of light, then even more light is required for *Ludwigia arcuata*, which indeed does grow



The pointed leaves of *Ludwigia glandulosa* vary in colour from dark bronze to wine-red

best under its own spotlight.

To cultivate *Ludwigia* obtained from the wild it is necessary to make sure that there is not too much deviation of temperature. Once the *Ludwigia* adapts, temperature is not so critical and the plant develops well at temperatures between 70° and 85°F (21-29°C).

*Ludwigia natans*: origin, tropical America. Perhaps the most useful aquarium species of the genus. Leaf colour depends on the lighting available and varies from deep olive-green to a gold colour, the underside frequently being deep wine-red or even lilac; leaves are egg-shaped and short stemmed. Stems are often many-branched and give a bunchy effect so *L. natans* is extremely useful against the side and rear glasses of the tank to serve as camouflage for any necessary equipment. The plant stock is propagated by taking cuttings from the stems; the parent plant will continue to flourish and you will also have lots of new plants.

*Ludwigia glandulosa*: origin, southern U.S.A. This is a fairly new addition to



Floating leaves of the remarkable *Ludwigia helminthorrhiza*, a plant that will thrive under aquarium conditions of strong top lighting, preferably of natural source

our tanks, and a very graceful species. The narrow leaves are pointed and their colour is very variable — from dark bronze to dark wine-red. It is a rapid grower and forms many branches. This is a very nice plant and it lends itself beautifully to making contrasts in colour and form with other types of plants. It does not require a special place in the tank but will grow in any position.

*Ludwigia arcuata*: origin, eastern U.S.A. and by introduction in Europe. This is also a very nice aquarium plant but much more difficult to keep than either of the two previous species. The stems are dark green with dark-red tops and there is dark red also in the small, sharp-pointed leaves. High temperatures are not for this species. It does best at 45-65°F (7-18°C), especially if the plants are from the wild. If the *Ludwigia arcuata* has been cultivated in the aquarium for a length of time then it will be able to withstand the temperatures of a tropical tank much better.

*Ludwigia arcuata* requires a powerful lighting and must be placed in the aquarium where light can reach it direct. It's better to give these plants their own 'spot' by means of which the group of plants can obtain their own strong, direct, light for some hours a day. Important also is a light substrate, through which the fine, divided roots can push their way easily. Many stems will form at the nodes and a dense bunch of plants will form. Cuttings



A species preferring relatively cool water conditions is *Ludwigia arcuata*, with narrow, sharp-pointed leaves. It can acclimatise to tropical tank temperatures



by  
ARPEE

## Personal COMMENT

**WE** have already listed the routine functions which should be carried out by the aquarist at monthly intervals, and in these notes I will discuss subjects which require attention at three-monthly periods. It must be noted that this guide will need to be adapted to the requirements of the situation: clearly, the owner of only a few tanks will be able to construct a different programme from that which is necessary for the upkeep of a fish house — for example, the air temperature is unlikely to bother the former very much, but in extremes of weather the fish house keeper can get very worried indeed if his structure is as imperfect as so many are in ventilation and insulation.

**Water quality.** Although I have already mentioned the need for the marinist to make regular chemical checks of pH and nitrite values, it is becoming increasingly clear that it is not possible to keep marine animals alive in an aquarium for more than a few months unless significantly large changes of water are carried out. It is not possible to give an accurate guide as to how drastic this need be, as much depends on the overall efficiency and the stocking of the tank, but it is obviously sensible to err on the safe side. This means that it is going to cost you more to run your marine tanks, but you should lengthen the life span of your charges: whether you will prolong them noticeably is a matter for personal observation and recording, and I urge all marinists to watch and communicate on this, continuously and diligently.

In the crudest possible terms it seems likely that the only way in which we can cope with marines satisfactorily is by means of truly open systems, and that rules out most of us. If we choose closed systems, the only alternative, we must run

our tanks as closely to the open principle as we can. As the turn-round of water (i.e. a complete change) could be every half hour or so in an open system, the once in 9 months change which is suggested can be seen, starkly, as the handicap with which most of our fish begin their short aquarium lives. Therefore, even though I advocate changing a third of the tank water each quarter, it is preferable to try to work out a more frequent routine. Certainly, the 3 months mark is that at which anxiety should be felt if nothing has been done meantime.

The fresh water enthusiast is free of this sort of worry, on the whole, but if he can collect clean rainwater there seems to be a tonic effect by replacing a quarter of the tank content with this rather precious commodity. In time, the fishkeeper develops an awareness of water quality, using eye and nose, and although old, matured water is very beneficial in some cases, it is generally better to keep it 'light' rather than too 'heavy'.

**Air supply.** After pump diaphragms, airstones are one of our biggest banes. After many years of fishkeeping I have never come to terms with them completely and I regard them with the utmost mistrust. This being so, I have a hard look at them at quarterly intervals and throw out any which do not perform uniformly. I have come to the conclusion that various methods of renewal and rejuvenation simply don't work, and even if you have had some success in this respect, the wretched junction pipe so often comes unshipped just as you are reconnecting it. It is wise therefore to check on your reserve supply of airstones at this point in the year, and to make a purchasing visit to your retailer for this sole purpose.

**Whiteworm cultures.** One of the most valuable of all live foods, the whiteworm can prove distinctly unco-operative just at the time when you most need them unless you give them regular attention. The need to feed them every few days usually means that they are under the eye of their user, but the deterioration of cultures is something which creeps up on one, and it is sometimes too late to do much apart from averting complete disaster by tearing the things to bits and starting all over again. As it takes some weeks for cultures to begin yielding satisfactorily, it is really better to start new ones every so often,

using the old ones as starters, on some form of rota system. It is certainly a messy job, and one which most of us try to put off as long as possible, but if we aim to achieve something every 3 months, the worst unpleasantness will probably be avoided.

Users who are driven to distraction because their cultures are plagued by fruit flies may try covering the tops of the containers with discarded stocking tights, though it is, of course, important that they are not too holey. If you can persuade your female company to wear the more decorative makes, the somewhat odd aspect of tight-festooned earthenware bowls can be rendered passably bearable, but I wish there was a better answer.

**Stocks.** It is just possible that you may find that you have a little spare cash in your pockets once a quarter (though much depends on which quarter it is). This is the time to check to see whether you really have the spares back-up you should have. Spare heaters, thermostats, fluorescent light tubes and even pumps should be kept in reserve against the unforeseen emergency. I admit that shopping for spares is one of the drearier things we have to do, so phase it in with the occasion when your wife treats you to lunch, as this is an activity for which one deserves compensation.

I am sorry that the quarterly inspection is a list of some of the less-inspiring running adjustments. Can any readers suggest a few points to add which will uplift our spirits as well as those of the fish?



Although the buyer of tropical fishes is usually mainly attracted by the colouring and patterning of the species commonly offered for sale, it should not be forgotten that shape will also play a prominent part in the making of the decision as to whether to buy or not to buy. This review will therefore consider some of the more distinctive types of body formation, without discussing colour compatibility: readers will recall that examination of some of the main colour groupings has already featured in earlier comments in this series.

The following list is quite arbitrary and rather rambling, mainly because there is no accepted classification of shapes, and

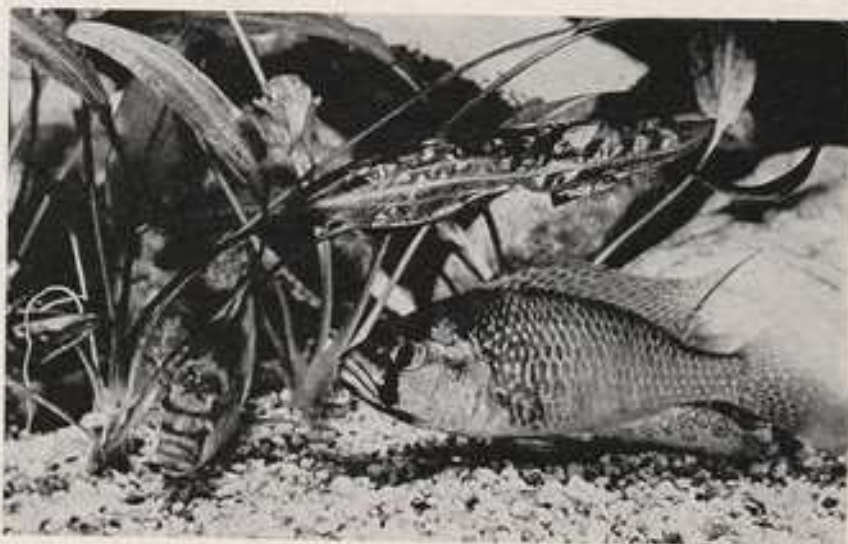
thus we may as well create our own headings. First, we should state what sort of fish we might regard as the norm, and then describe others in relation to it. I suppose that the most normal-shaped fish with which we are all familiar is the ever-popular zebra (*Brachydanio rerio*), and this should certainly be included in every collection. It is lively, easy to keep and a most striking fish which will naturally shoal without any prompting on its owner's part. It occupies mid and upper water.

If you would like a long thin fish, about as deep as the zebra, but more than twice as long, and one which will seldom stray from the upper 2 or 3 inches of the tank, then the family of halfbeaks (*Dermogenys* and *Hemirhamphus* species) are just what you are looking for. None is very striking, so far as colour is concerned — they are silvery in general, but some recently introduced species with red finnage are notable exceptions. Whilst still in the surface regions, the hatchet fish (*Carnegiella* and *Gasteropelecus* species) are very strong recommendations. Regard the shape of the zebra as forming the handle of the hatchet, and the blade as being the size of a penny piece. The silver hatchet grows bigger than the *Carnegiella* species, but is nothing like them by way of attractiveness. Hatchets are not especially long-lived, but a lot depends on whether you feed them properly (fruit flies etc.), as they do not really thrive on dried food even though they will accept it.

Imagine a zebra rather elongated and sharpened off at both ends, and you have a rough description of the pencilfish family (*Poecilibrycon* and *Nannostomus* species). There are numerous examples of these, and most of them are residents of the upper half of the tank. They are rather grand and precise and very streamlined and shining bright. You have to seek them out, but the effort pays off. Some are so thin as to look fragile, and great care must be taken in selecting only specimens which look robust. These are not difficult fish to keep, with the odd exception, but they will nearly all qualify under the heading of jewels, which is surely a passport to most collections.

A fish about ten times the size of a

## A Mouthbreeder Spawning



*Haplochromis burtoni*

IT was back in November, 1965, after I had been giving a slide lecture on spawning habits, that I was first asked if I had photographed *Haplochromis burtoni*. And it was not long after this that I came into possession of my first pair of this species, about which I then knew almost nothing. I put the fish in a 60 litre (14 gallon) tank with gravel and a piece of slate and stones. In one corner of the tank a few *Aponogeton* species were planted and some cryptocorynes. Next day the plants were all floating on the surface of the water. I turned to the literature, and found that these mouthbreeders came from the eastern and central parts of tropical Africa, in Bahr-el-Djebel, the Semliki river, the Albert Nile, Lake Albert, Lake George, Lake Edward in the Ruwenzori and from Lake Chad to the Nile. In DIE AQUARIEN-UND TERRARIEN ZEITSCHRIFT (DATZ) 1960, p.29, Mr A. van Nieuwenhuizen had described the fish as *Haplochromis wingati*, while in DATZ 1962, p.103, Dr. Wolfgang Wickler amended the name to *Haplochromis burtoni*. I thought that the difference lay largely in the number of flecks on the anal fins of these very closely related species.

The fish reach a size of about 10 cm. (4 in.), though the female remains somewhat smaller than this. They

By RUDOLPH ZUKAL

Photographs by the author

Translated by F. MARSH

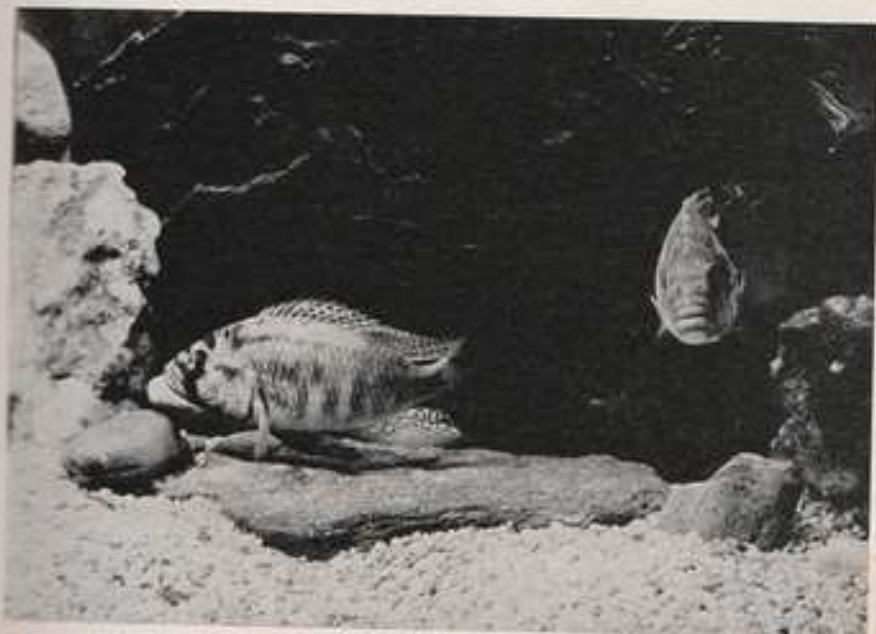
As the male shifts gravel from around the slate chosen as a spawning site the large expansion of which the jaws are capable can be seen



are very quarrelsome among themselves, and will attack small fish, and they must be kept in a largish tank. One can hardly describe the amazing colouring of the male and I confess that I had never seen such beautifully coloured freshwater fishes before. (though I realise that 'beauty' is a

subjective matter and a question of personal taste). But it is because of this wonderful coloration and the fish's spawning behaviour, that this species really deserves our attention.

Both the writers in *DATZ* had described the spawning as taking place in a hole in



The male (left) displays his spread anal fin before the female. On the anal fin the 'egg' markings are clearly visible



With the male laying almost on his side with the anal fin spread on the slate, the female appears to try to pick up the 'egg' spots

the bottom substrate, but my pair used a piece of slate. The male displayed with widespread anal fin in front of the female, with vibrating movements of its curved body. At this stage the female disappeared anxiously into a hiding place between the rocks — with good reason, for if the male had been able to follow her she would have finished up with torn and bitten fins. The water temperature was 80.6°F (27°C) and I had used water from the tap. The fish were being fed on tubifex worms, which were eaten greedily and so quickly crushed up in their jaws that bits and pieces of worms were falling to the tank bottom all the time. The female only had to be out of her hiding place for a second before the male was there, pushing her in the anal fin area. Again the female would hide, chased by the male, but he did not succeed in joining her in the hide-out since it was too small to contain them both.

Meanwhile the male was looking for a suitable spawning site, and when he'd found it, he started to clean up the slate. Each piece of gravel was picked up in his mouth and thrown to one side. This preparatory work excited the female's curiosity and carefully, if suspiciously, she peeped out of her hiding place. After a while, she swam right out; the male came up like lightning and remained a second

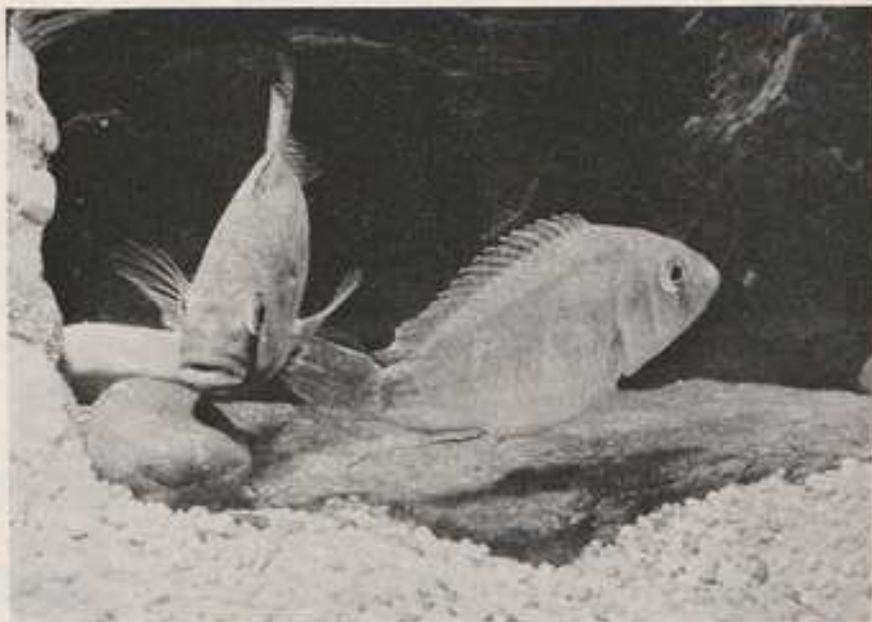
with fins outstretched, displaying with his body curved. Only his anal fin was stretched towards the female. Then the displaying male approached the spawning site with a zig-zag movement and the female hesitantly followed him. All the while the male tried to get his anal fin into the female's field of vision. It is on this anal fin that the round flecks appear which intentionally resemble so amazingly these mouthbreeders' eggs. The female tried to take these 'eggs' from the male's anal fin into her mouth. The male, meanwhile, lay on the bottom, his entire body trembling and the sperm was ejected and spread into the female's mouth.

In his article Dr W. Wickler observed that the female lays the eggs without arousing the male's interest, immediately collects them and that then, for the first time, she 'picks up' the fleck on the male's anal fin while the male is ejecting the sperm. My own observations were somewhat different, and with this pair of fish a different sequence of events occurred. At the time when the sperm was actually in the female's mouth, she had not yet spawned. Her 'picking up' movements were only directed towards the male's anal fin. The actual spawning came much later. Possibly what I saw was part of the 'foreplay' and that by 'taking up' the flecks the females' instinct to spawn was

aroused. When the female started to lay the eggs, the male hesitated for a moment, then came like lightning to the female, touched her anal fin with his jaws (the female also has a fin fleck, though this is not so deeply coloured as the male's) and with a circling movement the female spawned, in the way with which we are so familiar with *Haplochromis multicolor*. The anal fin was then stretched out towards the female and the spawning process repeated. While the female collected the

eggs the male waited fairly quietly beside her.

The spawning lasted about 30 minutes. When it was finished the female disappeared into the hiding place between the stones (I had already removed the male from the tank to give the female some peace). On this first occasion I spent 14 days trying to tempt the female to eat, to find out if the eggs were still in her mouth. However, when she did start to eat to my great regret there was no trace of the young or eggs.



Eggs are deposited by the female as she makes circling movements over the slate. The ovipositor can be seen in this picture

## Personal Comment

*continued from page 379*

zebra, but one which will not harm it, is the red-tailed black shark (*Labeo bicolor*). Any of the *Labeo* group will spell out 'shark' to the viewer, and although I have personal qualms about the attractiveness of sharks, there is no disputing the fact that many people are fascinated by this body shape. I have little doubt that they attribute to this rather bumbling species the downright nastiness of real sharks, and in many cases it is pointless to try to disillusion them.

If you affix a somewhat flattened triangle top and bottom on to your zebra shape you have something like the lozenge shape of the black widow (*Gymnocorymbus ternetzi*), which is a silver and black patterned species of considerable character. It is a dignified swimmer in mid-water and looks magnificent in a group of a dozen or so. This is a long-suffering fish and I have never had one which displayed any bad habits, so it is obligatory for a 'shapes' collection.

We will consider further mid-water species in a separate article, together with others which tend to inhabit the lower part of the tank.



## What's New?

### Marines by Rail

ONE of the difficulties facing the would-be mariner in this country is undoubtedly that of obtaining stock. Excellent as many of the marine suppliers' establishments are, there are just not enough of them to enable the majority of aquarists to purchase fish. Now the Matlock Waterlife Centre (Nottingham Road, Tansley, Matlock, Derbyshire; phone Matlock 4221 and 4699) are introducing 'Rail-a-Marine' — a nationwide express despatch service of live-stock and dried goods for all marine aquarists. A clearly worded brochure states that all fishes are fully quarantined and tank acclimatised before being offered for sale and are healthy and feeding before despatch. Live arrival during transit is also guaranteed (though no responsibility is accepted for loss once the fish has been introduced into the aquarium). Hints on unpacking are given to the purchaser and special money-saving collections suggested of assorted fishes, assorted invertebrates or a mixed fish and invertebrate collection, with the guarantee that all collections will contain first-quality stock only and compatible species. Minimum general orders are for £10.00, plus carriage and packing of £2.50. Brochures can be obtained from the Waterlife Centre (s.a.e. please).

### Up the Amazon '76

THE success of the 'Amazon Adventure' tour last summer has encouraged the organisers

and conductors, Mr Keith Barraclough and Mr. Gordon Holmes, to plan well ahead for 1976 and the itinerary for 1976 is now available. The tour leaves London on 29th June next for 17 days to Colombia and the Amazon. A longer stay in the Rosario Islands (a coral paradise set in the Caribbean) has been arranged and a longer period allotted to the stay in the Amazon for tropical fishing and visits to Indian villages, where the people still live in their traditional primitive state. Rare and valuable fish were caught and brought home by the 1975 group and the organisers hope that even more enthusiasts will join them next year. Details from Mr K. Barraclough, Hayfield Mills, Haycliffe Lane, Bradford 5.

### Sub-Gravel Filter

WITHOUT doubt stemming from the interest in marine fishkeeping, one aspect of the hobby engaging the close attention of manufacturers at present is that of undergravel or biological filtration. Interpet of Curtis Road, Dorking, Surrey, have recently released their CV Sub-Gravel filter, incorporating several ideas that should particularly interest the mariner. The design of the all-over filter plate, the manufacturers explain, is based on horizontal filter 'columns' that make a plate strong enough to support rocks, while allowing the water flow passages under the plate to act like miniature 'caves' sitting on the flat base of the tank, through which not even quite fine sand will pass. The air release system, of a completely new design, has no airstone and can be removed by turning a simple bayonet fitting. The air-lift tube, that can be sited in alternative positions on each plate, is of large diameter to give a big water flow and, of special interest to marine fishkeepers, will accommodate a Minimatc heater and thus prevent invertebrates suffering damage from

heater burns. A splash deflector helps to reduce the build-up of deposits on the aquarium cover glass and is supplied as part of the standard unit. The filter plates are available in sizes 17in. by 11in. and 23in. by 11in.; it is possible to reduce their size or to join on further plates, such as the 15in. extension with coupling that is also available.

### Filter Capsule

A NEW addition to the Algarde filtration system (Hall Lane, Upminster, Essex) is their Water Treatment Capsule, for filling with the appropriate filter medium and 'plugging in' to the Algarde undergravel filter. Water from the filter passes through the capsule at the rate of some 80 litres (17 gallons)/hour. The capsule can also be used independently of the undergravel filter as an internal filter, fixed to the side of the tank with the suckers provided.



BEST in Show and Best Catfish at the BEDWORTH A & PS Open Show was won by Mr G. Bastin; other trophy winners being: Best livebearer, Mr M. Nightingale; Best barb, Mrs D. Cruickshank; Best characin, Mr & Mrs Sutton; Best cichlid, Mr C. Chamberlain; Best anabantid, Mr & Mrs Crew; Best killifish, GVSR; Best rasbora or danio, Mr T. Cruickshank; Best loach or aov tropical, Mr M. Nightingale; Best coldwater, Mr C. Pratt.

Remainder of results as follows: Male guppy: 1 & 3, Mr K. Payne (N. Warks); 2, Mr R. Marshall (Northampton). Female guppy: 1, Mr E. Sandercock (Goodyers, End); 2, Mr J. Male (Chelmsley); 3, Mr A. Bailey (N. Warks), av. Molly: 1, Mr D. Wilson (MTA); 2, Mr & Mrs Crew

(WADAS): 3. J. & M. (unattached); av platy: 1. Mr M. Nightingale; 2 & 3. Mr K. Payne, av Livebearer: 1, 2 & 3. S.M.I.N. Characin H & H: 1. Mrs M. Nethersall; 2. Mr & Mrs Chamberlain; 3. Mr C. Mitchelson (Goodyera End); av Characin: 1. Mr & Mrs Sutton (TKAG); 2. D. & H.; 3. Mr B. Bailey (N. Works); av Barb: 1. Mrs D. Cruickshank; 2. Mr B. Dewa; 3. B. & F. Hurst (Coventry); Cichlids A & P: 1. Mr & Mrs Redfern; 2. W. & S.; 3. D. & H. Angela: 1. J. & M.; 2. Mr R. Marshall; 3. W. & S. Cichlids M & T: 1. Mr C. Chamberlain; 2. Mr D. Wilson; 3. Mr N. Coleman; av Cichlid: 1. D. & H.; 2. Mrs M. Nethersall; 3. Mr M. Nightingale; Fighter: 1 & 2. J. & M.; 3. Mr N. Coleman; av Anabantid: 1. Mr & Mrs Crew; 2 & 3. Mr & Mrs Chamberlain; Corydoras & Brochis: 1. Mr G. Bastin (MTA); 2 & 3. Mrs M. Nethersall; av Catfish: 1. Mrs M. Nethersall; 2. Mr I. Male; 3. Mr M. Nightingale; av Loach: 1 & 3. Mr R. Phillips; 2. Mr M. Brainbridge (Jones Shipman); Killifish: 1. G.V.S.R. (Chelmsley); 2. B. & F. Hurst; 3. S.M.I.N. Rasbora: 1 & 3. D. & H.; 2. Mr C. Mitchelson; Danio WCMM: 1. Mr T. A. Cruickshank; 2 & 3. Mr B. Hughes.

Egg-layer pairs: 1 & 2. W. & S.; 3. Mr R. Phillips; Pairs livebearer: 1 & 3. S.M.I.N.; 2. Mr M. Butler (Halesowen); Breeders egg-layer: 1. Mr R. Phillips; 2. Mr K. Payne; 3. Mr J. Male; Breeders livebearer: 1. Mr M. Brainbridge; 2. B. & F. Hurst; 3. W. & S.; av Tropical: 1. Mr M. Nightingale; 2. Mr Mahoney (TKAG); 3. Mr Fuller (Luton); Singlelet goldfish: 1 & 3. Mr T. Salisbury (Bedworth); 2. Mr & Mrs Sutton; Twintail goldfish: 1. Mr Night (Jones & Shipman); 2. Mr Taylor (Coventry); 3. Mr C. Pratt; av Coldwater pond or river fish: 1. Mr C. Pratt; 2. S.M.I.N.; 3. Mr & Mrs Crew.

RECENT activities of HOUNSLOW & DAS have been well supported, including a coach outing to Brighton to compete in the Brighton and Southern Open Show. Some of the Hounslow members took awards in several classes and these were presented to them by the well-known stage and screen star, Miss Dora Bryan. The Best Fish in Show award was won by a very fine *Ctenopoma kingsleyae* owned by Mrs S. Parrish, treasurer of Hounslow & DAS; the fish is a beautiful specimen and its attainment of this size and its fine condition reflects the care and attention devoted to it by the owner. Mrs Parrish has received Best Fish in Show awards on three previous occasions with this fish. The Society were hosts to a team of West View D. members recently to compete in a general knowledge quiz; a very enjoyable evening was spent for all concerned with West View D, the successful winners. FBAS judge, Mr R. Fox, officiated at the

table show at the last meeting, the classes being plants and 4 in. by 4 in. jars. These small water life scenes are quite a challenge and require a delicate touch and a lot of patience to achieve the impression of an underwater scene in miniature aquatic life. Society meetings are held on alternate Wednesdays at 8.00 p.m., St Stephens Church Hall, Whitton Road, Hounslow. Visitors are always welcome. All enquiries to the secretary, Mr H. Parrish, 18 The Barons, Twickenham, Middlesex.

AT the second Open Show of SCUNTHORPE & DAS the Best Fish in Show award went to Mr G. White of Scunthorpe for a knife fish which gained 81 points. Results:

Guppies: 1. Mr P. Smith (Scunthorpe); Platys: 1. Mr Clayton (Immingham); 2. Mr & Mrs Bradshaw (Sheaf Valley); 3. Mr & Mrs Brett (Retford); Swordtails: 1. Mr & Mrs Tyson (S. Humberside); 2. Mr Clayton; 3. Mr H. Thorpe (Doncaster); Mollies: 1. Mr & Mrs Kennington (S. Humberside); 2. Mr G. R. Allen (S. Humberside); 3. Mr W. E. Neville (Grantham); av Livebearer: 1. Mr & Mrs Feasey (Doncaster); 2. Mr B. Jackson (Doncaster); 3. Mr A. Onslow (Loughborough); Small characins: 1. Mr G. Storrs (Scunthorpe); 2. Mr & Mrs Tyson (S. Humberside); 3. Mr & Mrs Chester (Retford); Large characins: 1. Mr N. Thorpe; 2. Mr & Mrs Bradshaw (Sheaf Valley); 3. Mr & Mrs Feasey; Dwarf cichlids: 1. Mr W. E. Neville; 2. Mr & Mrs Chester; 3. Mr & Mrs Lake; Rift Valley cichlids: 1. Mr J. R. Hughes; 2. Mr & Mrs Bradshaw; 3. Mr & Mrs Brett; Angela: 1. Mr & Mrs Lancaster; 2. Mr K. Goulding (Immingham); 3. Mr H. Thorpe; av Cichlids: 1. Mr & Mrs Bradshaw; 2. Mr G. White; 3. G. & B. Wessell (Scunthorpe); Small barbs: 1. Mr & Mrs Bradshaw; 2. Mr & Mrs Lake; 3. Mr & Mrs Tyson; Large barbs: 1. Mr & Mrs Tyson; 2 & 3. Mr W. E. Neville.

Corydoras: 1. Mr & Mrs Lake; 2. Mr & Mrs Campbell (Scunthorpe); 3. Mr A. Hodgson (Grimsby & Cleethorpe); Naked catfish: 1. Mr H. Thorpe; 2. Mr & Mrs P. Berry (Scunthorpe); 3. Mr & Mrs Calam (Lincoln); av Catfish: 1. M. G. White; 2. Mr & Mrs Burr; 3. Mr & Mrs Kennington; Top & switch killifish: 1. Mr & Mrs Morrissey (Immingham); 2. Mr G. White; 3. Mr & Mrs Brett; Bottom-spawning killifish: 1. Mr G. White; 2. Mr & Mrs Chester; 3. Mr & Mrs Brett; Small anabantids: 1 & 2. Mr Clayton; 3. Mr & Mrs Lake; Single colour fighters: 1 & 3. Mr & Mrs Chester; 2. Mr & Mrs K. Berry; Multi-colour fighters: 1. Mr & Mrs Davey; av Anabantids: 1 & 2. Mr & Mrs Burr; 3. Mr & Mrs Feasey; Loaches: 1. Mr & Mrs Calam (Lincoln); 2. W. & D. Jordan (S. Humberside); 3. Mr M. Tynne (Scunthorpe); Sharks & foxes: 1. Master S. Neville (Grantham); 2. Mr & Mrs Brett; 3. Mr M. Woods; Rasbora: 1 & 3. Mr A. Onslow (Loughborough); 2. Mr & Mrs Waits; Danios & minnows: 1 & 2. Mr N. Kershaw (Grimsby & Cleethorpe); 3. Master

S. White (Retford); av Tropical up to 8": 1. Master G. R. Allen; 2. Mr & Mrs Feasey; 3. Mr & Mrs Corringham; av Tropical over 8": 1. Mr G. White; 2. Mr & Mrs Burr; 3. Miss K. Feasey.

Coldwater: 1. Mr & Mrs Feasey; 2 & 3. Mr G. Storrs (Scunthorpe); Pairs livebearers: 1. Mr B. Jackson; 2. Mr N. Kershaw; 3. Mr & Mrs Davey; Pairs egg-layers: 1. Mr & Mrs Tyson; 2. Master S. White (Retford); 3. Mr & Mrs Feasey; Breeders livebearers 1-10: 1. Mr B. Jackson; Breeders livebearers 11-20: 1. Mr & Mrs Feasey; 2. Mr H. Thorpe; Breeders egg-layers 1-10: 1. Mr Breakwell (Thorne); 2. Mr H. Thorpe; 3. Mr & Mrs Lancashire (Doncaster); Breeder egg-layers 11-20: 1. Mr & Mrs Bradshaw; Novice livebearer: 1. Mr T. Tidwell; 2. Mr Moody (Scunthorpe Museum); 3. Mr A. Gibbs; Novice egg-layer: 1. Mr N. F. Kershaw (Grimsby & Cleethorpe); 2. Mr Moody; 3. Mr & Mrs Calam; Female livebearer: 1. Mr & Mrs Feasey; 2. Mr B. Jackson; 3. Mr S. Harrison; Female egg-layer: 1. Mr B. Jackson; 2. Mr & Mrs Chester; 3. Mr & Mrs Feasey.

THE GOLDFISH SOCIETY OF GREAT BRITAIN held its 27th Open Show at the Sutton Adult Centre where there was a record number of entries and a record number of friends and members who attended from all parts of the British Isles. The 232 fish put up for competition were judged by Mr A. Lawman, Mr D. Dudley, Mr G. King, Mr R. King, Mr L. Emery, Mr W. Leach, Mr D. Easingwood and a member from Scotland, Mr J. Wilson. While the fish were being judged, Mr R. Whittington gave a lecture about the Jikin, a Japanese goldfish which is really rare in the western world. Mr H. Berger then gave a talk on how to breed and raise redcap orandas and chocolate orandas and spoke about the problems of showing these fish. Finally, Mr A. Thomma, the well-known American goldfish keeper, spoke about goldfish genetics. An auction followed where only top quality fish were auctioned, and judging by the amount of current-year fishes which were auctioned off, 1975 must surely be a 'vintage' year for goldfish. Owing to the high quality of the fish the eight judges spent some 30 minutes deciding the Best Fish in Show. They all agreed on a Bristol-type shubunkin belonging to Mr G. King, who also won a gold pin. The trophies were presented by Mr A. Thomma, and the results are as follows:

Bristol shubunkin: 1. Mr G. King; 2. Mr J. E. Roberts; 3. Mr G. Bell.

Ventail: 1, Mr. D. E. King; 2, Mr. J. E. Roberts; 3, Mr. T. Halpin. Globe eye: 1 & 3, Mr. W. G. Cook; 2, Miss D. Morris. Bramblehead: 1, A. Lawman; 2, Mr. R. Whittington; 3, Mr. D. Seymour. Pearlscale: 1 & 2, Mr. M. C. Cluse; 3, Mr. W. G. Cook. Celestial: 1, Mr. H. Berger. Poon-pon: 1 & 2, Miss Berger; 3, Mr. A. Wright. Bubble-eye: 1, 2 & 3, Mr. K. C. Speaks. Common goldfish: 1, Mr. R. Cowley; 2, Mr. A. C. Law; 3, Mr. M. Meadows. London shubunkin: 1, 2 & 3, Mr. W. Leach. Comet: 1, Mr. G. Marshall; 2, Mr. A. Marshall; 3, Miss D. Morris. Fantail: 1, Mr. A. Marshall; 2, Mr. D. Seymour; 3, Mr. S. Herring. Oranda: 1, Mr. A. Lawman; 2 & 3, Mr. J. E. Roberts. Broadtail moor: 1, Mr. A. Marshall; 2, Mr. H. Berger; 3, Mr. J. Kingsland.

Results of breeders: Bristol shubunkins: 1 & 2, Mr. J. E. Roberts; 3, Mr. D. Cole. Ventrals: 1, 2 & 3, Mr. J. E. Roberts. Brambleheads: 1, Mr. D. Seymour; 2, Mr. J. E. Parker. Pearlscales: 1, Mr. A. Lesurt; 2 & 3, Mr. M. D. Cluse. Celestials: 1, Mr. J. Linale. Bubble-eyes: 1, Miss D. Morris. London shubunkins: 1 & 2, Mrs. P. Whittington; 3, Mr. W. Leach. Orandas: 1, 2 & 3, Mr. J. McNamara. Broadtail moors: 1 & 2, Mr. J. Kingsland; 3, Miss D. Morris. Novice class: 1, Mr. J. Amos; 2, Mr. A. Green; 3, Mr. R. Rudland.

**MID-SUSSEX AS** are holding their Buffet and Presentation Dance on 14th February at the

Queen's Hall, Cuckfield, and members of the public are warmly invited to attend. Tickets at £1.75 are available from Mrs S. Corbin (phone Burgess Hill 41632) or contact secretary Mr B. Slade, Sandown, Bolney Road, Anstye, Haywards Heath, Sussex. At their October meeting Mr J. Burtles gave a most interesting talk on loaches and botias. 160 fish were benched for the table show judged by Mr C. West, who commented on the high quality of the entries, especially the Novices class. Winners were: Novices, Mr R. Stanger; plants, Mr D. Soper; breeders livebearers, Mr D. Soper; breeders egg-layers, Mr D. Soper; Fish of the Year, Mr & Mrs Houghton.

**SOUTH SHIELDS AS** held the second leg of their inter-club competition in October, the results of which are as follows:

Small barbs: 1, Mr & Mrs Risbrider (SSAS); 2, Mr I. Goodrick (Bimbi); 3, Mr W. Davidson (Killingworth). Char-

cins small: 1, Mr A. Howgate (Bimbi); 2, Mr G. Liddle (Bimbi); 3, Mr P. Wright (SSAS). Characins large: 1 & 2, Mr & Mrs Laydon (SSAS); 3, Mr A. King (SSAS). Cichlids large: 1, Mr G. Liddle; 2, Mr & Mrs Risbrider; 3, Mr C. Enright (SSAS). Cichlids small: 1, Mr H. Nicod (Bimbi). Fighters: 1 & 2, Mr B. Foster (Bimbi). Labyrinth aov: 1, Mr J. Rogan (Killingworth); 2, Mr B. Foster; 3, Mr H. Ruffell (SSAS). ELTC: 1, Mr A. Howgate (Bimbi); 2, Mr & Mrs Risbrider; 3, Mr B. Foster. Tropical catfish: 1, Mr & Mrs Risbrider; 2, Mr D. Compton. Corydoras & brochis: 1, Mr & Mrs G. Wright (SSAS); 2, Mr M. Ruffell; 3, Mr G. Liddle. Rasbora: 1, 2 & 3, Mr & Mrs Risbrider. Dania & White cloud: 1, Mr P. Wright; 2, Mr & Mrs G. Wright; 3, Mr G. King (SSAS). Loach: 1, Mr D. Turnbull (Bimbi); 2, Mr G. Liddle; 3, Mr P. Wright. adv Tropical egg-layer: 1, Mr G. Archdale (Bimbi); 2, Mr & Mrs G. Wright; 3, Mr I. Goodrick. Pairs egg-layers: 1, Mr & Mrs G. Wright; 2, Mr A. Howgate (Bimbi); 3, Mr I. Goodrick. Pairs livebearers: 1, Mr & Mrs Laydon; 2, Mr J. Rogan (Killingworth). Guppy male: 1, Mr P. Wright; 2, Mr T. Dixon-Cave. Swordtail: 1, Mr D. Turnbull (Bimbi); 2, Mr H. Nicod; 3, Mr & Mrs Smith (Killingworth). Platy: 1, Mr T. Dixon-Cave; 2, Mr P. Wright; 3, Mr D. Turnbull. Molly: 1 & 2, Miss L. Smith. Livebearer aov: 1, Mr & Mrs Laydon; 2, Mr & Mrs Renton; 3, Mr P. Wright. Coldwater av: 1, 2 & 3, Mr & Mrs Ruffell. Breeders egg-layer & live: 1, Mr T. Dixon-Cave; 2, Mr P. Wright; 3, Mr & Mrs G. Wright. Furnished jars: 1, Mr & Mrs Risbrider.

the table show and Mr B. Higginson the tropical breeders trophy.

... **CHANGE** of venue for **GLOUCESTER AS**. For the January meeting the Society move to the Chequers Bridge Leisure Centre, Painswick Road, Gloucester. Also meetings will be held on the first Tuesday of month instead of first Wednesday as at present. Members have enjoyed an informative lecture by Mr N. Binding on the difficulties in classifying and judging livebearers. At this table show, Mr T. Jones entered no less than nine fish and took 2nd, 3rd and 4th places but was beaten into first place by Mr G. Perkins.

... **THREE** new members were welcomed to the October meeting of **HORSFORTH & DAS** and saw a slide show lent by Mr R. Hampson, operated by Mr M. Barker with notes read by Mr P. Smith. The slides were on livebearers, specifically swordtails, and if the odd slide came through upside down, it only added to the enjoyment.

## In Brief...

... **AT** the **BRACKNELL AS** AGM, Mr L. Jordan, a founder member who is recovering from a severe illness, was made president and his wife Natalie was presented with a certificate of honorary life membership. The club reported a varied programme throughout the year with FBAS speakers and tape and slide shows. The joint show held with High Wycombe, Reading, Basingstoke and Didcot had been successful as had been the tea house and market stall fund-raising ventures.

... **NEW FOREST AS** had a good attendance at their October meeting with five prospective new members. The main feature was an interesting colour slide lecture 'Tale of a Fish' — from its capture in a foreign land to its arrival in the pet shop. Mr R. Travers won the comet tailed goldfish class in

## Dates for Your

### Diary

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

### 1976

4th April. **NELSON AS** Open Show, The Civic Centre, Stanley Street, Nelson, Lancs. Details: Mr J. Stokes, 3 Beckenham Court, Burnley.

10th April. **YATE & DAS** 10th Open Show, King Edmunds School, Stanshawes, Yate, nr. Bristol. Schedules (1st March): Mr C. Stickland, 20 Burgage Close, Chipping Sodbury, nr. Bristol.

22nd May. **MERTHYR AS** Open Show. Details: Mr D. Burgess, 4 Holly Way, Gurns Estate, Merthyr Tydfil.

15th August. **STROUD AS** Open Show. Subscription Rooms, Stroud. Schedules: Mr J. Cole, 13 The Hill, Randwick, Stroud, Glos. Randwick, Stroud, Glos. (Stroud 4504).

28th August. **THIRD WELSH NATIONAL OPEN SHOW** and Exhibition of Tropical, Marine and Coldwater Fish, Sophia Garden's Pavilion, Cardiff. Details: Mr C. Turner, 146 Arran Street, Roath, Cardiff. Cardiff 498982.

12th September. **HARLOW AS** Open Show.

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### BOOKS

**FBAS Show Rules, Constitution & Technical Information Booklet No. 5**, 25p each post free. **FBAS National Show Fish Sizes & Technical Information Booklet No. 6**, 55p each post free. **Booklet Sets Nos. 1-6**, £1.50 post free. — P.F. Publications, 554 Garratt Lane, London, SW17 0NY.

**GOLDFISH SOCIETY OF GREAT BRITAIN STANDARDS BOOK.** Revised (1972) 40-page publication. Standards for 13 approved fancy goldfish varieties, illustrated in line. 40p post paid. P.F. Publications, 554 Garratt Lane, London, SW17 0NY.

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My mates fell about laughing at the thought. I'd just shown them this tube of TROPHIX silicone rubber aquarium sealant I'd bought.

Let's see . . . it must be seven or eight years now . . . that's right, we'd been re-decorating. Alice played hell about my fish tank even after I'd spent hours trying to cover up the rust for her! She still said it would have to go. Didn't fit in! But I wasn't giving in without a fight, so I got this TROPHIX to have a go at making my own all-glass tank! When she saw that, she thought I was a candidate for the nut-house instead of the fish-house although she thought that was half-way there anyway!

Well, I followed the instructions and found it was easy! Bit of care and there it was.

Alice really flipped for that tank! Soon as it cured she wanted to get the fish in, but I took it into the garden to test it. Made sure it was level, of course. Well, you do with all tanks, don't you? When I looked round I nearly had a fit! We'd got a perishing audience! Bill, Bert and half the fish club were watching. Alice had been opening her mouth again.

The rotten lot cheered when it didn't look like falling apart when it was full. Bill just stood looking. "I give it a week," he said.

I left it a fortnight. Truth was, I daren't move it! We'd all tried new tanks for leaks, found them all right and had trouble when we filled them again! Putty pushing in and not letting out again, but this TROPHIX tank was all right! We kept emptying and filling it to test. I suppose it's because TROPHIX is rubbery and stretchy as the advert says.

Set up it looked a real picture. Light and airy . . . "Go on, Clever-Dick, laugh, we know fish swim in water," Bert had had to put in his two-pennorth of course . . . but that was how it sort of looked.

Upshot was, we made stacks of all-glass tanks. Got rid of all the crumbly old fish house ones and all the fish club set to like a lot of eager beavers — we even made our Show tanks with the TROPHIX!

My brother-in-law — the snooty one — liked it so much he had to have one as well and sent Alice for the TROPHIX silicone rubber aquarium sealant. She came back in a real tizzy. They'd tried to fob her off with some other stuff but she'd stuck to her guns and found another shop!

She knows, does our Alice, that TROPHIX is easy to squeeze from the tube without running all over. No dripping down corners either, it stays where it's put! And another thing — it's clear, not milky like some we've seen.

Still, we had to get rid of that first tank, you know — well, we've got two four-footers on a stand instead! Two beauts!

But it's not gone to waste, our first all glass effort, oh no! My starchy, stuck-up, house-proud Aunt wanted a tank for Christmas. After Alice gave our number one a good clean, Aunt was overjoyed with it — gave us a smashing Christmas box — she thinks it's brand new! We've not stopped laughing yet. We know it looks new, but that first all-glass tank of ours is at least 7 years old!

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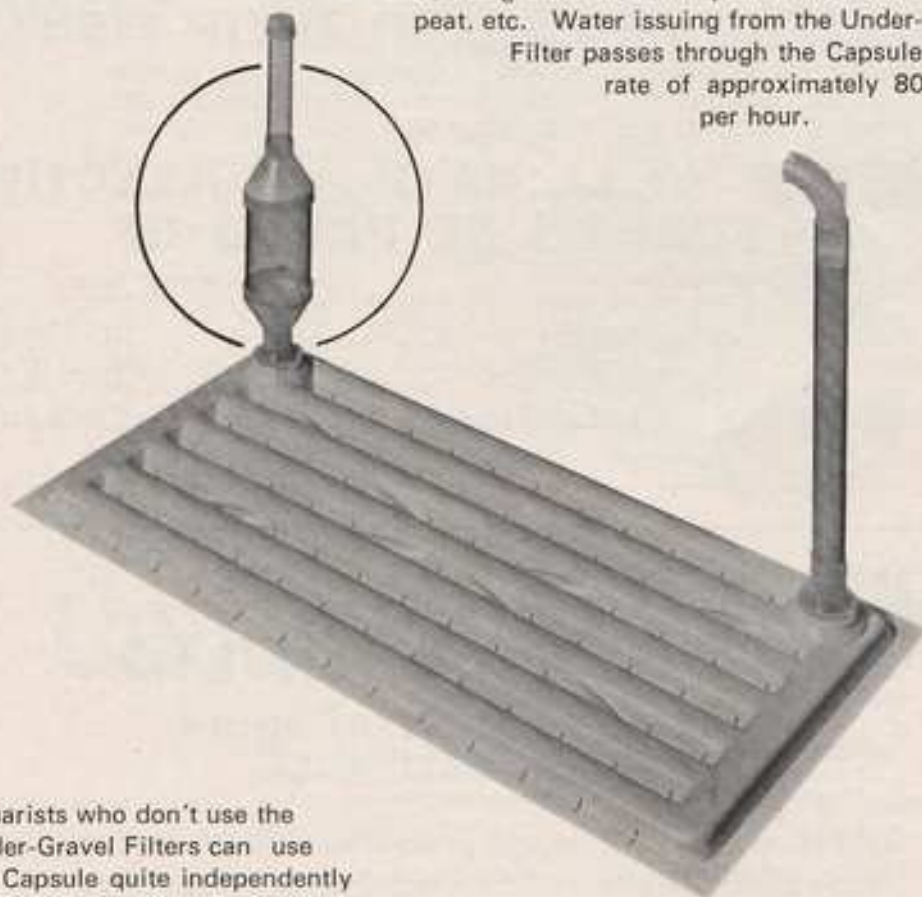
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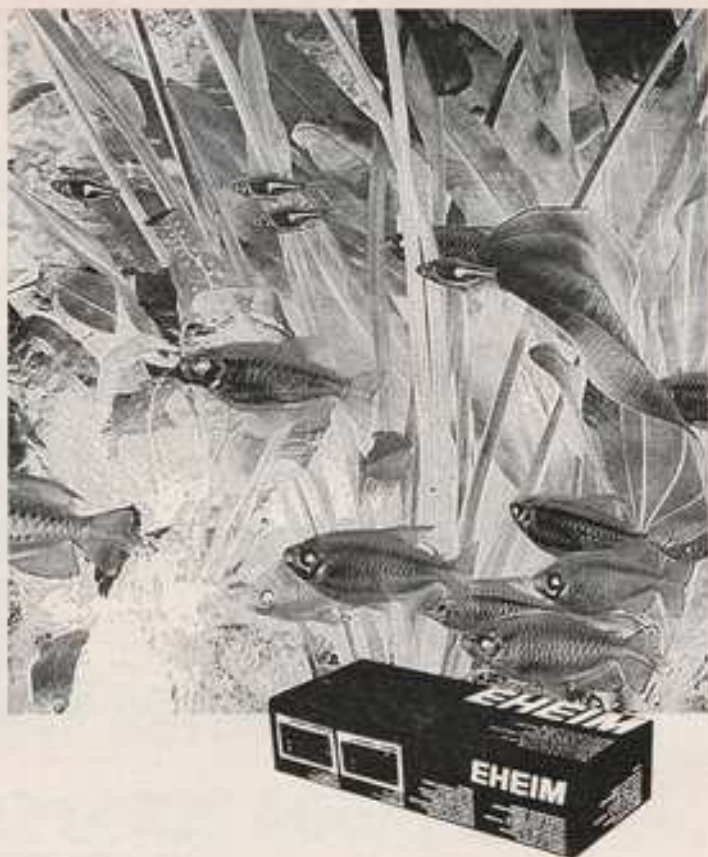
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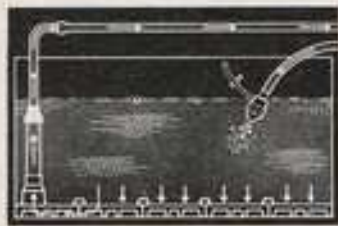
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