

JULY 1972

15p

Pet Fish

monthly

The PRACTICAL FISHKEEPING MAGAZINE



Contents include:

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The Sea Butterfly
Tropical Marine Project
Water Garden in July

Buying Stock for the Pond
Water Hyssop
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Comments and Quotes

- Cost of feeding aquarium fishes
- Mystery of cichlids from African lake

Fish Food Prices

IN a newspaper article on the price of pet foods the cost of fish foods recently came under fire. 'Are you feeding your goldfish on "gold dust"?' asked the writer. One German food works out at £1.52 per lb, another U.K. one at £1.76 per lb, ran the article. These figures were based on small carton prices, and both foods are top-quality flake foods.

Is all this as shocking as it sounds? We think not, and if the writer of the piece had done the homework set it would have been realised what utter nonsense it was additionally to recommend to fishkeepers the purchase of another proprietary brand just because its carton price worked out at 22p per lb for its contents.

Fish foods formulated and prepared with the needs of aquarium fishes (and their owner) seriously considered are undoubtedly costly. Powdered biscuit waste with a little fish meal added certainly costs a lot less to market. It certainly does not make a nutritious food nor does it serve the needs of the great majority of people who keep fishes, who want their fish tanks to stay clean and unpolluted with the minimum of effort. And effort is what it all comes down to. Of course you can feed fishes more cheaply and just as well without ever buying a drum of any proprietary food. You will be put to much more work and bother, but if your time is free and you enjoy making your own foods and culturing live foods you do not count these as costs. Those who kept aquaria in the hobby's early days certainly played it this way and it was all part

of the fun. Today most people, if only for some of the time, are grateful for the convenience and reliability of modern proprietary foods and realise that these are advantages that have to be paid for.

More African Cichlids

AQUARISTS are fast becoming aware of the interesting cichlids that are being imported from the lakes of Africa. It is possible that more are to come. Malawi cichlids, Tanganyika cichlids—these are from the really big lakes. In comparison with these waters the lake known as Barombi Mbo in the north-west Cameroon is just a pond, but it is one and a half miles across and has no less than 12 new species of mouth-brooding cichlids. What is interesting and mysterious about these fishes at this site is not merely that they are unique to Barombi Mbo—after all Lake Malawi and Lake Tanganyika also both have completely individual cichlid populations, but also how they appeared where they are, since Barombi Mbo is in fact an isolated crater at the top of a volcanic hill. British ichthyologists Dr E. Trewavas, Dr J. Green and Dr S. Corbet have been studying the cichlids of this lake and they suggest that originally the water became colonised by a mere two to four species and that 'speciation' to the present-day 12 different types has taken place during hundreds of thousands of years. What no one has explained is what in such a small lake caused the original species to evolve into the forms of distinct appearance and habits that are now seen.



PET FISH
MONTHLY

LETTERS

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

Angry Breeders

AS spokesman for several very angry top breeders who, with myself, exhibited their fishes at an open show in Cheshire in May, I would like to report on some quite extraordinary judging that took place in connection with the Breeders Egglayers class 27, section Q. There were about 14 or 16 entries that included angels, cichlids, danios, characins, catfish and rasboras. I myself had three good entries (as I think all who saw them at the show would agree) consisting of emperor tetras, neons and cardinal tetras. There were at least two other good emperor tetra entries, an excellent entry of harlequins and one entry of six 2-2½ in. brown discus in perfect condition. All the entries except for perhaps two were well up to the size required according to their date of birth.

The shock result, that made a wave of gasps run round the exhibitors and spectators alike, was that the first award went to an entry of zebra fish—and shock number two was that the entry was also made the subject of a Special Award. I think the judges must have been aware of the confusion all around them, but nothing was said then in respect for the rule that the judges' word is final, so I am putting it in writing now.

All the pointing for 'difficulty of breeding' was just thrown to the winds. The skills of top breeders were triumphed over by an entry of the easiest egg-layer of them all. Apparently, in the future, any novice breeder who has success with his first charges such as zebbras or mountain minnows might take this major award, if this sort of judging is not stamped out. We feel sure that all experienced breeders and exhibitors throughout the country will agree with us. If the difficult breeders like neons, cardinals, harlequins, discus etc. are to come second to the common zebra fish, then all we have to say is that a breeder's skill is no longer required and that there is no achievement in winning the breeder's egglayers prize.

Mr. Hanley, Stoke-on-Trent

J. LEE

Fish Cleaners Ltd.

THE letter 'Shark-cleaning Services' from Mr B. I. Evans (PFM, May 1972) prompted me to write this letter about what could perhaps be termed 'Plecostomus Cleaning Services'. My 4 in. *Anostomus anostomus* and a similar sized *Pleco-*

stomus cohabit the only cave in my community tank, and I have on several occasions witnessed the following ritual.

The pleco lies on a flat rock and, resting on its pelvis and caudal, arches its back and holds its fins out erect. The *Anostomus* approaches from the front and appears to nibble the inside of the pleco's 'sucker mouth'. The pleco then draws back what I can only describe as its lips, the skin surrounding the front of the sucker, and exposes the white bony ring which surrounds its mouth. The *Anostomus* nibbles at this with some relish and the pleco, giving signs of pleasure, further arches his back to enable the *Anostomus* to reach right under. The whole performance takes 2-3 minutes.

The only explanation I can offer is that in its grubbing on the bottom and working over plants, algae and mulm must get behind the 'lips' and irritate the pleco. The *Anostomus*, which is supposed to be partially vegetarian, is apparently satisfying both of them. Can any aquarist enlighten me further, or has anyone had similar experiences involving these two species?

Willesden Green, London, N.W.2 R. S. THOMPSON

Resilient 'Cat'

NEVER give up a *Clarias* catfish for dead! Imagine my horror one Sunday morning on being awakened by my son (who usually lights the tanks up) with the news that our *Clarias* had disappeared. I found him in the cabinet dead (or so I thought). Scooping him into a net I put him in the dustbin—in sorrow, as I had grown him on to 10 inches.

On going to the dustbin some half an hour later I saw him moving about. Once more into the net he went, although covered in ash and red raw in parts. I washed off the ash in salt water as best I could and then popped him back into his tank. In a day or so his 'feelers' fell off, and he looked a sorry sight. Now, 3 weeks later, new 'feelers' have started to grow and he seems to be his normal self.

Nelson, Lancs.

A. BALDWIN

More Letters on page 109

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LETTERS

continued from page 102

Hobbyists Alone can Raise Standards

WITH reference to the comments by Mr F. Mulla from the Merseyside A.S. journal (PFM, May, 'In Brief'), I would agree with him wholeheartedly that entry fees have not risen much in the last few years and that an organising society is glad of the revenue, but they cannot be held responsible for the standard of entries.

A price increase would not raise the standard because the regular 'pot-hunters' would still be prepared to pay for unattractive fish to trot round the show circuit. In fact, I am often sorely tempted to suggest that the winner at an open show should be decided by 'weighing the catch' as in angling competitions, since it would appear that more often than not it is the largest fish that wins.

No, Mr Mulla, we are talking about 'supply and demand'. If the fish we buy are wild stock we have to take them as they come, and if they are bred commercially then quality has to be sacrificed for quantity to enable profits to be made. The only person who can raise the standard is the hobbyist who is prepared to work and develop better strains of fishes.

Bury & D.A.S.

DANIEL GLEN

SO Mr Fred Mulla wants fees for fish entries to be increased (PFM, May). Well, of the shows I have visited this year the average entry fee has been 10p. This has not deterred people from exhibiting, but speaking for myself I feel that this price is rather high for the following reasons.

(a) Exhibitors travel many miles to open shows, to support the club and to enjoy the day out. And it's hard, after paying out heavy expenses to get

there in the first place, to have to fork out high entry fees.

(b) A more important point is that juniors, who after all are the adult exhibitors of the future, are penalised the same as adults.

(c) As for keeping unworthy fishes off the bench, who are we to tell exhibitors which fish are worthy and which unworthy? After all, it's only by going to shows that we find this out.

(d) As for making the judges' task easier, well, after all, that's what they are there for—and quite frankly I have never heard them complain; and if there are too many fishes the answer is easy—get more judges.

My own club has increased its entry fees this year; in fact it will be 5p. However, as a member of the Committee, I am not mercenary; why penalise the exhibitor? After all, without him or her, where would our open shows be?

If higher fees will mean quality not quantity, then I am afraid a lot of the excitement will be lost—and a lot of the fun and pleasure we get from what we think are our best fish whether they be unworthy or worthy.

Secretary, Rhondda A.S.

DICK RICHARDS

Snail Block

I AM passing on the following tip in case it is of help to other aquarists. We nearly gave up keeping fish recently; we had so many snails in our tank and nothing that we tried cleared them. We spent hours catching them but it made no difference. Then, finding ourselves without our usual flake fish food over the holiday weekend, with the shops closed, we put in a 'Week-end Fish Food Block' and within seconds it was black with snails. We pulled it out and repeated the process a few times. Wonder of wonders, no snails to be seen! If only we'd known before. The tanks are back in favour now.

Castle Ridge, Stafford

MRS J. DAVIS

Meetings and Changes of Officers

BISHOPS CLEEVE A.S. Chairman, Mr N. Bending; treasurer, Mr F. Scriver; secretary, Mr R. Inwood; show secretary, Mrs M. Scriver.

BLACKPOOL & FYLDE A.S. New secretary: Mr Kevin B. Walsh (24 Harold Avenue, Blackpool).

COLWYN RAY & DAS. Chairman, Mr S. R. Ball; vice-chairman and show secretary, Mr M. Prodzian; secretary, Mr H. Vosse (21 Parkers Avenue, Rhoson-Sea, Denbighshire); treasurer, Mr J. K. Mitchell.

DERBY REGENT A.S. President, Mr H. Trench; vice-presidents, Councilors G. Green, Mayor of Derby; Councilor J. J. Cartt; Deputy Mayor, Chairman, Mr E. Wilson; vice-chairman, Mr C. Cooper; treasurer, Mr T. Jenkins; secretary, Mr T.

Hiland; assistant, Mrs Nola Robertson; assistant show secretary, Mr T. Bullock; Member, Mr D. Shaw; assistant, Mr D. Robertson; editor, Mr B. Hollow; Press, Mr B. Wood.

HORSFORTH A.S. New meeting night. Now on first Tuesday of month.

HUDDERSFIELD TFS. New address. Secretary, Mr G. Walker (18 Rawnsley Road, - Sablonline Nook, Huddersfield, Yorks.).

NEW FOREST A.S. Chairman, Mr A. Williams; vice-chairman, Mr C. Knapp; secretary, Mr R. Therrers; treasurer, Mr B. Higginson; show secretary, Mr D. Lane; assistant, Mr D. Harding; F.R.G., Mr E. Norton.

SCARBOROUGH & DAS. Chairman,

Mr R. Ingersoll; secretary, Mrs D. Ingersoll (13 Colwell Road, Scarborough); show secretary, Mr R. Loughton; treasurer, Mr J. Dodds. Meetings: first and third Wednesday of month, 8 p.m., Talbot Hotel, Queen Street, Scarborough. All visitors welcome.

SLOUGH & DAS. Chairman, Mr E. J. Honey; vice-chairman, Mr J. Jordan; secretary, Mr E. Knight; treasurer, Mr B. Wilson; show secretary, Mr B. Knight. Meetings: third Wednesday in month, 8 p.m., Friends Meeting House, Bagstone Road, Slough.

YATE & DAS. Meetings: first Monday of month, 7.45 p.m., The Half Moon Inn, Coalpit Heath, nr. Bristol. New members welcome.

YORK & DAS. New show secretary: Mr P. Ross (20 Don Avenue, Dringhouses, Yorks.).

The Sea Butterfly

*Blennius
ocellaris* L.



By
KARL PROBST

Photograph by
the author

AMONGST the blennies the sea butterfly stands out not only because of its eye-catching appearance but even more because its mode of existence distinguishes it from all the rest of its genus. It is one of the few European representatives that Linnaeus determined indisputably and which served as the genotype for the whole genus *Blennius* in zoological classification. This is why our sea butterfly is almost always mentioned as *Blennius* sp., whilst at the same time being classified as 'long-known'. It is this classification that has led many readers to the erroneous assumption that these fish are therefore found in abundance in the sea. Linnaeus also listed it under the name *B. papilio* (synonym) and is certainly the earliest author to adopt the name sea 'butterfly'.

The analogy of the name arises from the fish's unusually high dorsal with its elongated, curved first ray and the characteristic dorsal 'eye patch' marking. It also has large pectorals that can reach back as far as the anal and long, fringed 'feelers' on its head that resemble a butterfly's antennae.

'Butterfly'-like it may be, but it would certainly have to be a night-butterfly for it lives exclusively in dark and gloomy waters. 'Deep-water blenny' or 'midnight blenny' might be more fitting names and indeed its eye-patch marking reminds me of the eclipse of the moon with pale moonlight gleaming from behind the bold spot. The purpose

of this patch has yet to be explained, for little enough has been written about the biology of our 'long-known' sea butterfly, let alone descriptions of its behaviour. I suppose that the animals can pair up more easily by means of this bright patch, and it can be assumed that this prominent marking is an identification feature in the poorly lighted conditions of deep water. Or it could be a defensive marking to frighten enemies. High-standing dorsal fins and 'eye-patches' would certainly serve to ward off different species of shallow-water fishes.

I need not give a detailed description of these striking fish for the photograph shows their characteristic appearance. The body in this species is particularly deep. The large head is deeply furrowed on top and carries a white V-shaped marking.

B. ocellaris is found in the Mediterranean and the east Atlantic from west Africa to Britain. Its native habitat is the edge of the continental plateaux and shelves 100-200 metres deep. It can penetrate downwards to 500 metres in the upper regions of the Continental Slope, on the rocky ground of the bathylittoral zone, although in the Continental Shelf zone it lives on a sandy, muddy, soft bottom. It is rare to find it above a depth of 50 metres, and then this would probably only be in the breeding season. So the sea butterfly mostly inhabits a soft-bottomed terrain, and this again is

in contrast to the rest of its genus, which live almost exclusively amongst rocks and stones. Because of the nature of the sea floor at the depths at which it prefers to live, *B. ocellaris* moves into the empty mollusc shells that lie around on the soft bottom.

I am laying particular stress on this point of the depth at which this species lives because in past literature the incorrect information is given that this fish, like the rest of its family, always resides in the shore region amongst the rocks. Unfortunately a good few subsequent authors have repeated the error. Just once, in Knauer's *FISHES* (1961), was the error corrected. The sea butterfly is only seldom found by divers, and it is not surprising that one has not heard of underwater observations of this fish. It has only rarely been caught for aquarium purposes. Out of 100 public aquaria it can be found regularly in, at best, about three—in Monaco, Plymouth and Naples. And then, when visiting the aquarium in Naples, I found that although *B. ocellaris* was named it was *B. gattorugine* that were rushing around the tank.

I first succeeded in finding a few sea butterflies for my aquarium after a year's search. It was on the Croatian Adriatic coast that I obtained three after a 24-hour drag-net sweep between Crikvenica and Senj from a depth of 50 metres. And I also learnt, while working on a zoological trip in Rovinj (Istra), that *B. ocellaris* were still dredged there but very rarely. Specimens were obtained from a depth of 300 metres but were dead on reaching the surface. Great care has to be taken when specimens are brought up from deep water as if it is done too quickly a condition like the 'bends' develops in the fishes.

Regarding the occurrence of these fish on the southern coast of England one finds quite contradictory statements in the older literature. It seems

to me that *B. ocellaris* comes from above the 30 metres depth here. From statements made by Dr D. P. Wilson of Plymouth it would appear that the species may be more numerous in this area at breeding time because of the numerous milk-bottles thrown out from passing ships; *B. ocellaris* like to use these for spawning. The bottles are only brought up by dredging operations, but many are found to contain a brood of these little creatures. In spite of the shock received the animals do not attempt to escape and remain in the bottle even when it is put into the aquarium.

At the Plymouth Station these blennies have been kept for 70 years, with successive spawnings. They produce orange-red eggs some 1.2 mm. in size. Garstang succeeded in raising larvae and noted that in their behaviour and high level of development they resembled the larvae of the *Cottus* and corresponded with the same stage as a 5-6-day-old plaice. Around England the spawning time is July, though in the Mediterranean it is around April.

My own sea butterfly behaves itself fairly quietly in the aquarium. It selects a protected spot and from there undertakes the occasional expedition. I indulged it by adding a small stone wall to the tank. Sheltered by this it loves to sit by it with its beautiful sail-fin dorsal held taut and upright most of the time. My blenny breathes deeply, opening and closing that huge mouth rhythmically. *Blennius sanguinolentus* also does this but the latter is quite a shy fish. *B. ocellaris* seems fearless, such as is rarely seen in a fish. Even after being recently caught it shows no nervousness; in the aquarium it does not search around for a hiding place as many other blennies do. Nor have I seen it attack other fishes, although it looks so fierce.

It feeds much like other blennies, though it doesn't seem to have such a good appetite since it often spits crumbs of food out of its mouth again. Surprisingly enough I have seen no great evidence of activity at night though I had expected this with a species originating from the darker depths. If one can get healthy specimens, this is an unusual, not difficult, fish to keep and I can recommend it to any careful mariner.



Read the World Over

PFM gets everywhere, as aquarist Mr T. D. Smith (whose aquatic interests include ownership of north London's Palace in Wonderland) found when he recently made a business trip to the Far East and took this picture on a fish farm in Malaya.

AQUARIUM PLANTS

Water Hyssop

By K. RATAJ



Slow in growth when submerged, *Bacopa monniera* should first be grown on in humid conditions out of water and then transferred to the aquarium when a specimen clump is obtained. The above cluster was only recently transferred to an aquarium as can be seen from the presence of flower buds growing from the axils of the leaves.

Photographs by
RUDOLPH ZUKAL

Flowers of *Bacopa monniera* growing on stems of plants raised out of water. Pale violet in colour, the blooms readily form seeds but only a water-gardener interested in trying out his skill would attempt to raise plants of this species by this method.



6-8 in. (15-20 cm.) high. Unlike *B. amplexicaulis*, its stems are strongly branching.

Leaves are small, 10-20 mm. long and 5-8 mm. wide. Both surfaces are green, without distinct veins; leaves are much thicker and not undulate like those of *B. amplexicaulis*.

This species flowers only above water, the flowers growing on short stalks from the leaf axil. The pale violet flowers produce seeds readily, but since the plant is readily propagated vegetatively by rooting the stems it does not pay to cultivate it from the seed. The roots can develop in the

places of the insertion of the leaves, which are always opposite (pairs of leaves facing each other).

Underwater growth of *B. monniera* is relatively slow and as it is not prostrate it does not spread broadly, but forms decorative small shrubs. It is advisable to propagate this plant emergently (out of water) in the paludarium or terrarium and only then, when it is growing well, transfer the developed, branched plants to underwater conditions.

Bacopa monniera is light-loving, and does not withstand poorly lighted positions as does *B. amplexicaulis*.

A Northern Light: Mr IAN WOOD

INTRODUCING the New Secretary of the FEDERATION of NORTHERN AQUARIUM SOCIETIES

WHEN I heard that Ian Wood had become the new secretary to the Federation of Northern Aquarium Societies my first reaction was one of misgiving. You see—we are both members of the same Society and knowing him as I do I envisaged him throwing himself so wholeheartedly into the administrative side of the hobby that he would have little time left to give the considerable amount of practical assistance he normally contributes to our Society. He has reassured me, however, that this will not be the case.

Ian never does things by halves—being in his late twenties he has youth on his side—and in addition to being vice-chairman of the Bury and District Aquarists' Society he is also leader of the Photography Section. He seems to have mastered the many difficulties that can be encountered when attempting to photograph fishes in glass tanks and has amassed a huge library of coloured slides from which he has composed innumerable lectures. These have proved very popular and in the area embracing Lancashire, Cheshire and the West Riding he is in great demand as a lecturer at society meetings; as he is also an FNAS A class judge he invariably has a full diary of engagements.

He has very decided views on what the aims of society members

By F. CAMPBELL

should be and continually stresses that the breeding of fishes should be their main objective. Although not averse to the show bench as a means of popularising the hobby, he visualises the day when classes for breeders and pairs will dominate the show schedules and classes for single fishes will be purely incidental.

A practical man, he has no time for theories and believes in finding things out for himself, a course which has given him a comprehensive knowledge of breeding techniques and the reproductive procedures adopted by the various groups of fishes. Whether they be egg-scatterers, bubble-nesters, soil-breeders, mouth-breeders or livebearers he has persevered with them all until ultimate success has been achieved. The results of each programme he undertakes are meticulously recorded on slides, from the mating behaviour of the parents, through the hatching, and the stage by stage development of the fry.

Judging engagements now leave him little opportunity for exhibiting, particularly as he was invited to officiate at last year's British Aquarists' Festival, but in the past his entries in this great northern event were prepared with one object in view—the winning of the top award

in whatever he was concentrating on. A few years ago, for instance, he was feeling concerned at the waning popularity of the *coriatus* platy and the lack of show-worthy specimens, so he set to work and after some 3 years of carefully selected matings he produced a breeder's team which carried off the FNAS Challenge Trophy for Breeders (Livebearers)—at the B.A.F. of 1969. The same year he took third prize in a Furnished Aquaria class, a commendable performance but not good enough for Ian: the following year he tried again and won the Walter Smith Coronation Shield for the best Individual Furnished Aquarium (Tropical).

In comparison with his achievements his fish house is modest. It is a converted utility room at the rear of his built-on garage and measures some 7 ft. by 6 ft. The tank lighting is completely artificial yet he contrives to present a varied selection of profusely growing plants. This no doubt stems from the experience gained in the setting up of furnished aquaria and the knowledge of what types will thrive in a windowless fish house. Other features will of necessity vary from time to time, depending upon the project which the remarkably adaptable owner has in mind. An adaptability which I feel sure will be successfully exploited in the new and onerous task he has taken on.

What's New?

Continuous Feeding Device

The new **Auto-Feeder** from Liver-ine Ltd. (Fraser Street, Grimsby, Lincs.) has the unusual feature of holding a charge of freeze-dried tubifex (10 grams—approximately two-thirds of an ounce) that is supplied in a specially shaped refill having a small container of silica gel crystals at its top. The Auto-Feeder is fixed to the inside of the aquarium by its plastic sucker and an air line is attached. A clamp provided with the feeder allows the air flow to be adjusted to give the slow rate of bubbling recommended in the instructions. The fish nibble at the dried worms at the base of the clear plastic feeder and it is estimated that one charge of the feeder will be sufficient for about 40 tropical fish for 1 week. This gives a useful period of feeding when the fish are left at holiday times. It is very simple to insert the replacement charge of food. The makers are planning to make other types of dried foods available for use with this apparatus. Cost of the Auto-Feeder is about 45p and tubifex refills are 25p each.

Quick Action for W.S.

WHITE spot treatments usually achieve their effect by attacking the parasite after it has encysted, left the fish's body and is free-swimming. Now King British Ltd. (Cannon Mills, Union Road, Bradford, Yorks.) have a new liquid medicament available, **Formula W.S.3**, that has been designed to attack and destroy the white spot spores while they are still attached to the fish. The manufacturers state that this quick-acting formula will cure white spot and other parasitic diseases within 24 hours.

B.P. Meth. Blue

NEW to the Acurel range of aids to fish health (Bioquatic Laboratories, 161 Rustlings Road, Sheffield S11 7AD) is **Acurel M**, methylene blue prepared to British Pharmacopoeia standards, which the manufacturers stress means that the water used to prepare the aqueous solution is deionised and the chemical compound is zinc-free. The solution is packed in a plastic bottle with specially designed dropper top to facilitate use and is accompanied by an instruction sheet that not only gives the required dosage per gallon or litre for various diseases but also includes tables giving approximate capacity for tanks of different sizes.

Appetite Stimulator

MANY a newly acquired marine tropical fish might be saved if it could be induced to feed. **Fish Stim** is a stimulant aimed at inducing feeding behaviour in hard-to-feed and newly arrived fishes and invertebrates. Made by the Alpine Marine Biochemical and Drugs Company and distributed in this country by Seanco (Aquatic Hobby Ltd., Farnburn Industrial Estate, Farnburn Avenue, Farnham Road, Slough, Bucks.), this is one of a new range of cures and preventatives that this company is introducing that also includes **Sea Water Conditioner**, designed to replace key trace elements in marine aquaria.

Fountain Accessory

THE **Water Wand** from Proops Brothers Ltd. (Hyde Industrial Estate, Edgware Road, Hendon, London, NW9 6JS) is a specially designed tubular fountain spray that produces a weeping-willow effect through a carefully arranged pattern of calibrated holes. Although it is designed specifically to fit the Proops' garden fountain pumps, a flexible connector will allow attachment to most other models. Alternative blank or pierced end-caps permit variable control of spread.

Non-Corroding Aquarium

THE new **Verbro** aquarium (Ver-rinder Bros., 42 Ladbrook Road, South Norwood, London SE23 6QD) has a frame made of high-impact, heavy-duty polystyrene, which makes it suitable for both freshwater and marine fishes. The glass panels are silicone-rubber sealed on the inside. The manufacturers point out that it will not rust, corrode or chip and the corner struts have been designed with a chamfered angle to avoid sharp edges.

Break-Down Stand

NO need to take a small van to collect the **Handstand** angle-iron aquarium stand. Manufactured by Lee, Reid & Co. (London) Ltd. (6 Beaumont Road, Banbury, Oxon.), it has tiers for two tanks when assembled, but has been designed to pack into a box for ease of transport. The manufacturers have demonstrated that it can be re-assembled in a matter of seconds, and no nuts or clips are used. Plastic feet to fit over the ends of tank stands are also manufactured by Lee, Reid & Co. for 1 in. by 1 in. by 1 in. angle and should save much disagreement about damage to the sitting-room carpet or flooring. Made of heavy plastic, they fit over each angle iron leg to give a small triangular flat base.

Specialist Booklets

TWO booklets from national bodies for aquarists were issued last month: the **FBAS National Show Fish Guides & Technical Information** Booklet no. 3 (24 pages; 15p) and the **Goldfish Society of Great Britain Standards for Basic and Popular Varieties** (40 pages; 40p). Both are illustrated with line drawings. Twelve fishes are covered in the FBAS booklet, together with aquatic plants and cuttings. Standards for thirteen approved goldfish varieties given in detail and also notes on the Standards as a whole and their application form the bulk of the GSGB booklet.



by
ARPEE

Personal COMMENT

I LIVE not far from Cheltenham, and whether you like the place or not, there is no argument whatever that the public gardens are really splendid. In particular, the Pitville Gardens, in which there are lakes for both ducks and for small boats, are great favourites of visitors and residents alike. The Parks Superintendent, however, has a dilemma. For some time past there has been talk of cleaning and draining the lakes and stocking them with coarse fish, which could in due course, be angled for under licence. At present they contain what is said to be largely a stickleback population—a source of immense delight to small children and, I suspect, parents and grandparents of taste.

After a considerable amount of flutterings behind the civic portals we read in the local press that Mr Smith has decided against stocking the waters with coarse fish because he has been advised that the sticklebacks could not be eliminated and that their presence would thin out other species so seriously as to make the scheme not an economical one. Without questioning the source of his information in relation to the precise local situation I wonder how many pondkeepers and naturalists would agree with the verdict. Perhaps the views of either would differ, one from another, even. My own experience suggests that the pondkeeper would reject completely the notion that sticklebacks, perch and similar aggressive species can co-exist with fish like goldfish, roach and rudd in a garden pool.

On the other hand there are ponds and lakes throughout the country where peaceful and predatory species live together in some sort of logical relationship, and where the numbers of none seem to get out of hand. I can remember many trawls of the ponds in Epping Forest when I was a youngster, in which half a dozen different species could be taken from quite a small area of water, quite consistently. Sticklebacks and perch were regularly featured and obviously had no more than their own particular place in the local way of things.

It would seem that the trouble begins when fish are confined to areas smaller than their territorial

instincts allow them to accept—at least in those cases where such instincts exist. The more aggressive species like pike, perch and sticklebacks tend to haunt particular areas, whereas those which tend to shoal for periods of their lives like roach and rudd move in and out of much more widespread areas. If this is true it seems reasonable to assume that it will be easier for a mixture of species to co-exist in a lake than in a garden pond, even though in the latter numbers were not particularly excessive: this arises simply because the likely sources of trouble are thrown together more frequently than in waters where there is more swimming room. Disputes over food and territory are likely therefore to build up with increasing severity as adulthood is reached if there is any shortage of either of these desirable things.

If these assumptions are correct I am inclined to think that, even with the present preponderance of sticklebacks in Pitville Lake, it would still be possible to stock it with other coarse fish provided that they were of a fair size—say 6 inches upwards. Any of the shoaling species would tend to move around in the more open waters and leave the sticklebacks in their favourite nooks and crannies round the edge and at the bottom. The fry of both would be at the mercy of the adults of both and ultimately numbers would reach a form of equilibrium determined by the overall natural economics of the lake itself. In other words I have little doubt that with the resources available a more interesting fish population could be built up, though whether this would appeal to the Corporation as a paying proposition is another matter.

The outcome would no doubt appeal to the angler, if not to the competition fisherman, whose sole measure of success is a pile of dead fish at the end of the day. The concept was no doubt encouraged by concern on the part of public authorities about what they can do to improve the leisure activities of people, and perhaps to give morons something better to do than smash up telephone boxes.

On the whole it seems that something more fundamental is required than gentle philosophy for the latter sort of malady, and it is doubtful whether fishing competitions in public parks will greatly assist either this problem or prove an edifying sight to those who simply go to those places to share their beauty. Although the local decision to leave things as they are was based perhaps on questionable evidence, I must confess that I find the outcome completely agreeable. The danger of commercialism has been averted and the

small boys will continue to be allowed to indulge their fancies with the tiddlers. And no doubt all those big fish out in the middle which nobody knew about will nod approvingly towards the Municipal Offices once in a while.



The letter from Mr I. McMahon in 1971 contained misgivings about the alleged plunder of coral reefs, and he quoted Jacques Cousteau as having drawn attention to what appeared to him to be a most serious problem. The writer exhorts us to refrain from buying real coral in favour of the plastic variety. I suspect that the situation is rather more complex than meets the eye.

Writing in *THE GREAT BARRIER REEF*, Allan Power, an Australian author, photographer and skin diver, alludes to the difficulties that ocean navigators encounter when feeling their way through coral banks, and states that in some regions corals multiply so rapidly that navigational charts are likely to become outdated within a span of 20 years. He also states that swarms of shell-collecting tourists invade the area every year and cause untold harm on account of their uneducated acquisitiveness. The professionals, with more know-how, are less clumsy but systematically lay waste to everything they have stripped, so that in a way their plunder is more absolute. We thus appear to have a situation where coral may be on the increase rather than otherwise, and where the future of the creatures which live within and around it is in greater doubt.

From a distance it is difficult to form a balanced conclusion as to whether a serious situation exists or not, but I very much doubt whether the answer will be found in the stimulation of our plastics industry—at least if Mr McMahon's motives are conservationist. He will no doubt agree that some of the most insidious pollution of all comes just from that very industry, and it may therefore be better in the long run to leave it to local governments to control coral collecting as well as the capture of other livestock around their shores. This type of activity—the winning and shipping

of coral and shells—was an established concern long before aquarists ever bothered themselves with keeping sea creatures, and there are more specimens in china cabinets and flower arrangements than ever we shall see in our aquaria.

It seems a little ironic that those like Cousteau who have shown us so much of the oceans and their inhabitants should now be concerned at the erosion of the natural resources which they hold so dear: there is something of the Greek tragedy about it all, but whether we like it or not, they have stimulated great interest and others have cashed in on it. It seems to me more likely that we should be helping M. Cousteau by refraining from buying fishes, anemones, molluscs and crustaceans than by creating a demand for individually tailored plastic coral at what would be sky-high prices if it were to approach the real thing in any recognisable way. I am afraid that I cannot agree that what is currently available is really comparable with the natural article unless it becomes algae-covered, in which case I do concede a point or two.

This seems to be a very big issue, and perhaps readers with access to more factual information may care to add to these observations. I share Mr McMahon's concern about any potentially dangerous reduction of natural resources, either in this country or elsewhere, but I am always reminded of the way in which Nature seems to compensate for the follies of man in quite unexpected ways. He may recall the Torrey Canyon disaster and the pollution of the River Thames. If memory serves me correctly the former has moved out of the disaster category, and quite exciting fish are now being taken from the Thames in reasuring quantities. In at least the latter case the improvement has come from intelligent work on the part of a lot of people and at last it seems to be paying off. I am less happy about trying to remove a potential problem by methods one knows are the wrong ones. It would be right, though, to draw the attention of those who have a measure of control over the resources to the possible cost to posterity, and I think perhaps that it is this that M. Cousteau is doing, rather than specifying a remedy.

The AQUARIUM SHOW '72

Friday 27th October to Sunday 29th October

at the Royal Horticultural Society's Old Hall, London S.W.1

ENTRY into The Aquarium Show '72 **Tableaux Competition** is open to any aquarium society and several societies have already reserved their spaces. Full details of the competition (first prize £25, second prize £15 and third prize £10) are given in the special schedule with entry forms that have been sent out, and any

society without a copy will be sent one on request to 1972's offices.

THIS year the FBAS Ted Jessopp Memorial Trophy is to be awarded at **The Aquarium Show '72**, in addition to the FBAS Council Cup, along with the numerous other special coveted trophies put up

annually for the competitive fish classes. Among these classes are six for coldwater fishes (GSGB Standards) and two for marines (entrants for the marine classes are expected to provide their own aquaria and sea water). Full schedules and entry forms will be available next month. Judges (FBAS) already engaged for the Show are Mr Brian Baker, Mr Sam Croft, Mr A. Deakin, Mr K. Nutt and Mr Jack Stillwell, with judges from MAAS and the British Marine Aquarists Association.



GUPPY

World

READERS have sometimes asked me about a suitable anaesthetic for use with guppies. One simple anaesthetic that has the additional advantage of being cheap and readily available is carbon dioxide. Called carbonic acid when in solution with water, it is readily available as that stuff we desecrate whisky with, namely soda water. All true Sons of Scotia are excepted from that last remark as they usually drink the hard stuff neat.

Allow the soda water to reach room temperature and use it in a dosage of one part of 'soda water' to five parts of aquarium water. Any guppy placed in such a solution will become inactive in a few minutes. I have used this method to treat certain skin disorders; painting an affected area with the suitable medicament is so much easier if the guppy isn't jumping about all over the place.

Important! The fish must be kept wet during this treatment and be sure that it isn't out of the tank for much more than a couple of minutes.

On completion of the treatment, the guppy should be returned to its own tank, where it will quickly recover. If the aquarium contains other guppies then isolate the patient until it revives. I have seen other guppies attacking an inert fish until they eventually killed the poor creature.

Ever since the Biblical account of Joseph's coat, multi-coloured objects seem to have held a fascination for the human race and that includes guppies. Yet, attractive as multi-coloured guppies are, I suggest the beginner leave them alone.

The basic flaw is that such fish

are invariably the result of either mix-matching or the deliberate combination of two strains by the experienced in the hopes such a guppy mating will produce something new.

In the aquatic shop, such guppies are very tempting to the novice, often much cheaper priced than their self-coloured comrades. Many stores have a pot-pourri tank in which they place all the residue from other strains; this tank usually contains many multi-colours.

By PETER UNWIN

Though these are good fish, they are for the advanced breeder well-schooled in the genetic arts. Production of future strains from such stock requires knowledge often lacking in the learner. Guppy genetics are complicated enough without the beginner adding to his problems.

In the past I have come out openly against those amongst us who would further sub-divide certain of our broadtail classes into colour. But having seen just how prolific some of the entries in these classes have become, I have done some re-thinking on the subject and agree that some outlines could be divided, provided these are kept to the minimum.

Before that occurs, however, I would suggest that we try to produce some form of a colour chart. At present I can think only of the gold guppy as complying—B.C.C. 53.

It is one thing to say 'red' but quite another if we are called upon to explain 'redness' to someone

who has never experienced it. Some blue guppies look distinctly green; this isn't so important where the fish are classified according to their finnage shapes (as in Europe at present), but in the U.S. where they are grouped according to their colour and shape it becomes a problem.

'Red delta, blue delta and green delta' might be impressive on a printed show schedule but it is often hard for both exhibitor and show staff to discriminate between self-colour and multi-colour; blue from green; red-eyed cream from pink-eyed albino.

Finally, if we are to have extra colour classes let us restore the balance by doing away with some of the classes now provided for. I shall start the ball rolling with the suggestion: the spearhead! Do I hear any more offers?

Though my tastes for all things 'fishy' are well-known I am not over fond of eating the critters. That is, with one exception—a catfish I was introduced to in the States, called *Ictalurus punctatus*, the blue, a delicacy that often graces American menus. It tastes like chicken and, as with that other favourite, etiquette permits you to pick it up and eat it with your fingers.

So popular has this dish become that many farmers are forsaking their more normal ground crops and instead are excavating their land to make pools in which they cultivate this more profitable crop of catfish. A business estimated to bring in some 8 million pounds sterling per year, with an area given over to its cultivation bordering on some 50,000 acres.

But even with all that production there still isn't enough catfish bred to satisfy the demand and so concerned are they about the deficiency that they held a conference in New York last year to see what they could do about it.

The blue cats are the largest and most valuable of all the North American catfish. Though most specimens turn the scale at 20 pounds weight they have been known to reach 150 pounds.

Just a mine too big even for those ardent show men who seem to specialise in 'monsters'. Still, keeping them would have one consola-

tion! If it joined its ancestors after being tossed about on the show bench you could always take it home for supper!

• • •
Everybody knows that guppies 'breed like rabbits'. Yet, like so many certainties of this life, the exception always disproves the rule.

How many breeders know the

feeling? You have finally obtained that wonderful female guppy for which you have searched for so long. Placing it with your top male, you sit back and eagerly expect the 'certain' results of such an encounter—only to be disappointed. Despite the weird writhings and wonderful courtship procedure displayed by the male, the female remains aloof and indifferent; she remains as sterile as the inside of a

spaceship.

Such failures of copulation are now being overcome by the use of the anaesthetic MS-222. Female guppies were placed in an aquarium containing this drug until muscular movements ceased (all except the steady, if somewhat slowed down, action of the gills). When females in this state were introduced to a male, matings were observed that resulted in 91% successes.

THE COLDWATER SCENE

Buying New Stock for the Pond

By ARPEE

AS one gazes gloomily into the garden pool in early spring, one wonders very often just wherein its attraction lies. I am generally philosophical enough about the unbeautiful aspects of out-of-season things, but the pond between winter and spring can be one of the most desolate and unpromising features of our hobby, and only the recollections of summer glories guarantee its survival. Even the perennial wonder of frog and toad spawn's first appearance is now a thing of the past for many of us, and within a generation this, too, may have gone for good. This would be a singularly sad and unnecessary tragedy and we should each and every one of us do what we can to preserve simple and fundamental things like these signs of spring for future generations.

It is small wonder that the pondkeeper is usually bewitched, utterly, by the first few sunny and heady days of April or May, when he realises that, after all, his pool is stirring again and will soon be transformed into a kaleidoscope of a host of living things. At this stage I usually lose all sense of judgement and reason and waste lots of time and money on adding things to the pond which probably aren't needed at all. There is virtually no danger in adding some plants, especially marginals or similar pondside subjects, but as the fancy usually turns towards fish, very considerable discipline is needed to avoid the worst sorts of folly.

At one time I used to consider, at this time of the year, whether I could afford an even bigger and better shubunkin or goldfish than I had stretched to the previous year. As time went on, however, the failure of these monstrous specimens ever to appear after the winter rest persuaded me that something was wrong either with them or with me.

To be fair, it was a bit of each, but probably more of me than them. It was certainly, demonstrably, a bad mistake to put large fish into an average sized pond, and I had to compromise by buying smaller specimens and allowing them to grow to the size which Nature decreed to be correct for the actual conditions prevailing in my particular pool. The larger fish introduced between, say, April and June tended to feed hesitantly and to waste away, despite the presence, apparently, of more than adequate foodstuff. As I dispense earthworm liberally to my pond fish as soon as the water begins to warm up I consider they all had a reasonable opportunity of survival.

In retrospect things may have gone far better if I had provided an interim stage for the newcomers. By this I mean that they could have been confined to a large tank in a cold room for a week or so, during which time any disease which developed could have been treated. At the same time a diet of chopped earthworm, glass larvae, daphnia (if available) and the usual run of conditioning delicacies would have buffered them against the shock of transfer to the pool. For there is no doubt at all that many of the coldwater fish we buy have either travelled far, from warmer places like Italy, or have been wintered in more favourable conditions than those to be met within our ponds, which, especially if they are deepish, take a long time to warm up after an especially cold winter.

Concurrently with the awakening process of the 'legitimate' inhabitants there is also the emergence of a host of parasites or predators who will only too willingly take advantage of the least weakness in a new fish and exploit it to the full. This can often be fatal. Although a quarantining and conditioning period such as described above would have

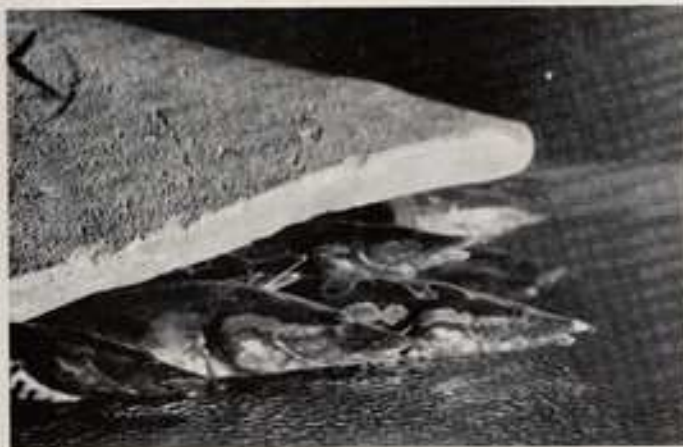
doubtless given most of the larger fish a better chance of survival than in fact they had, I have come to the conclusion that it is in many ways more satisfactory to watch 'tiddlers' grow up than to spend large sums of money on veterans which are not very impressive when moribund. So let's not succumb to a fit of the show-offs this year, and be more discriminating in our purchases.

Even so, we must look carefully at what is offered for sale. Most small and medium goldfish are probably passable, but particular care should be exercised when buying the slimmer and faster fish like orfe and rudd. Of these, 2 and 3 in. specimens are more often thin and sunken than otherwise and should be resolutely resisted in this condition. Torn fins are not serious faults, but no fish should ever be accepted which shows signs of

white spots on fins or body, or of white woolly patches or tufts. Look at the eyes, too. If there is any opacity on the 'glassy' part of the eye, the fish should be rejected. These younger fish need to be quarantined and conditioned, too, and this could take 2 to 3 weeks. Remember, though, that if you confine them to a tank, they will need heavy aeration, and if you cannot accommodate all you want at one time, buy your collection in batches. It can be much more fun that way, and certainly survival is more likely. The safest disinfectant is probably potassium permanganate, at the rate of two or three crystals to a gallon of water.

I do hope, though, that you waited for all your fish to emerge from their winter rest before you decided to buy new ones.

Six Characters in Search of a Caption



Result of
the caption
competition
(PFM, April)

(Photograph taken at
SCAN fish houses
by Cliff Harrison)

As we had expected, this photograph of spiny eels beneath a concrete slab, which in our April issue we invited readers to suggest captions for, sparked off a number of amusing lines of thought in the many letters received. Ideas based on the fish taking shelter—from rain ('Rain stopped play'), from the sun ('This sure makes a good sun shade') or from the tank-owner ('You're not getting me in any show jar—and I've friends here to back me up') were the most numerous. Current housing difficulties for humans probably prompted entries like 'I know there's

a housing shortage but this is ridiculous' and 'Mabel—don't you think it's time we broke away from your family?—we never get a chance to talk'. Several readers suggested 'Under starter's orders' and the race-line-up idea was also followed in entries such as 'On your mark, get set—'. Two readers gave almost identical captions incorporating an aspect we had not noticed: 'I didn't know we were mouthbrooders', i.e. the stone slab's fish head resemblance. It was the group of entries that emphasised the sense of something about to happen that appealed

most, however, and from these we selected the caption by Mr B. Sabbury, of 161 Church Leys, Harlow, Essex, '**Right lads—next time he tries to net us, all out, a quick Red Arrow bomb-burst and back into the other end!**' as the winner of the PFM book prize. To anyone who has tried to catch eels or loaches in a tank this caption certainly conveys the explosive quality of their activity when disturbed! To all entrants—thank you for giving us many laughs by your ingenious and humorous ideas.—EDITOR.

short of oxygen because of the size of pool. He discovered that his impression was erroneous when every fish died last August, when the pool temperature was high and the oxygen content correspondingly low. It is in warm sunny weather that the presence of oxygenating plants is so important, and their functioning may be seen, too. Bubbles of oxygen rise in a continuous stream to the surface of the water.

Either because they just wish to make a sale or more possibly because they have no practical knowledge of garden pools, salesmen in the so-called 'pet shops' will gladly sell rudd and orfe to all and sundry without stating that these fishes require more oxygen than do goldfish. From my own sad experience of summer in 1970, when I lost rudd and orfe in my pool on the allotment, I consider it most unwise to invest in these fishes unless a waterfall or fountain is installed so that water may be aerated frequently in high summer. To buy a large orfe for a garden pool is another mistake. The orfe needs a fair area of swim room and if cramped by small pond conditions, the fish will jump out on to the lawn! For most garden pools, the smaller the orfe are, at purchase, the better. In a medium-sized pool the rate of growth of orfe equates with the growth rate of common goldfish.

Small golden carp or hi-goi cost only around 15p or 20p each and settle down well and grow steadily in the garden pool. Their prominent barbels allow even the most ignorant visitor to differentiate between golden carp and yellow-coloured common goldfish.

Nishiki koi also have barbels, but trying to explain which is a koi and which is a common goldfish to visitors is a nuisance, if like me, you have red or red and white koi. My finest koi, colour-wise, committed *kori-kori* in blanket weed; the yellow/green koi is easily spotted by visitors as being something different and rather handsome. But where are the colourful koi pictured in the 1971 booklet koi? True, you can get large, colourful koi at from £10.00 to £500.00, but you and I are in the pool fish game for the pleasure it gives us and we need reasonably priced, colourful fish. Red and white koi are much sought after in Japan but the European pool-keeper prefers other colours.

Blue is most desirable for pool fishes in Europe and if Japanese exporters cannot supply blue or mixtures with blue and gold predominating, then the great majority of European pool-owners will stick to the shubunkin. Some excellent shubunkins with plenty of blue about them can be bought for between 35p and 50p.

Too much mystery has been and still is made about the breeding of goldfish. Given a few healthy adult goldfishes in a proper pool, there is nothing you can do to prevent them from spawning! If the pool has a fair amount of oxygenating plant life or some blanket weed in it, a proportion of the fertilised eggs will hatch and you have fry. If then, willy-nilly, you decide to change the pool water and give the pool a summer clean, you will lose your fry! The larger fish are bound

to devour a percentage of the fry unless you remove them to another pool or to a tank. I leave mine in the main pool and I finally come across about a dozen small goldfish each autumn when the pool is given its much deserved annual clean.

A neighbour netted as many fry as possible from his pool last summer and housed them in a large tank. He is now wondering what on earth he is going to do with the hundreds of small fish. No dealer would handle uncoloured fish of such small size and my own rain-water tanks already house my own pool-bred fish of various ages. I am most willing to pass on any of these fish to neighbours constructing a garden pool. Most prefer to spend money and an hour or two at local pet shops where larger selections of fish are on show.

Readers' Queries Answered



Show Requirements

*For several tanks I have owned a spiny eel which I believe is *Macrognathus aculeatus*. According to the experts it grows to 35 cm. My specimen is 16 cm long but it is the biggest I've seen. I'm wondering what chance it would stand in a show and what class it should be entered in. Also, with regard to 'Breeder's classes', do entries for these have to have been bred and raised by oneself or only spawned and reproduced while in one's hands?*

The sizes quoted in the literature (e.g. FRESHWATER FISHES OF THE WORLD by G. Sterba) are the maxima that the particular species attain in the wild, but obviously the restrictions imposed by life in the aquarium (notably the limited swimming space available) will curtail growth to a considerable extent. As a very rough guide, the larger species of fishes will commonly reach one-half to two-thirds the maximum wild size quoted by Sterba, when kept in captivity. Your own particular speci-

men is certainly a very reasonable size when compared with others seen in aquaria, but it would still forfeit some points on this score when judged in a show; however, size is only one of the factors on which a fish is judged, and it might well make up points elsewhere on the quality of finnage or its overall condition, for example. It would be exhibited in class M (i.o.v. egg-layer).

FBAS Show Rules on the subject of breeders' classes state that 'a breeder's entry shall have been bred by the exhibitor and not be older than 14 months at the date of the show'.

Undergravel Filtration

I have just bought an undergravel filter for a small tank (16 in. by 9 in. by 9 in.). Now a fellow fish man tells me that after some 6 months the dirt that the filter collects gives off gas that can kill the fish. Is this true?

There is no reason to suggest that gases that can kill fish would be

formed as a result of using an under-gravel filter. Under circumstances in which such a filter was installed but left unoperated (i.e. unattached to an air line) for a period, it is true that some accumulation of potentially harmful materials might occur. However, this state of affairs is no different from that attaining in an aquarium having a deep bottom layer of gravel without an under-gravel filter; after some time blackening of the deeper gravel indicates changes of the kind referred to above, and if this area was to be stirred into the general aquarium water trouble could result for the fishes. We think that the filter that you are using is perfectly adequate for the job.

Excessive Lily Growth

The water lilies in my pond have gotten huge this year and I am going to have to cut them right back because their leaves have just about covered the water surface. How can I prevent this happening again next year?

Water lilies are of different types in various sizes, of course, and you may well have planted in your pond (the size of which you have not given) lilies more suitable for giant ponds. However, provided that you are prepared to cope with the problem every autumn you can keep the largest lily in control. Prune the rootstock so that you start each season with only a small portion of new rootstock. Keep the planting down to one or two lily pots and ignore the usual instructions to give your lilies a rich loam in which to grow.

Frightened Fish

I am finally writing to you after waiting all the summer for my fish to become tame. As I have rather a large pond I was very careful to choose some nicely coloured shubunkins and calico fantails but we have hardly seen them since I put them in, and far from coming up for food they disappear the minute anyone goes near them. We are really rather disappointed in our latest pets. They don't seem to realize what is expected of them at all!

At least you have the satisfaction of knowing that you have provided them with living quarters that are obviously almost too comfortable. They are not interested in your food offerings as they have plenty of live and plant food available to them in

the pond. And in the depth of the pond lies safety—the large fish lolling about on the surface is more at risk from predators such as hungry cats and birds. There is, of course, the possibility that visits from one or other of these have frightened the fish and caused them to keep out of sight. But now might be the time to start your 'taming' programme as the supply of live foods dies down with the decreasing temperatures. Try to arrange for someone to visit the pond quietly at a regular hour once or twice during the daylight hours. If we get some sunshine during the autumn the fish will certainly be near the surface at some time during these visits. A little brown bread or pond food thrown on the surface should attract them and they can be gradually encouraged to approach the side of the pond. If you start early enough next season—feeding always at the same time and at the same place, you will get results. It would be worth adding several koi to your pond colony and an orfe or two. Koi are such hearty eaters that they will find the additional tit-bits irresistible and the orfe will at least be visible as their habit is to feed on surface insects.

Incompatible Oscars

I have two oscars which I believe to be a pair. They lived quite peacefully together for several weeks and then started biting each other's jaws, which I thought must be spawning ritual. But one became quite battered and retreated behind a stone. I separated them with a pane of glass. After a week or so, I removed the glass but they immediately began the jaw-biting again and suffered quite severe cuts. Can you please tell me what to do with them?

The lip-tugging that you mention is indeed connected with the spawning ritual of the Cichlidae. It is a sort of 'trial of strength' and if the pair are compatible no harm will result. Since one of your pair, however, retired with injuries these two fish are certainly not compatible, are likely never to be and to try to keep them together may well result in the death of one of them. They may be a pair, but cichlids do not necessarily accept the mate chosen for them and grown fishes can be extremely hostile towards one another. You do not give the size of

tank in which you have been keeping them. Oscars require at least a 36 in. tank supplied with plenty of hiding places made from rocks and cork bark, to which the weaker fish may retire and hide away. However, it would be safer to separate the fish entirely.

Poor Plant Growth

I am a beginner in keeping tropical fish and my main problem is that my plant life does not flourish. The tank (a 30 in. by 12 in. by 12 in. containing four sciaenids, four barbs, 12 neon and a catfish) has been set up 4 months and gets 12-14 hours per day lighting from two 20W Gro-lux tubes. The Vallisneria and Amazon sword lose their lower leaves and the new ones are small and soon die back. Cabomba slowly rot mid-way up the stem and finally fixates out.

The usual cause of poor plant growth is inadequate lighting or insufficient nourishment from the fish population. Whereas it seems in your tank that the amount of light is adequate, there is a possibility that the quality might be changed with advantage; for example, by replacing one tube with a warm white or with tungsten bulbs. It is also likely that nitrogenous matter for the plants has been minimal because your fish population is not very great and has not been in the tank for long. Conditions will improve with time and as you acquire more fish, but in the meantime it would be worth obtaining one of the proprietary plant tonics that are available for use.

Shy Jack Dempsey

Two months ago I bought a pair of Jack Dempseys. They grew at a tremendous rate and a month later spawned in their own tank. Two days later the male killed the female. I don't wish to have a pair but my male is so shy. Any sudden movement sends him dashing for cover, where he stays for about 10 minutes. The tank (a 20-gallon one) is well planted and he does not dig or uproot the plants or do any of the things that large cichlids are supposed to do. What is the reason for this un-cichlid-like behaviour?

One would suggest that this cichlid has not adjusted to his new home yet. You have had him for 2 months, in the presence of another

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TROPICAL MARINE PROJECT—6

Review of Procedures and Equipment

By ROY PINKS

AT this stage, before discussing marine fish communities, I want to run over this series with a critical eye on procedures and techniques used. The comments I make are relevant to the situation as I found it, and mariners with greater experience are very likely to disagree in detail. If they will write about this in the light of their own findings, no one will read what they have to say with greater interest than I.

Sea Water Reaction

Although there are marine pH test kits on the market I didn't use one at any stage of these trials, mainly for the reason that I have never paid much regard to this factor at any time since I first started keeping fishes. This is possibly because I have always lived in places where the water is on the alkaline side and I have therefore been spared some of the problems confronting aquarists operating in places less favourable to marines. The books say that the water should be around pH 8.3 and it may in practice be found not to need adjustment at all if adequate coral and coral sand are used, as these hold the reaction steady over a long period.

My decision not to use coral sand therefore must come under fire: I used white Rainbow gravel instead, which is probably inert and therefore safe rather than helpful. I used it because I like the look of it and it is cheaper by far. I think it can cost about £9 to equip a 48 in. tank with coral sand—a hurtful item at a time when there is such a high outlay on all sorts of other exciting things. Furthermore there is some very trashy coral sand about, which, at the price, is greatly inferior to gravel. It consists of crushed coral segments and should be firmly refused. Coral sand looks like fine, honey-coloured builder's sand, not gravel. My economy may in the long run prove to be a false one, but there is plenty of precedent for the success

of gravels like Rainbow. However, one should be as generous as possible with coral itself and not remain content with the conventional three lutops (the biggest one in the middle, of course).

I think that most aquarists will have a fairly good idea of the eccentricities of their local water in terms of pH, and if they are worried on this score a test kit is a worthwhile investment. It must, however, be a marine test kit, as the freshwater version will not work with sea water.

Marine Tank Lay-out

In retrospect, one of the silliest things I did was to think that my initial lay-out of corals etc. in the tanks could be adjusted and varied from time to time, just as the whim took me. I was well aware that most marine fishes are territorial by nature and that they can be upset emotionally by drastic changes in their environment: one moment they have the security of their nook, and the next sees it thoughtlessly transferred right under the nose of the boss fish simply because that piece of red coral 'looks better' so. Tom bodies or worse could follow serious indiscretions like this, so repositions of coral have to be carried out intelligently, and this means studying the territorial parcellings within your tank before disturbing the status quo.

Having accepted this I worked, erroneously, on the assumption that I could lay the foundations of what overall effect I wished to achieve and gradually add features as I obtained them to complete the picture. What actually happened was that I kept adding small features and created an unsatisfactory amalgam—visually, at least. The trouble was that I lacked two or three really large features and only came upon them at a time when the tank's inmates were in a particularly vulnerable position: it may be recalled that I lost my best fish by

the introduction of inadequately cured coral, which superficially had passed muster by normal standards. How different the story would have been if I had shopped around until I had got all the tank furnishings I wanted and had achieved with them, in situ, the design I had in mind. In all likelihood the poison would have been detected at the outset before ever a fish entered the tank and I would now be in the black over the deal rather than in the red.

To adopt this approach is not really as boring and tedious as it sounds, impatient though we may all be to get cracking with real live introductions. Setting up the coral is quite an undertaking, especially if you are constructing caverns buttresses and similar landscaping. Very much more patience is required than seems necessary and you should be ultra-critical of every piece you position. Take a good look at it from every vantage point in the room, and particularly examine it with the overhead tank lighting on. The lie of shadows and the interplay of the diversity of colour, even of the white corals, make it important to so order things that absurd contrasts are avoided in the wrong places, and that maximum impact is achieved at the focal points.

You will find that some pieces of coral will interlock with each other and form strong features, whilst others need quite different manipulation if they are not to collapse in disorder one day when you are trying to net a fish. You will find that a number of single, finger-thin long pieces will help break up monotony and may be arranged in pillar formation, irregularly, to provide continuity between the large formations at the back of the tank and the wide open spaces of sand or gravel that extend up to the front glass. A wide variety of sea fan and sea tree, both of animal origin, will also be found invaluable for your

furnishing, but it is wise to build them into your coral structures as you create them, rather than to interpose them afterwards, because you must at all costs avoid forcing apart bits of your ramparts which will otherwise remain in a state of suspension and later collapse at the merest pretext. It is amazing how coral catches on everything—just try running a net alongside a piece under water: this is how sea fan and sea tree react also, and unless you make your features really firm you are likely to drag a promising structure back to square one by a careless move in positioning a piece of sea fan.

It can thus be a well spent week or more getting the lay-out really right. If, ultimately, it spells success you can switch on all systems and watch how the water reacts for a few days, and if it passes every test that you can think of—and this includes your nose as well as your wit as an aquarist (for both are quite reliable)—you can progress to the next stage and decide on the type of your starter fish.

Background for Marines

It was also a mistake to defer construction of the final form of the background until a late stage; this should be carried out concurrently with the disposition of the tank contents. Although I like the presence of sea fan in the tank itself, the 'raw' version in its natural brownish grey coating may only be used externally. This can show up to advantage if you make a boslike background for your tank and fix pieces of sea fan within it in such a way that it achieves symmetry with the furnishings of your interior. Pieces of coral, preferably the longish bits again, may also be incorporated into this container.

For my money, anything resembling a plant or seaweed looks not quite right, but those with greater skill than I possess may well make something of these items. At all costs avoid the temptation to use garish bits of fluorescent material of diverse colouring or bits of glass or mirrors or prisms. These don't belong in your background and are better in the dustbin. Your exhibits are, after all, the fishes for which you are going to pay a mint of money: if, having done so your visitors' comment on the sunken galleon and the mermaid in your plastic backcloth or those

sparkly bits you had left over from the Christmas decorations you only have yourself to blame. Backgrounds lead you away gently to undisclosed secrets of the deep, so you must make them as subtle and suggestive as you can.

Tank and Cover

The improvements I made to the covering for my second tank, the substitution of Perspex for glass and the strengthening of the Perspex by affixing it to panels of corrugated roofing material, significantly improved the process of eliminating salt deposits and simultaneously gave me greater flexibility in the deployment of overhead lighting, heater-thermostat positioning and the insertion of air-lines. However, since in my experience every fishkeeper has his own ideas about how to make a cover and what facilities he wants in it, the reader may wish to follow his own inclinations within the scope of the suggestions I have made. The point is that the cover is another matter that should be planned and executed before you start adding fish to your tank; so sit back, think hard about everything you are likely to want to do without actually removing the tank cover; then start designing these requirements into it.

There was never the slightest doubt that the so-called stainless steel Metaframe tank is a failure for marine fishkeeping because rust keeps appearing at the frame joints. Even though I coated these before use, the corrosion still builds up and the tank looks a poor advertisement indeed, despite regular and thorough servicing with a mildly abrasive sponge and a soft cloth on all the external metal facings. A nylon-coated tank is both more reliable and looks better in the long run than a shiny metal tank with all those spots on it. The decision to change to this alternative undoubtedly saved me lots of time, trouble and worry, since the element of poisoning is always present when using a so-called stainless steel tank, and this is an aspect which I am watching most carefully in my first installation.

Causes of Deaths

Post-mortem examinations are well worthwhile for fish deaths that cannot readily be explained, but often the reports can only point a finger in the general direction from

which your trouble has come and you will have to make your own contribution in interpreting the findings to best advantage. I have cause to be most grateful for some of the helpful comments Mr Harold Cotton has made on my own casualties.

It should perhaps be remembered that bugs that appear on your ailing fish and seem to the aquarist to be a cause of death may be nothing more than the advance party of natural undertakers whose job it is to break down an otherwise harmful pollutant into something that other creatures can live with.

In many cases the deaths are simply the end of ageing or weakened fish and nothing you ever could have done would have helped. Circumstances where a post-mortem may be of vital assistance are those where all the fishes in a tank seem to be suffering from something odd and one dies, or where a known young and apparently healthy fish suddenly keels over.

Marine Algae

Much has been written about the place of algae in tropical marine tanks. There are fishkeepers who like them and there are those who regard algae as an intrusion. Algae come in many shades—brown, red, green and combinations thereof. That they are essential food for some fishes is unquestioned, but as the problem mainly seems to be to get an alga to grow in the right quantities to satisfy species with a liking for it, one must assume that, by the law of natural contrariness, you are lucky if you can cultivate the sort you want in the amounts you want. It can also be misleading to assume that once you have got a good covering of algae you can support an algae-loving species on the output of your average sized tank, and you will have to consider alternatives like boiled spinach or lettuce as a follow-on diet if the fish clears up your algae plantation within a week or so of joining the tank.

If you are keeping fishes with no great feeling for algae and you begin to dislike them, if you have constructed your coral structures sen-

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R. C. ARMSTRONG describes

Techniques in Breeding the Aquarium KILLIES

ON odd occasions some pairs of killies will decide, although they are perhaps best known as a top-spawning type, to lay their eggs in peat. So for many weeks one searches the peat provided for eggs but does not find an egg, and on examining the peat many eggs are found. This does seem to happen with odd pairs of all the groups except the 'peat-divers' and they are known as ubiquitous spawning types.

In some cases one can force the so-called non-annuals, e.g. *Aphyoanias australe*, to lay eggs in peat, by gathering the peat after a few days of placing a ripe pair or trio in a tank, to dry the peat out in a net for a few days and store the eggs as one would store those of the annual type. I have stored *australe* eggs for 60 days.

This method has advantages. Normally the *australe* egg will hatch in water in 10-14 days, and the fry are removed as they hatch to other quarters. After 2 or 3 months one then has fry at many different sizes. Large fry will eat smaller brothers and sisters if all are kept in the same aquarium. Many tanks are needed to sort out the different dry sizes if one is going to achieve a reasonable number of adult fish. With the dry storage method, peat and eggs can continuously be added to peat and eggs that have been stored for a week or two, building up the number of eggs for final hatching.

The drying-out seems to retard the development of the egg so that one can add peat and eggs every week until about 7 days before one requires the fry and is ready for giving attention to a large hatch.

When the fry hatch most of them are of an even size, the first eggs hatching out in about 60 days and the last few eggs in 7-10 days. I have used this system on several species and find I can raise large numbers of fry all within reason of

the same size and with a minimum number of tanks required.

Delays in Hatching

Eggs of some killies, e.g. *Rivular* species, at times do not hatch when expected. It is possible that the enzyme normally secreted by the egg to soften the shell is for some reason not doing its job. Hatching can be induced by the aquarist blowing down a tube into the water, thus increasing the carbon dioxide content.

I find the best two methods to be these.

(1) Place the container of eggs and water on the top of a working air pump, making sure the container will not fall off. After a short session of this, fry are glad to hatch!

(2) Place the eggs and water in a glass phial and carry this in a jacket breast pocket for an evening. The warmth and the movement usually hatch all the fry, which can then be returned to the original container and fed.

On rare occasions fry do hatch before they have absorbed the yolk sac. Do not feed these fry until the yolk sac has disappeared. Slight aeration will help the fry to move around, which in turn will speed the absorption of the yolk sac.

Life Spans

Many articles have been written on the life span of killifish. Most of the bottom-spawners and peat-divers, which live in areas of drought, live possibly 2-4 months in Nature because of the evaporation of water. In aquarium conditions these fishes, well cared for, will live up to 3 years, sometimes longer.

At the other end of the scale are many of the non-annual killifish, e.g. *Aplocheilichthys lineatus*: I have a male, which still wins the odd prize in open show, which is 7 years old, shows little signs of age and still

provides me with excellent offspring.

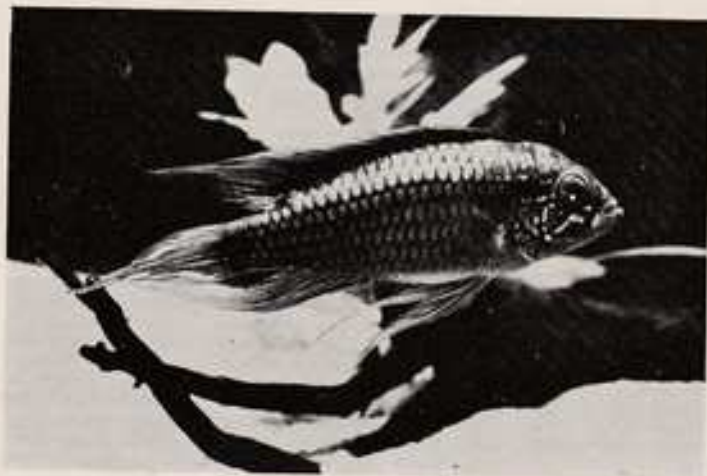
Killifish do not require the soft acid water conditions that were considered necessary some years ago. Although it is true to say that freshly imported wild fishes, especially from Africa, do require acid water they can be slowly converted to live in hard water conditions, with the result that their offspring can tolerate hard water from hatching. The fish are easier to handle when all the fishes in a fish house or fish room accept more or less the same water conditions, straight from the tap. Also such fry and adult fish passed on to fellow club members and friends will result in their being able to keep the fish in their normal water condition tanks.

Many of the South American annuals have been raised, to breed and further generations to be raised, very successfully in London tap water.

Names used for killifish sometimes worry aquarists. It is true that common names are used for killifish as with other types of fishes, but the Continentals, the British and the Americans often use different common names. If I received eggs from a friend in America it is possible, if we described them by common names, that I would receive eggs from him of a type that I did not require. If the eggs that I received had to be stored for 6 months I would not be very pleased after that time to find they were not the species I wanted. Whereas when we use scientific names I am assured that the eggs I get are of the species I require.

The growth of killifish enthusiasts is taking place at a fantastic rate, the British Killifish Association having now some 800 members, possibly by the end of this year making 1000 members. The American Killifish Association is another very large association, with, like the BKA, an international membership.

The Dwarf Cichlid of Agassiz



Apistogramma agassizi

By RUDOLPH ZUKAL

Photographs by the author

Illustration by F. MARSH

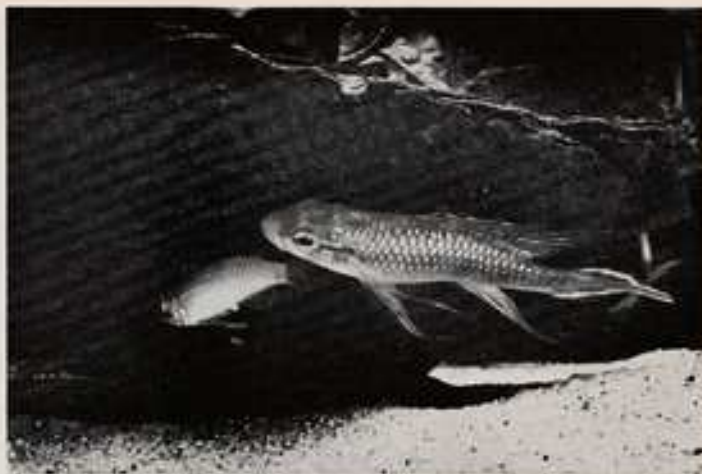
AS one can read in the appropriate literature, this representative of the dwarf cichlids comes from the Amazon region (the southern area towards Bolivia, according to Professor Günther Sterba). 'The Amazon region'—it always grieves me to dismiss a fish's natural habitat with such a phrase, for this immense river has an overall length of about 6000 kilometres and the weather and climatic conditions obviously cannot be the same throughout!

The fish was introduced into Europe in 1929 but it is not one that is found so very often in the aquarium. I don't understand why this is, because *A. agassizi* is a relatively small, peaceful and gorgeously coloured fish. Perhaps it is because many authors say that rearing it presents problems. But I cannot agree with this.

The body of the male, which grows to about 2½ in. in length, is elongated and compressed slightly at the sides. The dorsal fin is long and drawn out to a point. Its back is a greeny blue colour, the sides are light orange, turning to greeny blue again towards the caudal. The jaws are streaked with shiny blue and the whole body is covered with shining green-blue spots. Although not always clearly visible a brownish red stripe runs from the mouth to the caudal fin, and there is a small stripe curved over the eye. All the fins are a light-orange colour except for the ventrals, which are colourless. The female is a smaller fish, not as highly coloured and her fins are not elongated.

A. agassizi should be kept in a medium-sized, thickly planted

A piece of slate inclining in the gravel was used by this pair of dwarf cichlids. Here the female (left) is cleaning the slate surface ready for the deposition of her eggs. The female is much smaller than the male. Another picture of the male *Apistogramma oguziti* is shown on the opposite page.

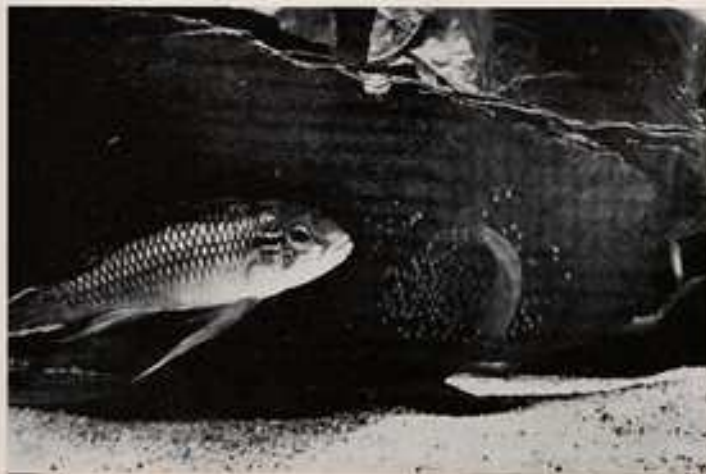


tank with plenty of hiding places. A temperature of at least 72°F (22°C) is required. The tank should be well illuminated so that the gleaming colours of the fish show up well. The water needs to be soft, slightly acid, not too old and well aerated. The fish are peaceful enough except during mating play; but when they are not spawning they don't grub about the tank and in a community of fishes will keep well in hiding. For this reason they should preferably be kept in their own company or at least with quiet little fishes. They are particularly susceptible to chemicals in their water and indeed even a complete change of water can cost them

their lives. They require live foods.

For breeding purposes I filled a 4-gallon tank with a mixture of two-thirds rainwater and one-third tapwater. A normal substrate base was used and the background planted with *Myriophyllum*, *Najasphila* and *Ceratopteris*. In the front of the tank a slate was placed in a slanting position (the female lays her eggs on a firm surface in, if possible, a position where the belly is turned upwards). For 3 days I aerated the water vigorously, and the temperature was raised to 81°F (27°C).

For a week beforehand I had kept the fish separated from each other; then when I put them into



With her belly against the slate the female is laying her eggs, seen adhering to the slate while the male waits his turn to swim over the latest batch to fertilise them.

the breeding tank they immediately disappeared in fright into the plants, and only started swimming cautiously round the tank a day later. Even then, they hid again at the slightest movement. Finally, when they had quite settled down, they began the cichlid mutual display behaviour. The caudal fins were brushed against each other and there was gentle touching with their mouths though I did not see any mouth-tugging this time. Several days passed until finally they took up positions in front of the slate.

From then on, everything happened very quickly. The female carefully cleaned the chosen place while the male waited patiently; whenever she approached the spawning place his whole body quivered. Soon the female laid the first eggs. The male did not twist about much but remained under the spawning female or else under the eggs in a slanting position. As she laid the eggs the female turned with her belly to the slate, laying a few at a time (those eggs that fell off were eaten by the male). When the female had laid a few eggs, the fish would change position so that the male could fertilise them. The number of eggs became bigger—I counted 90 and the spawning took about 2 hours.

After this time the female took up a threatening position. Her colours changed—the stripe along the length of her body stood out clearly and finally the male had to give way. The eggs were tended by the female, who gently cleaned them with her mouth and propelled fresh water over them by the movement of her fins. The males can be fatally wounded by the females, so I took the male out.

Once the egg sac is absorbed the young brood must be given the finest live food; 14 days later, when the young are finally independent, the female can also be removed.



Care of the eggs in *Apristogramma ocellata* is done by the female, who in the aquarium does not tolerate the presence of the male at this stage. About 90 eggs were laid by this female in about 2 hours and the male was removed when spawning had finished.

Marine Project

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sibly you can remove and clean individual pieces, leaving others algae-covered, and in this fashion a pleasing contrast can be achieved, especially if the algae is the green sort. From my own observations I must agree with algae critics that their growth looks terrible in the wrong quantities, but if you can compromise and put up with a certain amount in each tank, I am sure that the effect will prove agree-

able and that the fish may be tempted to peck away at it in idle moments and so supplement their diet in a most beneficial way.

Undergravel Filtration

After several months' working, the use of an undergravel system in conjunction with a nitrite test kit and any necessary copper sulphate medication does seem to provide a system that serves as a basis for keeping tropical marines. The incidence of disease as such was much lower than I had expected, but the way in which several of the trial fishes reacted was far more individual than I expected. The failure of the *Danaydus melanurus* as starter fish in my second tank, owing to excessive salinity, was something

of a surprise, for example, and one or two fish did better than I had ever expected because they did not look especially good when I bought them. The success of the trio of the percula clowns was an unexpected bonus because they overcame both a severe drop in salinity as well as a fairly high nitrite level. Taking all in all, however, I am fairly sure that had I followed most of the basic advice outlined in article number 1 of this series (PFM, February), as modified by these conclusions, my losses would have been minimal. The concluding parts of this particular series will comment on some of the species I kept during the trials, with particular emphasis initially on disease.

(To be continued)

Queries Answered

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fish, during which time his attention would have been largely occupied by his relations with his tank mate, whom he ultimately rejected and killed. Now that this 'occupation' has been eliminated he may be more aware of movement outside the tank.

You give the size of your tank but you do not describe where it is. Is it possibly low down or in a position where there is much traffic to-and-fro so that he has reason to be startled? Or, alternatively, is it in an isolated position where he only has a couple of visits a day? The tank furnishings that you describe sound very suitable with plenty of rocks and a couple of flower pots in which it can hide, but

is the tank blocked off except for the front panel? It often helps a nervous fish to settle in if the sides and back of the tank are panelled with polystyrene. Once this fish does settle down it will be unusual if he does not uproot and eat the plants. It would not be difficult to find suitable tank companions for him, such as one or two spiny eels or knife fishes of a suitable size.



FBAS Basic Show Class Letters:

A, furnished aquaria and aquascapes; B, barb; C, characin; D, cichlid; E, labyrinth; F, egg-laying toothcarps; G, tropical catfish; H, Corydoras and Brochis; J, rasbora; K, danio and W.C.M.M.; L, loach; M, a.o.s. tropical egg-layer; N, pairs of fish; O, guppy male; P, guppy female; Q, swordtail; R, platy; S, mollie; T, a.o.s. livebearer; U, single-tailed goldfish; V, twin-tailed goldfish; W, a.o.s. coldwater; X, breeders classes; Y, marine fish; Z, plants.

549 ENTRIES proved a record and was described as 'fantastic' when the village of Martock, nr. Yeovil was invaded by aquarists from London to South Wales for the **YEovil & DAS** Open Show. The FBAS Stand, brought down from London by Mr A. Blake and Mr L. Jordan, proved a main attraction. Mrs Lange, wife of the Society's chairman, presented the trophies to the competitors of the entries judged winners of the classes by Mr & Mrs Stillwell, Mr Coombes, Mr Masley and Mr Wigg. These were:

R, Mr A. Blake (B. Cox Cup, Basingstoke); C, Mr & Mrs Madwey (The Yeovil Best, Weymouth); D, Mr R. F. Adams (Selisbury); Ds, Mr J. Bagg (Blackfenleigh); E, Mr A. Blake (C. Bagg Cup, Basingstoke); F, Mr P. A. Lewis (Bristol TFC); G, Mr D. Lambourne (Rushampton); H, Mr P. A. Lewis (C. G. Price Cup, Bristol TFC); J, Mr & Mrs Madwey (King British trophy, Weymouth); K, Mr L. G. Little (Blackwell); M, Mr R. Baker (D. Harrison Cup, Basingstoke); N, Mr A. Blake (A. Rendell Cup, FBAS trophy, Basingstoke).

O, Mr W. Barton (Trosbridge); P, Mr J. Bagg (Blackfenleigh); Q, Mr C. Rowell (Bath); R, Mr L. G. Little (Blackwell); S, Mrs Griffiths (Bristol).

U, Mr G. J. Aze (Foston Hotel Cup, Yeovil); Us, Mrs Beckers (Yeovil); Uo, Mr D. S. Langdon (King of the South Cup, Yeovil); V, Mr V. Collins (Yeovil); W, Mr V. Collins (Yeovil); Xv, Mr A. C. Worth (F. Lange Cup, Doochester); Xv, Mr A. Blake (Basingstoke); Xv-o, Mr D. S. Langdon (Yeovil); X, Mr J. Jeffrey (Phon trophy, Basingstoke).

The Yeovil Challenge Cup for the best fish in show was awarded to Mr Bailey of Basingstoke, the V. Collins Cup for best junior entry to Miss Karen Rendel of Yeovil and the FBAS Trophy for pairs of fish to Mr A. Blake.

WINNERS of the classes at the **CROYDON AS** Open Show were the following:

R, Mr K. Bason (Basingstoke); C, Mr A. Marshall (Basingstoke); Gs, Mr Tate (Kingston); Ch, Mr R. Bason (Basingstoke); D, Mr A. A. Houghton (Gosport); Ds, Mr D. J. Whitlow (Croydon); Ds, Mr R. Weston (Basingstoke); E, Mr C. J. Mason (N. Kent); Es, Mr L. J. Brazier (Aston); F, Mr and Mrs Fagan (Clapham); G, Mr J. M. Wood (Beigate & Rodell); H, Mr R. Wright (East Dulwich); J, Mr R. J. Breckley (E. Dulwich); K, Mr R. Bown (Independent); L, Mr A. Wood (London); M, Mr H. Mason (Basingstoke); Ns-o, Mr J. E. Buntingham (Tonbridge); No-1, Mr A. Kinsey (Independent); O, Mr E. Steiner (Fresno); P, Mr K. Shadbridge (Tonbridge); Q, Mr S. Mason (Rushampton); R, Mr D. Crutchbourn (Basing); S, Mr F. A. Moxe (Apsal); T, Mr R. Bown (Independent).

U, Mr W. F. Underwood (Fresno); V, Mr S. Johnson (Portsmouth); W, Mr D. A. G. Sockles (Purton); Xv-o, Mr S. Mason (Rushampton); Xv-m, Mr & Mrs Fagan (Clapham).

FBAS judges Mr Baker, Mr Brown, Mr Towell, Mr Tomkins, Mr Eason and Mr Ginger had 725 entries to inspect at the first Open Show held by **ROEHAMPTON AS**. The FBAS Championship Trophy went to the *Lebotropheus fülleborni* entered by Mr R. Bown. Mr Gerry Greenhalf won the best fish in show award and Kingston were the club with the highest total points. Silver medals for best juniors were awarded to Master S. Adams and Miss T. Hedges, both of Bethnal Green.

Class winners were:

A, Mr J. Salsbery; B, Mr R. Brooke; Bs, Mr K. Smith (John Waller trophy for barbs); C, Mr T. E. Hine (Hudson trophy for best characin); Cs, Mr T. Kinsey (Charles Aquarian trophy); D, Mr R. Baker (May trophy); Ds, Mr D. Pratt; Ds, Mr L. J. Brazier; Ds, Mr R. Bown; E, Mr G. Greenhalf (King trophy); Es, Mr S. W. Appin; Es, Mr J. Batta; F, Mr & Mrs Hudson (F. Farnham trophy); G, Mr G. Greenhalf (Lambourne trophy); H, Mr R. Wright (Carydoras trophy); J, Mr D. J. Mackay (Bullseye trophy for rasboras); K, Mr D. Pratt; L, Mrs J. Roper (London Cup); M, Mrs S. Hodge (Cassie trophy); Ns-o, Mrs V. Marsh; No-1, Mrs M. Netherell.

O, Mr P. W. Castle (D. Pratt trophy); P, Mr M. C. Gasking; Q, Mr S. Mason (Olson Silver for swordtails); R, Mrs D.

Crutchbourn; R, Mr D. King (Stan Giles Cup for best mollie); T, Mr R. Newman (Crutchbourn trophy).

U, Mr K. Bristow (Tony Bullock trophy for best coldwater fish); V, Mr V. R. Hine; W, Mr V. P. Vowey (Tropaeurus trophy); Xv-o, Mr D. King (Keith Smith trophy for best breeders team); Xv-1, Mr A. Blake; Z, Mr C. Rolfe.

ABOUT 1800 members of the public attended the **DERBY REGENT AS** Open Show, which was opened by the Mayor of Derby, Councillor J. J. Carty, who was presented with a plaque to commemorate the occasion. The British Marine AS and the FBAS were represented there and judges Mr K. Colton, Mr A. Deakin, Mr B. Inman & Mr S. A. Abdy had the task of deciding on the award winners from 615 entries. The Eric Shaw Cup for best fish in show went to Mr Hill (Alfreton). The Ernie Wilkinson trophy for largest first-award fish to Mr Hill also. The Derby Regent Tankard for best smallest fish to Mr Thomas (Lucas). The Terry J. trophy for furnished aquaria to Mr Thorne (Northwich), the Tilly Bachelore trophy for best guppy to Mr H. Mason (N. Staffs.), the Derby Regent trophy for best a.o.v. to Mr R. Harlow (Derby Regent) and the Dave Gibson Cup for best anabantid to Miss J. Gillane (Buxton). Mr Kinsey (Ind. London) won the Derek Robertson Cup for best large cichlid, and the King British trophy for most individual entries was awarded to G. & S. of Northampton.

Guppies, Mr A. Maffs (N. Staffs.); Mollies, Mr J. Egan (Sherwood); Platies, Mr Heath (Derby Regent); Swordtails, Mr F. Cooke (Huddersfield); Barbs, small, Mr & Mrs Jewell (D. Regent); Large, Mr S. Hill (Alfreton); Characins, small, Mr & Mrs Jewell; Large, Mr Kinsey (Ind. London); Fighlers, Ashton & Ackinson (Chatterfield); Anabantids, small, Mr B. Bader (Sherwood); Large, Miss J. Gillane (Buxton); Cichlids, dwarf, Mr & Mrs Thorne (Northwich); Large, Mr Kinsey; Angils, Mr K. Sax (D. Regent).

Sharks & Eels, Mr Whitlow (Dakerston); Loaches & botas, Mr K. Thomas (Lucas); Corydoras, Mr T. Smith (Sheffield); A.o.v. catfish, Mr Masley (Ind. J. Kellish); Mr S. Hill; Misonos and danios, Mr & Mrs Bladen (Cresswell); Rasboras, Mr & Mrs Downing (Sherwood).

Livebearer, pairs, Mr Stibbins (Grantham); Breeders, Mr G. Thickbroom (Castleford); Egg-layer, pairs, Mr & Mrs Mason (Chatterfield); Breeders, Mr & Mrs Thorne (Northwich); A.o.v. tropical,

Mr R. Haslow (D. Regent), A.V. juniors, Master A. Robinson (Gouldenfield), A.V. novices, Miss J. Shipman (Greenham), A.V. collectors, Mr & Mrs Howard (Shobdon), Devonshire aquaria, Mr Thomas (Northwick).

MIR G. AXE won the award for the best fish and the best coldwater fish in the **TROWBRIDGE & DA & PS** Open Show with a common goldfish. The best tropical fish, an *H. pulcher*, was owned by Mr H. Strange. Class winners were:

Bulls, Mr S. Beebe, A.O.V. barbs, Mr D. Phippen, H. & H., Mr M. Stanger, A.O.V. characins, Mr R. Hyde, Angels, Mr M. Patrick, Cichlids, Mr J. Bagg, Kribia, Mr J. Fisher, A.O.V. cichlids, Mr H. Mease, Fighters, Mr S. Daniels, A.O.V. labrids, Mr S. Green, Killies, Mr H. Mease, Catfish, Mr J. Edwards, Corydoras & Z. Bredis, Mr F. Lewis, Rasbora, Mr C. Russell, Danios, Mr M. Barber, Borna etc., Mr J. Wheeler, A.O.V. tropical, Mr T. Fowler.

Special prizes, Mrs Cass, Guppies, minis, Mr A. Heath, Yemah, Mr W. Burton, Swordtails, Mr S. Daniels, Platys, Mr L. Little, Saffio & volfinis, Mr S. Bittel, A.O.V. mollies, Mr A. Holmes, Common goldfish, Mr G. Ann, Sticklebacks, Mr G. Hall, A.O.V. coldwater, Mr P. Lewis, A.O.V. fancy goldfish, Mr J. Russell, Egg-layer team, Mr J. Webb, Livebearer team, Mrs Martin.

MID-SUSSEX AS are already planning for next year's Fish Exhibition after the success of the one they have just held. Some 1500 people attended and great interest in the hobby was aroused. Among the wide variety of fish on display were 'Oasis' a 2½ in. *Ophiocentrus noronae* and 'Herbert', a 1-ft. snakehead. The setting-up period had its excitement when a large black shark being transferred to a community tank took to the air and jumped clean over a 7 ft. high stand. Not long afterwards the fish took off again. The club were also hosts to **BRIGHTON & SOUTHERN AS** for the return leg of the 'Over the Downs' competition. It was judged by Mr Ken Nutt and Mid-Sussex retained the trophy by 78½ points overall. Best fish in the show was a *Boria modesta* entered by Mr & Mrs Burtles and awarded 84 points.

THERE was a good entry of 90 at the March meeting of the **MANCHESTER SECTION** of the **FANCY GUPPY ASSOCIATION** at which Mr H. Baldwin gained the best in show award with a short dorsal veil. (Best female award, Mr M. Delingpole, Birmingham; best breeders, Mr T. Hallett with matched pairs of bottom swordtails.) Fewer entries in April were doubtless due to the Edmonstone Section holding their show at this time but the standard was still high. Best in show and best breeders went to Mr T. Hallett with his bottom swordtails again. Mr A. Charlton won best male and best female went to hard-working show secretary Mr J. Hesketh. In May the show bench was well and truly loaded with 106 entries because of a splendid turn-up of members from the Lancaster and

Birmingham sections. It was with great pleasure that the best in show award was made to Mr L. Kirlew making his trip from York all worth while. Best male went to Mr J. Snowden and best breeder to a master breeders team of albinos exhibited by Mr M. Delingpole. Members were highly entertained by a twenty questions session with Malcolm Delingpole, Jeff Hutchings, Fred Campbell and Ray Young answering questions. Meetings are held on the first Sunday of every month, 2.30 p.m., Longsight Hotel, near the entrance to Belle Vue, Manchester.

MR LEWIS DOUBLEDAY was congratulated on winning the **FBAS** Marine Tropical trophy by fellow members of the **SOUTH WESTERN GROUP** of the **BMAA**, but he himself thought that the fish that took the first was hardly good enough to enter the Supreme Championship competition at this year's Aquarium Show, and that it would have been better had the class been judged by marine judges. The Group plan to take their stand to the Exeter AS show and may possibly purchase a pump to be used at shows and retained as a stand-by for member's emergencies.

THE WEST MIDLAND GROUP of the **BMAA** went on their first venture with the Wulfrun Sub Aqua Group to a small inlet near Morfa Nefyn on the north Wales peninsula. Unfortunately the terrible weather prevented the collection of specimens. Another outing, with the Endeavour Deep Sea Group, was made to Aberystwyth but similar weather prevented fish being caught from the boat. However, the catches from the rock pools were plentiful and varied and included *Ciliata muscula*, *Pholis gunnellus*, *Taraxia bubalis* (including ♀ in fry), plentiful crabs, two types of sponge, various coloured headlets and the common prawn and many others.

THE EAST DULWICH A.S. third open show was a great success with 850 entries received from 30 clubs. The Society thanks Mr B. Baker, Mr C. Brown, Mr E. Nicholl, Mr J. Stillwell and Mr H. Towell, the **FBAS** judges who officiated.

Award winners were: AS (tropicals) (Newwood Cup, 74); 1, Mr K. Appleyard (74); 2, Mr D. J. Crockett (74); 3, Mr B. Basson (69). B: 1, Mr D. W. Armour (81); 2, Mr T. F. Butler (80); 3, Mr R. Brooke (76). Ba (large barbs): 1, Mr A. Kinsey (70); 2, Mr D. Dare (76); 3, Mr J. W. Gwynn (74). C: 1, Mr J. A. Pollard (81); 2, Mr T. R. How (84); 3, Mr P. W. Corrie (81). Ca (Hypoclinemus, Hemigrammus and Chelodons): 1, Mr R. Bowers (81); 2, Mr M. Stanger (81); 3, Mr P. Coyle (81). D: 1, Mr A. Kinsey (Dulwich Best, 87); 2, Mr B. Baker (84); 3, Mr D. J. How, 81). Ds (Apistogrammas etc.): 1, Mr B. F. Rowley (84); 2, Mr R.

Bowes (81); 3, Mr R. Wright (82). E: 1, Mr B. Wright (Cooney Aquaria Cup, 87); 2, Mr D. Adams (86); 3, Mr P. Coyle (76). Es (Starnesia lightness): 1, Mr L. J. Bradley (75); 2, Mr P. W. Coyle (77); 3, Mr Watson (74). F: 1, Mr and Mrs Pagan (I.D.A.S. trophy for best fish in show and Longsight Challenge trophy, 84); 2, Mr M. Collins (84); 3, Mr B. Cooper (74). G: 1, Mr J. M. London (Brookley Aquaria Challenge shield, 78); 2, Mr R. Wright (78); 3, Mr L. J. Bradley (78). H: 1, Mr K. Dryden (Castle Cup, 84); 2, Mr Sutton (81); 3, Mr P. A. Moore (78). I: 1, Mr F. G. Marsh (81); 2, Mr S. Mason (78); 3, Mr A. Kinsey (78). K: 1, Mrs M. Natherall (78); 2, Mr J. M. Wood (78); 3, Mr P. A. Moore (77). L: 1, Mrs A. Wood (76); 2, Mr B. Basson (78); 3, Mr R. Bowers (77). M: 1, Mr R. Daley (84); 2, Mr H. F. Miles (81); 3, Mr D. Adams (77). N: 1, Mrs. 9004998); 2, Mr R. Wright (Greenwich Cup, 78); 3, Mr P. J. Cooper (77); 3, Mr K. Quessell (76). No-1 (pairs, livebearers): 1, Mrs M. Quessell (78); 2, Mr S. Adams (78); 3, Mr A. Baker (74). O: 1 and 2, Mr Coyle (86, 74); 3, Mr A. Wood (78). P: 1, Mrs M. Natherall (78); 2, Mr P. Coyle (74); 3, Mr J. Mease (74). Q: 1, Mr S. Mason (Kendrick Cup, 78); 2, Mr K. E. Saylor (77); 3, Mr P. O'Hara (76). R: 1, Mrs D. Crankshaw (FBAS trophy, 80); 2, Mrs P. O'Hara (76); 3, Mrs D. Haver (78). S: 1 and 2, Mr P. A. Moore (All Gale Cup, 76, 78); 3, Mr J. M. London (77). T: 1, Mr B. Basson (76); 2, Mr R. Bowers (78); 3, Mr H. Watts (75).

U: 1, Mrs M. Dudley (Belony Goldfish trophy, 78); 2, Mr K. Adams (78); 3, Mr K. Appleyard (74). V: 1, Mr G. Wason (74); 2, Mr R. Bick (71); 3, Mrs J. Bellamy (84). W: 1, Mr V. P. Verner (84); 2, Mrs D. J. Mackay (84); 3, Mrs M. Douglas (77). Xb-m: 1, Mr B. A. Orr (I.D.A.S. Certificate Cup, 78); 2, Martin K. Basson (78); 3, Mr W. K. Goodwin (78). Xc: 1, Mr H. Watts (78); 2, Mr S. Mason (77); 3, Mr R. Pock (77). Z: 1, Mr P. O'Hara (74); 2 and 3, Mr M. Wood (74, 74).

THE MEDWAY trophy for the competitor with the highest number of points was awarded to Mr R. Bowers (Independent) at the **MEDWAY A.S.** open show. Mrs V. Marsh of Faling won the best fish in show award from the 500 entries. The Barracough trophy went to Mr D. Adams (Bethnal Green).

R: 1, Mr Bick (Barb trophy, Thames); 2, Mr J. Bellingham (Tombadge); 3, Mrs Crankshaw (Tombadge). Ba (large barbs): 1, Mrs R. Coyle (FBAS trophy, Independent); 2, Mr J. Bellingham; 3, Mr A. Kinsey (Ind.). C: 1, Mr T. Hine (Tombadge); 2, Mr P. Coyle; 3, Mr J. Bellingham. Ca (Hypoclinemus etc.): 1, Mr R. Bowers; 2, Mr J. Richardson (Ranunculus); 3, Mr D. Adams (Bethnal Green). D: 1, Mrs Bellingham (Strand Tropical trophy); 2, Mr K. Adams (S.A.S.); 3, Mr R. Baker (Tombadge). Ds (angels): 1, Mr D. Dare (Ind.); 2, Mrs Natherall (Overseas); 3, Mr P. O'Hara (Thames). Ds (short cichlids): 1, Mr R. Bowers; 2, Mr S. W. Appino (Ind.); 3, Mr and Mrs Pagan (Tombadge). E: 1, Mr D. Adams; 2, Mr A. Kinsey; 3, Carl Marsh (Medway). Es (lightness): 1, Mr R. Bowers (Fighter trophy); 2, Colin Wood (N. Kent); 3, Mr S. W. Appino (Ind.). F: 1, Mr and Mrs Pagan (Tombadge); 2, Mr D. Dare; 3, Mr A. J. Clark (Medway). G: 1, Mrs Lovgrove (Thames); 2, Mr T. Crankshaw (Faling); 3, Mr J. London (Thames). H: Mrs V. Marsh (Faling); 2, Mrs Natherall (Overseas); 3, Mr P. A. Moore (Apex). I: 1, Mr B. George (Mid Kent); 2, Mr L. Derrick (Croydon); 3, Mr F. Marsh (Faling). K: 1, Mr R. Bowers; 2, Mr P. Moore; 3, Mrs Natherall. L: 1, Mr J. Patten (N. Kent); 2, Mrs Bellingham; 3, Mrs Wood (Tombadge). M: 1, Mr D. Adams; 2, Mr A. Kinsey; 3, Mrs Garrod (Ranunculus). N: Mrs Lovgrove (pairs); 1 and 2, Mr D. Adams; 3, Mr P. Coyle (N. Kent). No-1 (livebearers

(winner), 1. Mr. S. Adams (Bethnal Green); 2. Mr. D. Adams; 3. Mr. P. Carlin.
Q: 1. Mr. P. Cattle (Guppy trophy); 2 and 3. Mr. R. Brown, P. 1, Mr. D. Snow; 2 and 3. Mr. R. Brown, Q: 1 and 2. Mr. P. O'Brien (Thurrock, sword trophy); 3. Mr. F. Wright (Thurrock); R: 1 and 2. Mrs. Crossland; 3. Mr. D. Crowe (Fleeton); R: 1 and 2. Mr. P. Meyer; 3. Mr. B. Appin.
T: 1. Mr. S. Adams; 2. Mr. A. Kinsey; 3. Mr. B. Parker. **Xm** (egglayers breeders): 1. Mr. and Mrs. Egan (Blackpool trophy); 2. Mr. A. J. Clark; 3. Colin Wood. **Xo** (livebearers breeders): 1. Mr. J. Parker; 2. Mr. J. Marshall (Sharnbrook); 3. Mrs. Fagan. **V:** 1 and 2. Mr. S. Adams; 3. Mr. N. Woodward. **W:** 1. Mr. B. Parker; 2. Mr. P. Carlin; 3. Mr. N. Woodward. **X:** 1. Mr. J. Marshall (Plant trophy); 2. Mr. P. O'Brien; 3. Mr. C. Elliott (Sharnbrook).

AT THE YORK & DAS OPEN SHOW
 Mr. R. Dyan of Blackpool won the best fish in the show with his entry in the breeders egglayers class. Mr. J. S. Hall from Airedale won the award for the exhibitor with most points. Winners of the classes were:

Guppies: Mr. R. Shanks (section winner, Mount Pleasant), swordfish; Mr. F. Cooke (Blackburn), section; Mr. J. (egg section winner), Sharnbrook; guppies, Mr. F. Ward (Doncaster), a.o.v. livebearers, Mr. J. S. Hall (Airedale), Barb, small, Mrs. Rhodes (Foss Stn); large, Mr. R. Clarke (section winner, Sharnbrook), Charstein, small, Mr. & Mrs. Blades (section winner, Crewell); medium, Mr. Westall (Preston); large, Mr. E. Williams, Ransome, Jans, winners, Mr. A. S. Allison (YDAB), sharks & rays, G. & M. Thibbott (section winner, Wallasey), section winners, Mr. & Mrs. Law (section winner, Cleveland), Ambassadors, small, Mr. J. A. Whittier (section winner, Airedale); large, Mr. Niswonger (Preston), Cardinals, dwarf, Mr. C. Nackle (Sharnbrook); large, Mr. C. Green (section winner, Blackpool); small, Mr. W. Downing (Sharnbrook).
Corydoras: Mr. A. S. Allison (YDAB), inch & inch, Mr. B. Bailey (Sharnbrook), a.o.v. trophy, Mr. & Mrs. Staley (section winner, Gropes), Toroberry, Mr. A. Crossin (section winner, Wallasey).
Breeder livebearers: Mr. J. S. Hall (section winner), Egglayers, Mr. R. Dyan (section winner), Matched pairs, livebearers, E. W. & J. C. Robinson (section winner, Cleveland), Egglayers, Mr. S. Bailey (section winner, Sharnbrook), Common goldfish, Mr. J. S. Hall (section winner), Juncy goldfish, S. & A. Thomas (Crawford), shubunkins, Mr. J. S. Hall, a.o.v. coldwater, Mr. Whittier (Airedale), Jans, A. C. Rhinar (section winner, Wallasey), A. S. proved female, Mr. D. Pritchard (section winner, Wallasey), a.o.v. tropical, Mr. Singleton (section winner, Elsworth), Furnished show jms, Mrs. Hardman (section winner, Cleveland).

THE buffet dance held at Bedworth by the Management Committee of the **MIDLAND ASSOCIATION OF AQUATIC CLUBS (MAAS)** to foster social and educational activities within the Association was a great success. Presentations were also made to members who had passed the examinations for the Class A and Class B Judges Course. Of the 50 candidates who took the Class B course, 20 were successful. These were Mr. F. Ash, Mr. N. Furness, Mr. P. Massey, Mr. G. Roberts, Mr. P. Shaw, Mr. J. W. Walker, Mr. R. M. Wright, Mr. P. Clements, Mr. J. Goodman, Mr. R. Nicholls, Mr. J. Sanders, Mr. J. Tranter, Mr. R. W. Whitfield, Mr. D. Yates,

FEDERATION



NEWS

Championship Class Results: Fish for the 1972 Supreme Championship

DELEGATES to the June Assembly of the Federation admired the new trophy of unique design presented by East London A & PA for award in a specialist breeder's class. The Federation's new Show Fish Guide '72 was available for the first time at the Assembly.

Judges of the Supreme Championship at The AQUARIUM SHOW '72 are to be Mr. B. Baker FBAS and Mr. J. Stillwell EBAS; judging of the Championship fishes is to be carried out earlier this year so that results will be available when the Show opens.

1972 Championship Class Results

| | | |
|-----------------|------------------------------------|-----------------------------------|
| Class Ia | Barbs (Midway A.S. Show) | Mrs R. Coyle (Independent A.S.) |
| Class D | Cichlid (Tottenham & D. A.S. Show) | Mr A. Kinsey (Independent A.S.) |
| Class Db | Cichlid (Stockton-on-Tees Show) | Mr I. R. Heppinstall (Castleford) |
| Class G | Catfish (Thurrock A.S. Show) | Mr D. Lamborne (Rochampton) |
| Class Q | Swordtails (Rusnymede A.S. Show) | Mr S. Mason (Rochampton) |
| Class R | Platy (E. Dulwich A.S. Show) | Mrs D. Crickshank |

Forthcoming Championship Class Shows

| | | | |
|-----------------|-------------------------------------|-------------|-----------------------------|
| 2nd July | Exeter & D. A.S. | Yb* | Coldwater marine |
| 8th July | Basingstoke & D. A.S. | Ch* | Nannostomus & Poecilibrycon |
| 22nd July | Port Talbot & D. A.S. | W* | a.o.v. Coldwater |
| 3th-12th August | Portsmouth A.S. | Eb* | Colisa etc. |
| 4th August | Tonbridge & D. A.S. | L* | Loach |
| 12th August | Bracknell A.S. | I* | Risora |
| 26th August | Plymouth A.S. | No-t | Pairs |
| 16th August | S.P.A.S.S. | U* | Singletailed goldfish |
| 2nd September | Bethnal Green A.S. | O* | Guppy male |
| 3rd September | Wellingborough & D. A.S. | B* | Barbs |
| 10th September | Weymouth & D. A.S. | Xb-m | Breeders |
| 16th September | Hounslow & D. A.S. | F* | Egglayers toothcarps |
| 24th September | Torbay A.S. | Ca* | Hypessobrycon etc. |
| | Washington A.S. | Da* | Angels |

* Winners of Federation Championship Trophies in classes for single fish automatically become eligible for the Supreme Championship Trophy Competition (to be staged at The AQUARIUM SHOW '72 at the Royal Horticultural Society's Old Hall, London, S.W.1, 27th-29th October). Six awards are made at this Competition.

Mr D. L. Edwards, Mr R. Marsden, Mrs P. Nicholls, Mr R. Shakespeare, Mr R. Trippas, Mr B. Woodward. Class B judges who passed the examination for A Class judges were: Mr G. Parker, Mr Ralph Shakespeare, Mr A. Skinner, Mrs A. Walker, Mr P. Skinner.

MAAS run these courses for judges to help improve the standards of the hobby; and also provide their judges with the latest information to help them judge properly. A speakers panel of 26 is also in operation to

help and provide information to aquarists. Please contact P.R.O. Mr P. J. Clements, 55 Fairak Avenue, Parkside, Stafford for details.

WEATHER was reasonable kind on the day of the **BLAKEBOROUGH AS** first Open Show and there were 357 entries received from 21 societies. The best fish in the show was a diamond tetra entered by Mr & Mrs Blades of Crewell A.S. Class winners were:

Guppies, Mr & Mrs Goss (Castleford);

CYMRU NATIONAL AQUARISTS ASSOCIATION announce the following arrangements for their show on 9th-13th August. Fish can be housed on the evening of the 9th and all day on the 10th. Stewards will be on duty day and night. This comparatively new Association asks all clubs for their support. A certain number of tanks will be available but, since under FBAS rules only flat-titled containers can be used, club members are asked to supply their own tanks. The next meeting of the C.N.A.A. will be on 20th July at the Gabalfa Community Centre, Gabalfa, Cardiff, at 1.30 p.m. and visitors are welcomed.

swordtails, Mr F. Cooke (Huddersfield); shaty, Mr D. Stood (Swillington); mollies, Mr P. Harrison (Sherwood); a.o.v. livebearers, Miss & Mrs Bealby (Huddersfield); Characins, small, Mr & Mrs Blades; large, Mr D. Kennedy (Keighley); Barbs, small, Mr A. Barrett (Widnes); large, Mr & Mrs Blizard (Sheffield); Cichlids, small, Mr & Mrs Blades; large, Mr B. Stephenson (Sherwood); angels, Mr E. Smith (Sheffield); Anabantids, Glosa, Mr J. A. Whitley (Airedale); lightners, Mr & Mrs Toyne (Sheffield); a.o.v. Mr D. Stood (Swillington); Danios, Mr T. Smith (Sheffield); minnows, Mr E. Smith (Sheffield); rainbow, Mr W. Downing (Sheffield); Sharks, Mr & Mrs Cohen (Castleford); Flying fox, Mr & Mrs Gawn (Castleford); Toothcarps, bottom, Mr J. Mowley (Keighley); top, Mr F. Cooke (Huddersfield); Corydoras, Mr Barton (Sheffield); a.o.v. catfish, Mr & Mrs Gawn; bottom, Mr & Mrs Blizard.

Fairs, egglayers, Mr & Mrs Blades; livebearers, Mr & Mrs Blades; Breeders, livebearers, Mr R. Dyson (Blackpool); Goldfish, common, Mr & Mrs Toyne (Sheffield); fairy, Mr J. S. Hall; a.o.v., Mr J. S. Hall; Not listed, Mr D. Stood (Swillington). Furnished mini-jars, Mr B. Megson (Airedale).

DUKERIES AS fourth Open Show proved to be the best to date. The six judges, Mr A. Deakin, Mr D. Dunford, Mr J. Robertson, Mr G. Rhodes, Mr G. Sibson and Mr J. Hazard (trainee judge) had 500 entries from 26 societies to consider. Class winners were:

Livebearers, Mr S. Harrison (section winner, Whitwood); guppies, Mr & Mrs Gawn (Castleford); Cichlids, Mr J. A. Whitley (Airedale); dwarf, Mr H. Kuhn (section winner, Lincoln); Anabantids, Mr J. H. Whitley (section winner, Airedale); lightners, Mr A. Mannion (Widnes); Characins, Mr & Mrs Downing (Sherwood); small, Mr & Mrs Blades (Common), section winner and best fish in show; Barbs, large, Mr R. G. Clark (section winner, Sherwood); small, Mr & Mrs Josie (D. Rogers); Toothcarps, Mr & Mrs Blades (section winner); Catfish & loach, Mr & Mrs Shipley (section winner, Gole); Sharks & fairs, Mr G. Thickbroom (section winner, Wellbeck); Rainbows & minnows, Mr & Mrs Blades (section winner); a.o.v., Mr R. Harris (D. Rogers).

Coldwater, Mr J. A. Whitley; Fairs, livebearers, Mr & Mrs Blades; egglayers, Mrs Haptonstead (section winner, Castleford); Breeders, livebearers, Mr G. Thickbroom; egglayers, Mr J. Wright (Albion), section winner.

A VERY enjoyable evening was experienced by club members taking part in the inter-society show held

by **PRIVATEERS AS**. A successful auction was held and a pie and pea supper enjoyed. The judge was Mr P. Moorhouse of Huddersfield who made the best in show award to a sun bass shown by Mr J. S. Hall of Aireborough. Class winners were:

Livebearers (25), Mr D. Stood (Swillington); Barbs (15), Miss A. Gregory (Nelson); Characins (15), Mr R. Smith (Keighley); Cichlids (15), Mr D. Truby (Nelson); Anabantids (25), Mr P. Reynolds (Swillington); Catfish, loach & botia (15), Mr D. Stood (Swillington); Carps & minnows (15), Mr Greenwood (Nelson); Sharks & fairs (15), Mr R. Whitaker (Privateers); Toothcarps (5), Mr J. Hart (Keighley); a.o.v. (5), Mr D. Stood (Swillington); a.v. breeders (5), Mr Birch (Swillington); Fairs (15), Mr J. A. Whitley; Coldwater (5), Mr J. S. Hall.

A TOTAL of 32 clubs exhibited fishes at the fourth annual Open Show of **NORTHWICH & DAS** from Derby, Buxton, Stone and Clontarf, west to Hoylake, Wrexham, Colwyn Bay and Merseyside, north to Blackpool and Morecambe Bay and east to Barnsley, Sheffield, Doncaster and Huddersfield. 500 entries were judged by Mr Ian Woods and Mr Mike Jones of Bury. The best fish in show award was made to an *Ep. aismensis* entered by Mr and Mrs Kennedy (Valley) who received the Thorne trophy. The Russell Allen trophy for best livebearer went to Mr and Mrs Mitchell of Blackpool and the Bendy trophy

for best breeders to Master A. Moss of Huddersfield. Mr K. Ankers of N. Staffs, took the Hyland trophy for best catfish. North Staffs. were the Society with most awards (Interpet trophy) and Mr and Mrs L. Thorne the Northwich members gaining the most points and the King British trophy. Class winners were:

Guppies, Mr & Mrs Mitchell (Blackpool); swordtails, Mr C. Buckenham (Gillham); mollies, Miss A. Gregory (Nelson); platys, Mr L. Kaye (Top Ten); Barbs, small, Mr & Mrs Josie (D. Rogers); large, Mr B. Pearson (Northwich); Characins, small, Mr & Mrs Josie; large, Mr P. T. Richardson (Merseyside); lightners, Mrs A. Lord (Valley); anabantids, small, Clark Brothers (N. Staffs.); a.o.v. anabantids, Miss A. Gregory (Nelson); Angula, G. W. & A. R. Jackson (Belle Vue); cichlids, dwarf, Miss J. Gullane (Barnsley); a.o.v., Mr H. Williams (Crewe); Danios & minnows, Mr & Mrs L. Thorne (Northwich); rainbows, Mrs A. Lord (Valley); Sharks, Mr J. A. Curton (Lancs); flying fairs, Mr & Mrs Kennedy (Valley); Corydoras, Clark Brothers; a.o.v., Mr K. Anker (N. Staffs.); loaches and botias, Mr K. Thomas (Lancs); Toothcarps, Mr B. Ashford (B.K.A.); a.o.v. tropical, D. & R. Standon (Loyne).

Pair, livebearers, Mr L. Landfester (Blackpool); egglayers, Mrs C. Peichard (Wrexham); Breeders, livebearers, Master A. Kaye (Top Ten); egglayers, Master A. Moss (Huddersfield); Common goldfish, Mr & Mrs Mitchell (Blackpool); fancy goldfish, Mr & Mrs Toyne (Sheffield); a.o.v., Mr A. C. Harris (Nelson); Juniors, livebearers, Master A. Moss (Huddersfield); egglayers, Master A. Moss; Furnished mini-jars, Mr & Mrs L. Thorne (Northwich).

Entente Cordiale at Hendon

WHEN first published the item in March announcing that members of the Cercle Aquariophile de Nancy were planning a weekend visit to this country and would like to make contact with an aquarist society here who might perhaps be holding a club meeting during their visit, it was unforeseen that any society would contemplate making the occasion so memorable as did the members of **HENDON & DAS**. The chairman of the FBAS and its officers, together with visitors from other societies and organisations, were invited by Hendon to meet the French guests in a special hotel meeting room booked for the occasion. Mr Tom Glass had been acting as liaison officer for some weeks and had arranged for the guests to be ferried by car from the nearest Underground station. When the 20 visitors from Nancy arrived they were greeted by typical French accordion music to make them feel at home. Great care had been devoted to the programme to obviate the language difficulty, and a skilful use was made of film as an international medium. Mr Henry White's speech of welcome was accompanied by a very amusing series of slides of England and France and Mrs B. Calrow welcomed the visitors in

fluent French. The evening's programme included four short talks illustrated by film and slides. Mr Keith Purbrick spoke on characins, Mr B. Mould on cichlids, Mr D. Allison on a spawning of *Lozixaria* and Mr Tom Glass on killifish. During the break for refreshments Hendon members and guests were able to meet the party from Nancy, which had been organised by Dr D. Terver and was led by Professor M. Conde, director of the Musée de Zoologie, where it is to be found one of the biggest and most delightful public aquariums in Europe.

At the end of the meeting, chairman of the FBAS, Mr R. Esso, thanked Hendon members for their splendid efforts and Professor Conde expressed the deep thanks of his party to Mr Roy Skipper, president of the Society, for this gesture towards greater co-operation in the European fishkeeping community. The guests from France then presented Hendon with a magnificent moulded solid glass abstract fish for use as a trophy. During their stay here the French party visited the London Zoo Aquarium and Whipstade Zoo among other places of interest.

MRS Rosa Brewer of **HOUNSLOW & D.A.S.** reports on recent club activities: 'Members had the pleasure of listening to a very enjoyable and instructive talk given by Mr Dick Mills recently. The subject was water chemistry and Mr Mills demonstrated various methods of water testing. Table shows continue to be well supported and members are taking a keen interest in competition with other societies; at recent open shows several card awards and trophies have been won by members. Society secretary Mr Bob Nelhams organised the annual Spring Dance with his usual success and other outings are on his programme for the coming months. Show manager Mr Eric Sheppard is well ahead with the organisation of the Society's open show on 16th September. A very large number of entries are expected in all classes at this, one of the largest open shows in the west London area. Visitors are welcome to meetings on alternate Wednesdays, St Stephens Church Hall, Whitton Road, Hounslow.

Badge of the Month



FOUNDED in November 1970, the **British Marine Aquarists' Association** has pursued the furtherance of the marine hobby through the formation of local groups, through the publication of a Newsletter and, shortly, a publication to guide beginners in the marine field, and by the formation of a Show Standards Committee that has devised a pointing system (already in use at an Open Show) for judging single marine fishes. Secretary Mr D. Horton, 125 Lowlands Avenue, Streetly, Sutton Coldfield, Warwickshire, will be pleased to supply details and membership forms (s.a.s. please).

BLACKPOOL & FVLDE AS are distributing their *Open Show (6th August)* 50-page Programme free. Please send a 3p stamp for postage to show secretary Mr G. Howard, 56 Stamford Avenue, Blackpool (phone 42676) to receive your copy.

In Brief . . .

... THE trophy for best fish in show at the **WHITLEY BAY A.S.** jar show for barb and sharks was won by Mr R. Robinson. At the following meeting the trophy was won by Mr G. Emmerton (classes, danios and coldwater). A quiz slide show on tropical fish was won by Mr M. McCrystal, whose prize for most points was a medallion.

... NEW fish-pond owners among **ILFORD & D.A. & P.S.** members took heart from the lecture on fish pond construction and maintenance given by Mr H. Berger. Excellent colour slides of existing ponds from the Society's pond competition over the years pinpointed the improvements that come with pond maturity and age. Mr W. Rowe has been very successful in table shows, winning a.v. livebearer, a.v. characin, all awards a.v. fancy goldfish and all awards a.v. platy. Mrs P. Reade won the a.v. egg-layer class and Miss J. Frostick the a.v. swordtail. The Society have been well pleased by the public response to their contribution to the exhibition staged by the Arts and Crafts section of the Borough of Redbridge.

... **SITTINGBOURNE & D.A.S.** 1972/3 programme started at the end of April at Westlands School, Sittingbourne with a table show for sharks, catfish and loaches won by Mr J. Bennett, Master L. Bean and Master L. Bean respectively. Several new trophies have been donated by eminent club members.

... ANNUAL trophy winners at **COLWYN RAY & DAS** are: Aquarist of the Year, Mr G. Pates (2, Mr S. R. Bell); Table Show trophy, Mr S. R. Bell (2, Mr H. Towne; 3, Mr R. Noble).

... NEWLY-formed **SLOUGH & DAS** flourishes. Over 30 members regularly attend meetings at Friends Meeting House, Ragstone Road, Slough, third Wednesday in month, 8 p.m. On 19th July Mr R. Winter will talk on amphibians and reptiles. Mr A. N. Young was awarded the Committee's shield for best fish of the year.

... **HORSFORTH AS** next meeting night is the first Tuesday of the month; new members are welcome and should ring secretary Mr P. Smith at Leeds 67512 for details.

A recent slide show and talk on livebearers by Mr Ray Hampson was followed by a table show that attracted more fish than for several months.

... **MR BILL GORWILL**, of Cardiff delighted members of **YATE & DAS** with his illustrated talk on cichlids and his expert comments on Lake Malawi cichlids.

... THE audience at a recent meeting of **SMETHWICK & DAS** found speaker Mr E. Woodward's talk on his experiences breeding rosy barb very enlightening. The a.v. barb class was won by Mr B. Walker and the first three places in the kille class by Mr J. Harris.

... **KEIGHLEY AS** have devoted a meeting to discussion groups covering different aspects of setting up a new tank—the fish most suitable for a beginner and equipment needed—so that new and junior members could benefit from the ideas of more experienced aquarists.

... 'ALWAYS a good evening at Ripple Road School, Barking, on the first and third Friday of each month' promise **EAST LONDON & DPAS** such as was enjoyed at the first inter-club meeting of the year when Mr Brian Baker lectured on arabanids and there were 84 entries in the table show for platys, fighters and barb. East London won in a close finish by 11 points, Thurrock 10 and Southend 9.

... **UXBRIDGE & DAS** have enjoyed an impressive list of activities this year with lectures by Mrs P. Baynton (guppies), Mr R. Forder (plants), Dr R. List (foods and diseases), Mr K. Purbrick (livebearers) and Mr R. Armstrong (killies), plus table shows, their Open Show and three inter-club shows (losing those with Becknell and Runnymede and winning against High Wycombe).

... **MR D. HARDING** of **NEW FOREST AS** has won the society's Tropical Points trophy and Mr L. Menhennet the Coldwater Points trophy.

... COMPREHENSIVE coverage of characins and marine fishes by Mr Frank Tomkins and Mr B. Martin have given **INDEPENDENT AS** members a thorough grounding in looking after these species. Mr Phil Cottle has won the members knock-out competition (2, Mr Tim Lanchlan).

... **RHONDDA AS** won their inter-club competition with **NEWPORT AS** after hearing a talk by the president of Rhondda, Mr H. Thomas, on his fishkeeping experiences. Mr M. Erdicot (Newport) won the egg-layers class and Mr D. Richards (Rhondda) the livebearers.

... **HASTINGS & ST LEONARDS AS** have been engaged in learning about the resources of their own country with a lecture from biologist Mr J. R. Chandler on the work of the Sussex River Authority and a visit to the local reservoir and water-treatment works conducted by Mr G. Coleman of the Hastings Water Undertaking. Mr P. Ginger (FBAS Judge) gave an impressive lecture on barbs. A battle with **TONBRIDGE AS** was lost by 18½ points; judge Mr C. West (FBAS) suggested that battles were only won with larger swords.

... **BETHNAL GREEN AS** won their inter-club table show against **ROEHAMPTON AS** by 22 points to 17. FBAS judge Mr F. Tomkins awarded first placings to Mr R. Goodson (a.o.s. tropical egg-layer), Mrs Sybil Hedges (labyrinth), Mr Peter Arnould (tropical catfish), Mr Ben Martin (characins). Guest speaker Mr R. D. Eason, chairman of the FBAS, delighted members with his wide-ranging talk on cold-water fish. Many aspects of fish-keeping were covered and somewhat quite naturally included lions and sex!

... **THE Fish Exhibition at LITTLEHAMPTON & BOGNOR AS** have staged has been invaluable in arousing members' enthusiasm and giving them something in which everybody, beginner or experienced aquarist, has been able to play a part. An influx of new members has been able to help make a large number of all-glass aquaria for the Exhibition and to enjoy an auction at which the number of surplus items produced for sale astounded the Committee organisers.

... **NEW** pollutants such as silage liquor and fertilisers were hazards in restocking rural stretches of water, explained Mr M. Arney of the Bristol Avon River Authority during an interesting lecture to **BRISTOL AS**.

... When **WEYMOUTH AS** were hosts to **DORCHESTER** the result of the inter-club competition was a dead heat. Judge Mr Jack Jeffries of Bourne-mouth AS, marked 24 fishes and awarded each team 864 points. Dorchester are holding the trophy until next year. Young Paul Taylor, just 7 years old, won the junior competition with his goldfish Bill and Ben.

... **BILLERICAY AS** were hosts to **BRENTWOOD, SOUTHTEND** and **WITHAM** societies for the first round of the 1972 inter-club quiz. Southend won the shield by 6 points (2, Billericay; 3, Brentwood; 4, Witham). The best fish in show award was won by Mr S. Norris of Southend.

DR R. O. B. LIST, the well-known lecturer, is about to embark on a lengthy tour of duty abroad which has made it necessary for him to cancel all his engagements for lecturing. He wishes to advise readers of this so that no disappointment is experienced if replies are not received to letters.

... **BRACKNELL AS** had a very full month in May. Two club meetings included demonstrations by Mr M. Carter on how to set up a miniature tank swiftly and by Mr D. Arkell on making all-glass tanks. Participation in a Three Counties Quiz at Dulcot was followed by a match with the EMAAS Group at Loughton, Bucks. A trip on a double-decker bus to the Brighton Aquarium and Dolphinarium proved most enjoyable as did the social evening and annual Darts Meeting at which the rest of the Three Counties Group were entertained.

... **BISHOPS CLEEVE AS** won the inter-club competition held with seven other clubs. Results were: B.C., 86½; Stroud 864; Gloucester AS 857. Also taking part were Gloucester F.S. L.C.I., Mitcheldean, Worcester and Hereford.

... **MEMBERS of COVENTRY P & AS** did very well in the Loughborough M.A.L. Show. Mr T. Sheehy

achieved two 1sts, Mr E. Wilkins a 2nd and B. & F. Hirst a 4th in the egg-layer pairs.

... **MR & MRS DAVE HODGSON** received the Appreciation Cup from members of **NOTTINGHAM & DAS** for their services to the Society. Amongst other things they maintain the tank in the children's Hospital, and print and deliver the bulletin.

... **BRADFORD & DAS** members were disappointed when the appointed speaker was unable to attend but were soon involved in lively and informative discussions, chaired by their president and vice-president, on many subjects including the keeping and culturing of daphnia, brown, green and blue algae, culturing Infusoria, lighting etc. The Society meets twice a month on the first Wednesday in the month table shows are held and library books available. Meetings are held in room 5 or room 4 of the Unity Hall, Rawson Square, Bradford, 7.45 p.m.

... **THE date for the Open Show of SALISBURY & DAS** has been incorrectly given in Dates for Your Diary as 18th June. Their show is on 2nd July at The City Hall, Fisherton Street, Salisbury, and details can be obtained from Mr I. Goddard, 106 Carmelite Way, Salisbury, phone 27453. We apologise for any inconvenience the erroneous date may have caused.

Dates for Your Diary

Dates preceded by ★ are of shows to which FBAS Championship Classes are allocated.

1st July. **Change. SALISBURY & DAS** Open Show. The City Hall, Fisherton Street, Salisbury. Details from Mr I. Goddard, 106 Carmelite Way, Salisbury; phone 27453.

2nd July. **CASTLEFORD & D. A.S.** Open Show. Carlton Community Centre, Carlton, Featherstone, Yorks. Details: Mr R. Stevens, 72 Falcon Drive, Love Lane, Castleford, Yorks (or phone Mrs Gains, Featherstone 3113).

★2nd July. **EXETER & D. A.S.** First Open Show. Kenford Village Hall, Kenford, nr. Exeter, Devon by 11 noon. Schedule: Mr W. F. Byn, 14 Beaworthy Close, Exeter EX2 4LB; phone 2835.

2nd July. **NORTH WARWICKSHIRE A.S.** Open Show. The Settlement, Kingsstanding Road, Kingsstanding, Birmingham. Details: Mr F. Snow, 208 South Road, Edington, Birmingham.

2nd July. **LYTHAM A.S.** Open Show. Lower Gardens Pavilion, Lytham, Lancs. Details: Mr D. Wright, 13 Cambridge Road, Ansdell, Lancs.

★8th July. **BASINGSTOKE & D. A.S.** Open Show. Carnival Hall, Basingstoke. Schedule from Mr M. Sneyers, 10 Loddon Court, Neville Close, Basingstoke, Hants.

9th July. **LOYNE AQUARISTS LANCASTER** Open Show. Lancaster University, Lancaster. Schedule: Mrs M. Norris, 79 Wymondley Road, Lancaster.

8th-9th July. **ROMFORD & BEACON-TREE A.S.** Open Show (Dagenham Town Show). Central Park, Dagenham, Essex. Schedule (later): Mr D. G. Kent, 74 Leywood Drive, Collier Row, Romford, RM7 2QT (phone 55-6784).

22nd July. **CLEVELAND AS** Open Show. British Legion Hall, Westgate, Gainsborough, Yorks. (Teenside Show, Secretary Park, Mablethorpe). Details: Mr J. McClements, 44 Manor Street, Mablethorpe.

★22nd July. **PORT TALBOT & D. A.S.** Open Show. Y.M.C.A., Port Talbot. FBAS Rules, 12 Judges. Schedule (later): Mr M. Johns, 25 Golden Avenue, Sandfields, Port Talbot.

22nd July. **RUNCORN A.S.** Open Show. All Saints Parish School, Runcorn, Cheshire. 12.00-2.00 p.m. Schedule: Mr P. Hall, 25 Oak Street, Runcorn, Cheshire, WA7 2AS.

28th July. **G.S.G.B.** Quarterly Meeting. Coventry Hall, Red Lion Square, Holborn, London, W.C.1.

★5th August. **TONBRIDGE & D. A.S.** First Open Show. Tonbridge School. Schedule: Mr I. T. Matheson, 13 Nerissa Way, Free Oak Green, Tonbridge, Kent.

★25th-28th August, **PORTSMOUTH A.S.** Open Show, Portsmouth Community Centre, Ticeford Avenue, Portsmouth. Fish entered till, judged 5th, public 7-12th. Schedules: Mr J. Sedwell, 14 Salcombe Avenue, Copsea, Portsmouth.

5th August, **BLACKPOOL & FYLDE A.S.** Open Show, Raikes Parade Annex, Old Grammar School, Church Street, Blackpool. Details: Mr G. Howard, 16 Stamford Avenue, Blackpool; phone 42797.

26th-27th August, **CYMBRU NATIONAL A.S.** Open Show, T.A. Drill Hall, Cardiff. Bunching 26th and 27th. Details: Mr B. Gwynn, 21 Galsita Road, Llandaff North, Cardiff.

12th August, **HARLOW A.S.** Open Show. Details: Mr P. Marbeck, 21 Brook Lane Field, Harlow, Essex.

★22th August, **BRACKNELL & D. A.S.** Open Show, Pinewood Community Centre, Pinewood Court Road, Bracknell (opposite Admiral Cunningham Hotel). Schedules: Mr L. Jordan, 69 Fernbank Place, Ascot, Berks (phone: Windfield Row 3490).

12th August, **NORTH STAFFS. A.S.** Open Show, Victoria Hall, Hanley, MAAS Rules. Schedules: Mr J. S. Booth, 118 Beverley Drive, Bentley, Stoke-on-Trent.

12th August, **BEDWORTH A. & P.S.** Open Show, Nicholas Chamberlayne School, Bedford Road, Bedford. Schedules: Mr T. Page, 74 Lister Street, Arleborough, Nuneaton. Charge of date.

16th-18th August, **MIDLAND OPEN SHOW (MAPS)**, Bagley Hall, Road Street, Birmingham. Details: Mr J. Wren, 126 Froddick Road, Kings Norton, Birmingham 30.

★10th August, **SOUTH PARK AQUATIC (STUDY) SOCIETY & KINGSTON & D. A.S.** combined Open Show, Ham Hall, Ham Close, Richmond, Surrey, 20 classes. FIAS and GIGB standards. Schedules: Mr G. Goodhall, 39 Garth Close, Merden, Surrey; phone 91-117 4643.

26th August, **SALFORD A.S.** Open Show, Brougham Liberal Club, Great Cross Street, Salford 7 (next door to Great Cross St. warehouse). Details: Mr J. Lomas, 27 Birch Street, Lr. Brougham, Salford 7, Lancs.

26th August, **OLDHAM & D. A.S.** Open Show, Werneth Park, Oldham. Details: Mr E. Birchwood, 26 Innesmore Avenue, Blackley, Manchester 2.

★28th August, **PLYMOUTH D. A. & P.S.** Open Show, Plymouth Y.M.C.A. Details: Mr J. Rowley, 52 Darham Avenue, Lippo, Plymouth, Devon.

★21st September, **BETHNAL GREEN A.S.** Open Show, Bethnal Green Institute, 110 Bethnal Green Road, London, E.2. F.I.A.S. Championship Trophy class 19 (grade guppy). Schedules: Mr D. Bandy, 20 Everham House, Old Ford Road, Bethnal Green, E.2.

21st September, **YATE & D. A.S.** Open Show, Newmans Centre, Yate, Chipping Sodbury, Glos. Schedules: Mr M. Emery, 124 Sandridge Park, Yate, Bristol (phone: Chipping Sodbury 313645).

22nd September, **REDGATE & REDHILL** Open Show, Couadon Youth Centre, Chappard Valley Road, Couadon, Surrey. Details: Mr J. Wood, 22 Rickman Hill, Couadon, Surrey.

22nd September, **LUCAS A. & P.S.** Open Show, Joseph Lucas Ltd, Gate no. 4, Spring Road, Hall Green, Birmingham 28. Schedules: Mr G. H. Roberts, 70 Charles Road, Solihull, Warwick.

★21st September, **WELLINGBOROUGH D. A.S.** The Drill Hall, Wellingborough. Schedules: Mr J. D. Robinson, 14 George Street, Wellingborough.

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3rd September, **WHITLEY BAY A.S.** Open Show, Empire Ballroom, Whitley Bay, Northumberland. Show schedules available later.

★10th September, **WEYMOUTH & D. A.S.** Open Show, Small Salway Hall, Dorset. Mr E. B. Jones, 21 Ludlow Road, Weymouth, Dorset.

10th September, **NUNEATON A.S.** Open Show, Friary Youth Centre, Abbey Street, Nuneaton. Details: Mrs P. Danks, 1 Greenhill Drive, Barwell, Leicestershire (phone Earl Shilton 42788).

★22th September, **BRIGHTON & SOUTHERN A.S.** Open Show, The Marston Centre, Marston Road, Hove, Sussex.

10th September, **Huddersfield TFS** Open Show, Huddersfield Town Hall, 44 Playnes. Details: Mr M. Jervis, 1 Rye-side, Kirkstall, Huddersfield.

10th-11th September, **BRISTOL AQUARISTS SOCIETY** Open Show, 31 Michael Parrish Hall, Bishopston, Bristol. Details: Mr H. C. B. Thomas, 2 Grove Park, Bristol BS6 6PP.

10th September, **HAVANT & D. A.S.** Open Show, Deynell Hall, Parbook, Hants. Details: Mr V. B. Horn, 124 London Road, Witley, nr. Portsmouth, Hants.

★11th September, **HOUSNLOW & D. A.S.** Open Show, Housnlow Youth Centre, Cecil Road, Housnlow.

17th September, **STONEAS** Open Show, Walton Community Centre, Stone, Staffs. MAAS Rules. Schedules: Mr K. Evans, 42 Friary Avenue, Walton, Stone, Staffs; phone Stone 3922.

17th September, **WEST CUMBERLAND A.C.** Open Show, Civic Hall, Whitehaven, Cumberland. Details: Mr J. Parker, 4 Southey Avenue, Greigill, Egremont, Cumberland.

17th September, **RHONDDA A.S.** Open Show. Details: Mr M. Williams, 122 Top Trebarnog, Trebarnog, Rhondda, N. Wales.

22nd September, **G.S.G.R.** 1972 Open Show, Adult School, Sutton, Surrey.

24th September, **HUCKNALL & BULLWELL A.S.** Open Show, Bulwell Youth Club, Caventry Road, Bulwell. Schedules: Mr G. P. Swarwick, 74 Westleigh Road, Strelley, Nottingham.

24th September, **NORTHAMPTON & D. A.S.** Open Show. Details to follow.

24th September, **OSRAM A.S.** Open Show, Recreation Hall, Refugee Street, Oldham, Lancs. Details: Mr J. E. Shore, 53 Refuge St, Shaw, Oldham, Lancs.

★24th September, **TORBAY A.S.** Open Show, Torquay Town Hall. Details to follow.

1st October, **EALING & D. A.S.** Open Show, Northfields Community Centre, Northcroft Road, London, W.13.

1st October, **CHESTERFIELD & D. A.S.** Open Show, Clay Cross Social Centre, Chesterfield Road, Clay Cross, nr. Chesterfield, Derby. Exit 49 off M1, 4 miles to Clay Cross, following signs. Details: Mr D. Stone, 117 North Wingfield Road, Grassmoor, nr. Chesterfield.

7th October, **BASS** Meeting, Fellows Lecture Hall, London Zoo, Regent's Park, 2.0 p.m. All welcome. Tickets from Mr F. Keene, Highfield, Old Hill, Woking, Surrey.

7th October, **EAST LONDON A. & P.A.** Open Breeders Show, Popple Road School, Barking, Essex. Bunching from 8.0 p.m. 28 October-9.0 a.m. 7th Schedules from: Mr F. Vickat, 13 Truro Way, Romford, Essex.

8th October, **BUXTON & D. A.S.** Open Show, The Pavilion Gardens, Buxton. Details to follow.

14th-15th October, **B.A.F.**, Belle Vue Manchester.

22nd October, **SHERWOOD A.S.** Open Show. Details to follow. Show secretary: Mr J. Igoe, 24 Marple Avenue, Mansfield-Woodhouse, Notts.

★27th-30th October, **THE AQUARIUM SHOW '72**, Royal Horticultural Society Old Hall, Vincent Square, London S.W.1. All details from the Organiser, 554 Garratt Lane, London SW17 6NY (01-947 2805).

30th October, **NEWCASTLE GUPPY AND LIVEBEARER SOCIETY** Open Show, Central Hall, Gosforth, Newcastle upon Tyne 5. (1) Freshwater classes, 17 (night). Schedules: Mr J. A. Laidley, 19 Aln Avenue, Gosforth, Newcastle upon Tyne 5.

1st November, **MIXENDEN TFS** Open Show, The Miranden Community Centre, Clough Lane, Mixenden, Halifax. Details: Mr S. Laidburn, 74 Clough Lane, Mixenden, Halifax, Yorks.

11th November, **G.S.G.R.** Quarterly Meeting, Conway Hall, Red Lion Square, Holborn, London, W.C.1.

11th November, **HARTLEPOOL A.S.** Open Show, Langston Hall, Seaton Curves. Schedules: Mr J. D. Watson, 42 Sydenham Road, Hartlepool, Co. Durham, TS14 1PZ.

12th November, **CRESWELL & DAS** First Open Show, Workshop Sports Centre, Valley Road, Workup, Notts. Schedules: Mrs H. Bishop, 13 Wastminster Close, Workup, Notts. Workup 6191.



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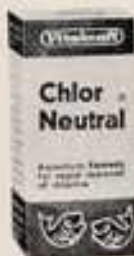
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