Avoiding a fat chance

Are you giving your fish only a “fat chance” of survival? You may be, if you’re not using TetraMin Fish Foods. The picture above shows one way we’re constantly testing fat content in our products, to make sure they’re safe for your pets. Fats of high boiling point, for instance (like suet, or the bacon of warm-blooded animals) will give goldfish indigestion — or worse. Tests like this one feed your fish on a “fat certainty”.

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Comments and Quotes

○ Seaweed that isn't ○ Air galore ○ Should Shows be rationed? ○ No longer polluted ○ Dearth of goldfish

Plastics at the Seaside

If the idea of plastic plants in the aquarium is anathema to you, read no further. At Bournemouth they've been putting artificial 'seaweed' in the sea! Not with the idea of prettying it up, however, but to find out if it will prevent erosion of the sandy shore by coastal currents. Apparently the bunches of polypropylene yarn used for this purpose have been highly successful, and over 6 months they have caused sand to bank up three to four feet high.

It rather looks as if I.C.I. might find another seaside customer for their yarn at Hastings, whose Corporation has been complaining of dearth of local growth of seaweed. They have, in fact, been begging seaweed from neighbouring towns, according to the Evening News, which quoted a town council man as saying: 'There used to be tons of the stuff lying all over the beach but now there is hardly a seaweed leaf to be found. Nature societies are undertaking a survey to find out the reason for the mass disappearance'.

Air, Glorious Air

Air, air and yet more air seems to be what manufacturers have decided we aquarists want. At the Pet Trade Fair this year we lost count of all the aerators on show for the first time, and tanks crowded with impossible numbers of diffuser stones, bubblers, water-wheels and things with jaws that open and close, all furiously bubbling away so that the water seemed to be boiling, were used by several exhibitors in demonstration of the air outputs of their new models.

Never before has the aquarist setting out to buy an aerator been faced with such a display of makes and types as he can see today. In an effort to help in the selection, for the beginner particularly, we have included in this issue a guide to types and performance of aerators. It is a guide, and not a complete list of every make on the market, and for some of the very latest introductions since their performance under working conditions has yet to be observed comment has been withheld.

Too Many Shows?

Are there too many shows being put on at present? This is the thought that Mr R. Lister, chairman of his society and the editor of the Aireborough & D. A.S magazine, puts forward in his July issue. He suggests that, with the formation of the many new societies now taking place, the show calendar is becoming so congested that the shows staged by quite a few of these societies must be a lot less successful than the hard work put in by committees and club members would seem to warrant.

Risking the wrath of some of the bigger clubs, Mr Lister says he would like to see two or three societies in the same area amalgamating their shows, sharing their ideas, expenses and profits. He points out that if a big society has a bad attendance at a show it can be serious, but if a small society with limited finances has a bad show it can be disastrous and results in a restricted programme for the rest of the year. He suggests that,
with the help of the big regional organisations, each society might book one show per year and any free dates could be allocated on a rota system. In Mr Lister's own words: '... this is not a business we are in where the weakest goes to the wall, but a hobby, and each society should try and help one another'.

No Longer Black and Evil

HOWEVER sentimental Londoners feel about 'Old Father Thames' while away from home, it is doubtful whether the thought that their river is getting cleaner and cleaner will bring much comfort along its banks during a wet and soggy year. But in fact a report, recently published by the Port of London Authority and compiled by the river conservator Mr C. E. C. Townsend, emphasises the part played by increased rainfall in the successful cleaning-up process that has been going on.

During 1966 rainfall in the Thames Basin was 5-25 in. more than in the 35-year standard between 1931 and 1955, and the comparatively wet year that followed the dry winters between 1964 and 1965 played a very important part in improving the condition of the river. Although the margin of safety has not yet been reached, and any loss of efficiency at one of the major sewage works or other increase of the polluting load could bring about a return of anaerobic conditions, a very great deal has been achieved. Twenty million pounds have been spent in recent years on the 'anaerobic, black and evil smelling' tideway that was the Thames in the post-war period.

Now, in the salt water areas, eels and small crustaceans thrive to such an extent that they are becoming a nuisance in parts where they had not previously been seen for years. Freshwater fish are surviving miles below their former limit, 60 lb of fish a day are collected in the screens at Fulham Power Station (the first time that fish have been found here for over a century); and for the past three summers no part of the river has been wholly deficient in oxygen at any time. In future when there is a storm in hot and sunny summers such as this year's, Londoners can say not only 'Oh, well, the garden needs it' but also 'At least it's good for the river'.

Dearth of Goldfish

THE floods that devastated northern Italy recently received much publicity for the damage done to precious works of art, manuscripts and books, but their effect on fish has gone largely unrecorded.

It is in northern Italy that in normal years enormous numbers of goldfish are raised in special breeding ponds. Many of these ponds were ruined by the floods and the majority of the fish were either killed or swept away. Therefore at present imports of goldfish from Italy are running at less than one-tenth of the usual number.

It may well be two years or longer before the fish breeders will be able to attain the position gained before the flooding.—PET TRADE JOURNAL.
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White Worm Cultures

THE difficulty of getting white worms out of a culture that Arpee refers to (PETFISH MONTHLY, August) is one that will arise only if it is a newly set up culture or one that is not being kept properly. There should not be the slightest need to warm up the culture to get the worms to the surface and I suggest that Arpee’s warming-up technique will slow down reproduction of the worms subsequently, so that the culture becomes poorer and poorer as time goes on.

When my cultures are uncovered the worms are always found in thick ‘creamy’ masses on the top around the squares of moist bread and can be collected in lumps with tweezers or a small spoon quite easily before they begin to disappear into the compost. I find that apart from regular feeding the main requirements for success with white worms are the right amount of moisture in the compost and keeping them in cool and darkened conditions. My boxes are kept slightly above the floor of a greenhouse and have sheets of glass over them to keep moisture in and are completely covered with thick canvas, to keep light out. The worms will be killed by freezing cold and will stop breeding by being warmed.

Obviously you cannot start taking worms from a culture that has only just been set up, but the harvest should begin about 6 weeks after starting the thing going.

Macclesfield, Cheshire

V. BROADBENT

Not a Good Idea

YOUR correspondent Mr. K. Pringle in the July issue of PETFISH MONTHLY asks for comments on his idea of making a ‘Cabinet Aquarium’ for small tropical fishes. I cannot see any use for this other than as a means of keeping together in jars a number of fishes such as killies, guppies or fighters during rearing. For display purposes fish look so much better in shoals in tanks; by all means make a cabinet around the tank but why confine even the small species to containers the size of show jars.

Be pleased to publish the letters on the agreement PETFISH MONTHLY has received from the Chairman of the two organisations.

FOR many years the keeper of fancy goldfish, unlike his tropical cousin, has had a great problem in selecting his fish for exhibition, because of the many different standards used for judging them. Many times we have heard them ask ‘Why can we not have one universal set of standards’?

This agreement between the Goldfish Society of Great Britain and the Federation of British Aquatic Societies could be a start to a universal set of standards, and should be a great help to the breeders and exhibitors of these fish, as well as supplying show organisers with a larger body of judges using the same standards, including those prepared to judge other coldwater classes.

The needs of the exhibitors of native and foreign coldwater fishes have also been discussed, and some Guides or Standards will be produced for their use.

All our meetings were held on the friendliest of terms, and I would like to thank the officers of the G.S.G.B. for their co-operation in producing this agreement.

A. G. HUMPHREY
Chairman, Federation of British Aquatic Societies

I feel that the agreement made between the F.B.A.S. and G.S.G.B. regarding the standards for goldfish is a much more momentous step than would appear, perhaps, at first sight.

The show bench is the only yardstick with which to measure the progress of our hobby, and in the past this has been a very confused one. The show is the only place where one can check what progress one has made in comparison with what others have done. The more districts visited the better. You may have a fish which is a constant winner in a limited area and you think you have reached the top. It could be that there are not many good fish in your vicinity and yours is simply the

Prize Letters

TO the writer of the letter judged by the Editor to be specially worthy among readers’ letters published in each month’s issue, PETFISH MONTHLY will award a prize of an item of aquarium equipment.

Next month’s prize:
An under-gravel filter.

PETFISH MONTHLY will be glad to have your experiences, comments, suggestions etc. in letters on any matter associated with fish-keeping. Write to the Editor, PETFISH MONTHLY, 554 Garratt Lane, London, S.W.17.
best of a poor lot. Showing in other areas will demonstrate whether this is true or not. If, however, the same standards are not used at these other shows, the value of the visit is considerably diminished. This is why one set of standards is so important. It means wherever you go you compete on level terms and you can compare your fish with others striving to reach the same standard of perfection. The show now has real value.

This is the reason why I welcome the acceptance by the F.B.A.S. of the G.S.G.B. standards—not from any desire for more power or importance but simply because it will be so much better for the goldfish-keeping hobby in general. It is a great step towards the establishment of one set of goldfish standards accepted and used all over the country and I have high hopes that societies who have and use other standards will eventually see eye to eye with the F.B.A.S. and G.S.G.B. and accept these standards. When that happens breeders will all be line-breeding towards a common goal. Other breeders’ fish can be interbred without undoing years of work and I feel a new confidence and lease of life will appear in the hobby.

The Goldfish Society has one ambition—to see more and more high quality goldfish kept in better and better conditions, resulting in healthier, more vigorous, more attractive fish giving greater pleasure to their owners and, furthermore, to preserve all known characteristics of goldfish for posterity.

The F.B.A.S., I know, have exactly the same objectives, only in their case the tropicals are catered for as well. This is why, when the representatives of the two Societies met, it was found they had a common language and agreement was reached with goodwill apparent on both sides.

Let me assure all societies and clubs concerned that the Goldfish Society have only the well-being of the goldfish hobby at heart and will do all in its power to help and advise all those whose love of the goldfish makes a common bond with us, whether members of the G.S.G.B. or not. I know we shall be only too glad to visit any club to discuss goldfish and explain the reasons for our basic varieties and pointing methods, which when understood will, I am sure, be accepted as sound common sense.

The foregoing explains in some detail why I am more than happy to be associated with the negotiating and finalising of this agreement.

GODFREY H. O’NEILL
Chairman, Goldfish Society of Great Britain

Hendon’s 1967 Congress

I WOULD like to inform your readers, through the medium of your journal, that it is with pleasure that we again announce that Hendon & District Aquatic Society will be putting on another Congress—a Congress that we believe will be as successful as those we have held in the past. The venue remains unchanged (Le., Whitfield Secondary Modern School, Claremont Road, Hendon, London, N.W.2). The date will be Saturday evening, 11th November, 1967, and it will start at 6.00 p.m. We have chosen this date with some forethought; (a) it does not appear to coincide with any other national aquatic gathering, and (b) it is the same day as the Lord Mayor’s Show. We feel that the many friends we have outside the London area may wish to enjoy a full day by seeing the Lord Mayor’s Show in the morning, visiting the many fish establishments in the afternoon and rounding off the day by coming to see us and our Show.

It is with great excitement that we announce that our speaker for this year’s Congress is none other than Colonel Jorgen Schoel of Copenhagen, Denmark. I am sure that the killifish associations (that now so fully abound in our accepted isle) will agree with us that Colonel Schoel is the unchallenged king where egg-laying toothcarps are concerned and we hope we do not upset anybody by saying we have never seen better photography. Pictures aside, Colonel Schoel is an expert in his own right and speaks English fluently. Among other things he will be telling us about a recent expedition he led to Central Africa, and the keeping and breeding of egg-laying toothcarps. There will, again, be something for all.

We hope again to have many of the important personalities in the hobby attending, and they will be available to discuss the various aspects of fishkeeping. There will also be the opportunity to renew friendships with some of the other aquarists who regularly attend this aquatic occasion. Refreshments will be available for early arrivals and again during the long interval. Previous visitors to our annual Congress need no introduction to the facilities available: easy to reach, good refreshments and ample parking space for cars and coaches.

We are sorry that we have had to raise the admission to £1, but because of the cost of our speaker’s air flight and the various other expenses that seem to increase every year we felt that we would not break even this time if we left the admission charge unaltered. Junior members, of course, will be admitted at half price. We hope you all feel that a speaker of such eminence is worthy of the increase we have had to put in.

Colonel Schoel’s services will not be obtainable again outside this Congress and we urge you not to miss this unique opportunity.

3 Holme Way, 1 K. L. PURBROCK
Stonham, Hon. Secretary, Hendon & D. A.S.
Middlesex

Club News

I WAS most impressed with the large coverage you give club news in the August issue of PETFISH MONTHLY. You said when the magazine first started that you would like to give as much club news as possible. Now that you have shown the clubs that you can and will, I only hope that they will support it with all the up-to-date news that they can and continue to support this now well-established monthly.

D. W. ELLIS
Chairman, Kingston & D. A.S.

We are always very pleased to receive news items and reports from clubs and have found club responses very vigorous. In fact, so many reports are received that we must ask societies to bear with us if, for lack of space or arrival after closure for press, items are omitted in any one month.—EDITOR, PETFISH MONTHLY.
For the Community Aquarium

The Tetra with a Rummy Nose

A very cheery fellow is the rummy-nosed tetra. The bright red forehead and nose that this fish sports, and which give it its popular name of rummy-nosed or red-nosed tetra, positively brightens up a tank with its warm glow. Its long, slender, silvery body has a golden tinge to it and across its flanks runs a longitudinal black line that gradually widens and then narrows again as it stretches across the tail. A faint greenish line follows the black. Both lobes of the caudal fin carry a black oblique stripe edged with white, which contrasts perkily with the bright coloration at the fish’s head.

A word of warning here, however. Just as with the bleeding heart tetra, this characin can quickly lose its bright color unless the conditions in the tank are suitable, though its requirements are not so very demanding. A well-planted tank containing old water and a temperature in the region of 80°F (26°C) is preferred. As a result, these fish seldom look well in the dealers’ tanks and do not show their real beauty until they are established in a well-set-up community tank.

In all other respects Hemigymnus rhodotomus is a very amiable character. It grows only to a length of 1½-in. and causes no trouble to any of its tankmates. Nor are any feeding problems encountered with this native of Brazil, since dried foods are taken as readily as live foods.

Sexing is not difficult as males are slightly smaller and noticeably slimmer than the females, but the fish do not spawn readily and rearing the young is a difficult task. However, if its spawning habits present a challenge to the breeding enthusiast, as a community tank inhabitant it can only be numbered amongst the more easily kept, peaceful and colourful fraternity.
Some Angles on the Angel

By R. S. B. Pinks

When a friend regretfully gave up keeping tropicals and presented me with a 24 in. by 12 in. by 15 in.-high tank, together with the bits and pieces, I decided to set up a purely luxury 'one fish' tank, and that the fish would be angels. The tank was soon set up and planted heavily at the back and either end with Sagittaria; two Azamex swords, a giant Sagittaria and three Indian ferns were added, and a tall rock and a low 'terrace' combined to present quite a pleasing layout, where there was both adequate cover and swimming space for fish which, by reputation, are rowdy, rowdy, rowdy, but always unpredictable. I was not fussy about water; it came from a well in my garden, and the reaction was alkaline. I gave the tank about 2 weeks to settle down, and then kept a weather eye open for some suitable fish.

I told my dealer what I wanted: a pair of really good fish. As it is difficult to sex the angel, you are left with two possible courses of action when breeding is planned. One is to put half a dozen or so 2 in. fish in a large tank and allow them to pair off, and the other is to keep putting adults together until something happens. With my dealer's co-operation I eventually settled on four good adults, and I let them sort themselves out.

A Pair is Established

My first job was to bring the adults into condition, and to repair some of the damage which their fins had sustained during moving. I was astonished and not a little pleased to have them taking earthworm from my fingers within a day or so of being introduced to their new quarters. About 8 weeks later, on 10th October, I saw one fish laying some eggs on the giant Sagittaria, but it was not clear whether any of the remaining three was in any way interested in fatherhood. One did, however, show something of a breeding tube and brighter colours, and I rapidly removed the other two. The female continued to spawn quite calmly during all the fuss, making run after run up the leaf like a gigantic butterfly.

The male rapidly regained his composure and appeared to be fertilising the eggs, bumping his breeding tube over them rather clumsily, and occasionally dislodging one or two, which the female willingly picked off. The books had told me that the parents sometimes look after the eggs and rear their young, finally escorting them roosted in a school; they had also said that, more generally, the parents are not to be trusted, and like eggs for tea. I decided to be trusting, and to let Nature take its course.
All went well for an hour or so, both fish taking it in turns to hover over and fan the eggs with their pectoral fins. But no sooner had I switched the tank light off before going to bed, than they both set to and devoured the lot.

Although I was still very keen on the idea of letting the parents try to raise a brood, I inevitably decided that if they produced further eggs, I would attempt to rear them artificially. In anticipation of this I placed a 2 lb. kilner jar in a neighbouring tank, together with an air stone adjusted to give a fine stream of bubbles. Added to the water, which was boiled well water at 82°F (28°C), the same temperature as the parents’ tank, were two or three drops of 5% methylene blue solution. As I did not wish to snip off leaf after leaf of my broad-leaved plants after each spawning, I introduced some bamboo leaves from the garden, in the hope that these might be preferred as nurseries.

Seventeen days later a further spawning occurred. Of the 100 eggs that my wife did well to salvage on a leaf of bamboo, only ten hatched, and none of these fry reached the free-swimming stage; all gradually weakened, assumed a blackish colour, and finally succumbed.

**Monster Spawning**

Then followed an interval of 17 days, and a monster spawning took place, something like 400 eggs being laid on three bamboo leaves. I removed two leaves to a jar, as before, and left the third to see what the parents did with it. Once again it was safe until the overhead light was turned off late at night; the whole lot went within a minute or so. About 40 of the eggs in the jar developed fungus during the night, followed by 20 the next day. There were about 50 more left and by midnight of day 3 there was the first big hatching I had seen.

There were dozens of wrigglers hanging from the leaves by threads which came from the middle of the tops of their heads. After all had 'emerged' I transferred them, using a medicine dropper, to a small plastic tank floating in a larger one. This small tank simply contained boiled water from the parents’ tank, with a few drops of methylene blue, plus air stone. There were a few deaths on days 4, 5 and 6, mostly of grossly mis-shapen fry. These seemed to have enormous stomachs, and had been rejected from the tightly-knit groups of nicely wriggling normal specimens. Some of the latter got on to the air stone, right in the way of the bubble stream. How they clung there I do not know, but they stuck it for 3 whole days without ill-effects.

By day 6 things were looking distinctly interesting. Each day the individual fry looked bigger, more like fish and less like jelly. Eyes became prominent and whole groups would suddenly lift up into the water, as though to participate in a mass swim-off.

Feeding the fry was going to be the big problem. I happened to have a tank containing plenty of mulm (and presumably a few spare Infusoria), and I half-emptied this and topped it up with a pea-green concretion of algae which I had been holding in reserve for some time. It all seemed very promising, especially as, on day 7, there was a whole host of young fry free-swimming. I floated their tank in the new one containing the green water, and gradually transferred them to it. Within about a hour the majority were quite dead. Almost as soon as they got down to the mulm they appeared to be in trouble, lost control, and gradually lay motionless. I think they must have encountered the wrong sort of bugs there, because most of the other factors were similar to those prevailing in the water whence they came, pH certainly couldn’t have differed greatly, and as all the water emanated from the same source, I doubt if the hardness had varied at all. There were no survivors, and I was beginning to believe that, for me, the breeding of this fish was just another pipe dream.

All the same, as I looked over my notes I saw that some sort of progress was being made, and that certain factors were becoming more vital than others. Absolute cleanliness at all stages was standing out a mile, as most of the, matter of feeding the fry, once you had got them free-swimming. The water qualities did not seem to be critical, and the temperature had ranged between 78° and 84° (26°-29°C). By the time yet another spawning was lost I noticed that in certain spawnsings there was more of a tendency for a few eggs to whiten and break up earlier than in others. When this happened the circulation set up by the air stone distributed the white fragments liberally over the remaining eggs, hardly to their benefit. Within an hour or two there would often be a whole cloud of white death insinuating itself into the rest of the spawn. As yet I had no answer to this. From this spawning I got a few fry up to their fourteenth day, with Liquifry, but at no time did they look very robust, and an overdose soon finished them off.

After another 11 days, off they went again. This was their last chance, and by day 8 there was the first big hatching I had seen. There were dozens of wrigglers hanging from the leaves by threads which came from the middle of the tops of their heads. After all had 'emerged' I transferred them, using a medicine dropper, to a small plastic tank floating in a larger one. This small tank simply contained boiled water from the parents’ tank, with a few drops of methylene blue, plus air stone. There were a few deaths on days 4, 5 and 6, mostly of grossly mis-shapen fry. These seemed to have enormous stomachs, and had been rejected from the tightly-knit groups of nicely wriggling normal specimens. Some of the latter got on to the air stone, right in the way of the bubble stream. How they clung there I do not know, but they stuck it for 3 whole days without ill-effects.

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Worm taking over almost exclusively towards the end of that period. I did, incidentally, wash the brine shrimp with water from the fry tank by first getting it into a fine-meshed net and then squirting tank water over it with a medicine dropper.

The shape of the angel fry is similar to that of a young guppy till it reaches 3 weeks or so, and then the arrowhead angel shape begins to develop. Grindal worm and fine fry food should be offered at about a month, and it is not long before the young fish start to fight over regular feedings of Tubifex and white worm. I found that the rate of growth varied widely as between individuals, and when some had reached 1 1/2 in., others were not up to a third of that size. Fierce fights took place between the biggest and the smallest, and the latter were gradually killed off. This is no doubt Nature’s way, and I was hard-hearted enough not to intervene. I had 20 nice fish of saleable size 3 months after the spawning, which at least was something to show.

Water Changes for Fry

One swallow doesn’t make a summer, and to have raised only 20 fish from something like 2,000 eggs was not up to even Nature’s standards, so some more reliable way had to be found. I studied my notes even more carefully than before and put a number of the factors into chart form, in an attempt to test each step and to accept or reject any particular part of the experiment, according to its success or failure. It soon became evident that it paid off to change about a third of the water containing the fry each day after they had become free-swimming. In particular, all unester brine shrimp should be siphoned away.

I was still concerned, however, with the large percentage of eggs which developed fungus, and felt that the siphoning was not altogether due to the fact that the male was falling in his duties. It occurred to me that, although in the natural way of things the eggs and leaf remain more or less horizontal in the water, the parents are said to clean the eggs and the site most thoroughly. They would certainly not tolerate any of that white powdery fragmentation to which I have earlier alluded. I accordingly decided that in future I would arrange for the egg-bearing leaf somehow to be supported vertically in the water, in order that as the eggs disintegrated, the bits would fall clear of the leaf and not lodge strongest and infect the unassailed specimens. At the same time it seemed a good thing if the size of the container in which the eggs were first put could be as large as space allowed. The conventional jam jar really seemed too small for the job. I therefore brought into use a plastic cake container measuring about 10 in. square by 4 in. deep. To the inside of one of the sides, about halfway along it, I stuck a piece of Perspex 3 in. high by 1 in. (this stuck out into the tank at right angles). To this I clipped, with a child’s clothes peg, another piece of Perspex slightly smaller than the other. Future bamboo leaves bearing eggs could be clamped between these two sheets and held in the vertical position near to an air stone. This certainly paid off, as subsequent spawnings yielded a greater than 75% hatch.

There were one or two oddities in individual spawnings which may be worth mentioning. The tenth spawning was one that never was. You can generally predict when a spawning is due to take place by the full appearance of the breeding tubes and the leaf-clearing activities of both parents. On the day on which spawning no. 10 should have occurred I noticed four or five perfectly clear eggs on a leaf, and assumed that the rest had been eaten. They were still there the following evening, when the parents made every sign of beginning another spawning. The female crept up the leaf in its spawning fashion but simply extruded strings and strings of perfectly white eggs, which the male allowed to fall to the floor of the tank. The following two spawnings produced no young that survived, but they were fertile. Later spawnings were only half the size of earlier ones, but the eggs were spaced more widely apart on the leaves. Possibly this is a further contributory factor in the higher rate of hatching.

I do not know whether sunlight has any effect on angel eggs, but it certainly seems to be not beneficial. On two occasions early morning sun fell on large batches of eggs, and in both instances the eggs had passed the 95% fungus rate by midday of the same day. More recent spawnings I have covered up—partially, not completely, as with neon—and it is again during this period that results have been most satisfactory.

The love-play of the angels can be very variable, and often ends up with torn fins and divorce, or death. Even a well-matched pair, will indulge in fistfights on occasions. My pair puts on colour about 3 days before the spawning, and they emit a curious low croak, though this latter is not confined to the spawning period. The male usually tips his partner back on her heels several times in evening till her mouth is pointing towards the sky. No great harm seems to come, and she often retains this posture till I appear with the worms, and then they both turn momentarily from passion to provender. A similar sort of after-play occurs when the spawning is completed, and it is usually when Mrs A is contemplating the stars that I dart in with the scissors and make off with the leaf of eggs.

Common Features

There are one or two common features of all spawnings which may be of interest. In no case did these fish spawn at night or during a forenoon. Eggs were laid on bamboo leaves, and on no other plants, excepting in the first spawning, when there were no bamboo leaves present. So far as water is concerned, the fish did not seem to be fussy, and it very decidedly made no difference whether the water in which the eggs were hatched was boiled or not. As one of the principal difficulties in hatching angel eggs lies in arresting the fungus, one would have thought that boiled water would have been advantageous.

The run of unsuccessful spawning attempts which occurred at the beginning of this experiment encouraged me to make a detailed record of relevant factors attending each spawning, and I would commend this procedure to the aquarist who seriously sets out to breed a fish which proves in any way difficult. These notes therefore are purely a reflection of what happened to my particular pair under my particular conditions in my particular tank. If detailed records do no more than enable you to plan to be home on the day the young become free-swimming, you have accomplished something, as on that day they need an awful lot of attention.
The Daphnia Hunt

ONE of the pleasures of summer to the keen fishkeeper and breeder is the availability of a much wider range of live foods for his fish and of these Daphnia stands high on the list. Although by no means a perfect food, for the outer shell of this tiny 'water flea' has little nutritional value and an unrestricted diet of Daphnia alone is no more a complete fish diet than is feeding that relies entirely on dried products, live Daphnia does, however, provide a very acceptable variation to a fish's diet. When graded through muslin, the tiniest crustaceans that are obtained are an excellent food for young fishes.

Daphnia are to be found in quantity in the early spring and high summer (and the siting of a Daphnia pond can be a very closely guarded secret) in shallow, static water where there is a supply of food for them. Farm ponds, where animal droppings create a suitable environment for the growth of the water life on which Daphnia feed, and the large shallow beds at water and sewage works, in which Daphnia can thrive on the algal growth, are frequently rich sources of supply.

The main piece of equipment required is a large strong net, made of a material such as scrim, sewn on to a frame at least a foot in diameter. The net can be from 18 in. in length, with a rounded end. (A pointed end merely traps the massed fleas and squashes them). The net should be

Top picture: members of Walthamstow A.S. out on a Sunday morning Daphnia hunt (left to right: Keith Hobson, Bill Patrick and Dennis Blackham)

Middle picture: the Daphnia is unusually plentiful, and this handful of solid water fleas is the amount carried in water in one large plastic bag.

Right: a supply is delivered to show secretary Terry Needham by Keith Hobson

Photographs by W. J. CHESNEAU
attached to a long, stout, handle. When the Daphnia is sighted, usually as a reddish cloud just below the water surface, the net is placed in the water and skimmed along in a figure-eight movement several times. Care must be taken that the net does not go in too steeply or mud from the bottom will be stirred up in great quantities. The Daphnia in the net is emptied into buckets or large plastic bags in which some of the pond water has already been poured.

It is tempting to take home great masses of Daphnia when it is available, but it is unnecessarily wasteful to do this; even with heavy aeration the death rate of the crustaceans over two or three days is very high. The Daphnia to be fed can be netted out of the supply, placed in clean water and checked for undesirable water life such as dragonfly larvae. As it is not very easy to check for the presence of smaller pests such as *Hydra* it is advisable not to use it in breeding tanks used for the smaller egglayers.

Plastic bags of water provide a better means for Daphnia transport than trays.

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**MARINE FORUM**

**Queries Answered**

Is it possible to buy live coral in England and if so how expensive is it?

Is there sufficient food in a 20 gallon marine tank for coral polyps to feed on?

It is possible to buy live coral in England but supplies are not easily obtained, and can be expensive. The keeping of live coral is not a job for the novice, the main requirements are vigorous circulation and an ample supply of oxygen. Feeding is also a specialist job mainly with brine shrimp, mussel milk, and pulverised dried foods. It would be unwise to keep your coral in with certain species of fishes—quite a wide range enjoy coral in their natural diet. (An article on living corals appeared in *PETFISH MONTHLY*, April, 1966).

Is it possible to purchase the following fish and if so about what price could I expect to pay for them?

All of the fish you list can be purchased in this country, it is just a matter of waiting until your dealer has them in stock. One of our Panel has kept all of the species at some stage, except the *Pygophyes*, and their sizes and the prices he paid for them are given in parentheses:

- *Chelon rostratus* (3 in., 90¢)
- *Acamphaurus luteus* (6 in., £1.25)
- *Charidion trifasciatus* (12 in., 50¢)
- *Pomacanthus imperator* (8 in., £2.60)
- *Acanthastrea* (5 in., 60¢)
- *Parachordodon neolatus* (1½ in., 50¢)
- *Charidion striatus* (2 in., 50¢)
- *Octofasciatus* (3 in., £3.50)
- *Pygophyes discaecatus* (not known)
- *Hemiichys acuminatus* (3 in., £3.50)

You can appreciate that prices vary a lot from dealer to dealer, however. All of the above list could be classed as somewhat 'difficult' and inadvisable for the novice marinist.

The water in my area is rather hard. Does the hardness of tap water affect the salt water made from it with artificial salts?

The hardness of your tap water and your marine aquarium topics from readers of *PETFISH MONTHLY* are answered here by arrangement with the International Marine Study Society.

Continued on page 218
What is a Garden Pool?

By CAPT. L. C. BETTS

In this restless, materialistic age in which we live, this simple question will evoke as many answers as the number of people being asked. To some it is the beautification of an ugly, unused part of the garden whilst to another it represents an aquatic 'thing of beauty and a joy for ever'. Certain it is that of all the activity associated with the ordinary, normal garden, no part of it gives as much pleasure for so little effort. A garden pool—and I prefer the word pool to pond, it sounds more apt and 'watery'—once constructed properly in concrete, will outlive the builder.

Pool psychologists have a rich area for research in the home pondkeeper. One glance at a pond will show whether the owner is an aquarist or a horticulturist as its layout will indicate whether the furnishings are primarily for the fish or for the plants. A restrained use of plants with plenty of swimming room shows the aquarist, whereas mass effect planting indicates the horticulturist.

The shape of the pond, too, is a keen indication of the character of the owner. Straight-sided square, rectangular and circular pools indicate the engineer, whose faith in construction rests firmly on bricks and shuttering. Too often these people see their fishes as a modification of the petted engine, capable of reduction to the drawing board with gallonage (one inch of fish to a gallon of water, you have heard it all before) and the 3:2:1 concrete mix are the all-important factors. It is not denied that just as humans can acclimatise themselves to living in flats, so fishes can adapt themselves to living in private swimming baths. Formal pools, per se, have their advocates and functionally have much to commend them.

The rounded lines of the informal pool suggests a more kindly owner. The faltering water level proves that bricks and shuttering are only ignored at great peril to efficiency, but the tolerant, happy go lucky owner would rather have rounded lines that never jarred his sensibility even if he meant the occasional use of the hose in topping up the level. It has been said in other places that one can get nearer to God in a garden, which if this is so suggests the soft lines of the informal pool as against the hard lines of the formal pond.

What is a garden pool? Some wives say it is that muddy hole at the bottom of the garden which has such a fascination for the 3-year-old whose bombshell fall into it is never more than two shouts away. On the other hand, some wives find the garden pool most handy since it saves them walking to the house to fill the water can.

Again a garden pool can be the fascinating El Dorado for that mangy, ginger cat at No. 49 whose taste for goldfish is incurred by countless pails of water and endless practice with the son's catapult. The rickety chicken wire round the pool is not rickety through the laziness of the owner, rather is it an open invitation for the cat to learn on so that in can get a better view of the fishes with the ever-present possibility that it will find itself in the deepest part of the pool.

Or again, a garden pool can be the receptacle for the week-end angler, who unwilling to return his catch to the source brings them home to show the family. The family not being interested, the angler has to find a home for two 12 inch brèmes and you, being a neighbour and having a pond, are invited to receive them. This, of course, is the moment to define what a garden pool is not.

Garden pools can also have a remarkable attraction for tradespeople, particularly milkmen. One house I lived in had a pool in the front garden, of which I was very proud, and the path to the front door led round it. The milk boy generally tried to cut corners, which had a depressing effect on the bog bean, but he will be mainly remembered by me for the 25 milk bottles he failed to hold whilst carrying out his remarkable leaping act. Actually pools in front gardens are not signal successes, usually as they are open challenges to passers by. For example, one commuter practised nightly on his knack of flicking cigarette ends without moving the arms as he passed my house, aiming deliberately at the pond; small boys would pass many a happy hour demolishing the wall and pitching the pieces of brick into the water.

A garden pool can be your pride and joy but anathema to your neighbour. Your contented expression and your relaxed approach to life generally can strike daggers in the bowels of your one-acre neighbour. If you find the local Water Board inspector paying you frequent visits, it is not necessarily that he dislikes you, it is only that your neighbour feels that you should hold the hose in your hand when you are topping up or refilling the pond.

Sometimes, of course, neighbours are not bad tempered but merely thoughtless, like the time a number of good fishes were found floating dead at the surface. Insecticides are as much a part of horticulture as indigestion is to good health. Living downwind of an enthusiastic rosegrower can be as lethal to fishes as camping on top of a Power Station chimney would be to humans.

If you were to ask 24 pigeons who nest on the roof of adjoining barns what my garden pool is to them, they
would reply: 'The only free drinking and bathing pool for two miles around.' This gives them licence to drink my water and gratuitously to paint my fences white. Since the facility is shared with the greedy starlings, the chattering sparrows and a pair of delightful goldfinches, the lily pads are never free from holes as the birds precarciously balance on the leaves and preen themselves. The effect of this on the pool is to turn the water a dullish green-brown. Our tame pool psychologist would say this pool is for the birds.

Perhaps my late cousin Ernest Richardson gave the clearest answer I have known to 'What is a garden pool?'. His garden was relatively large and predominantly made up of clay. When he first moved into the house the winter saw his paths and flowerbeds under water and when the summer came round everything was dried and parched up. To him the only solution was a complete water garden, from the furthest fence at the bottom of the garden to the french windows at the back of the house. Studying every water plant brochure ever published, he zoned the garden to progress from the water lily in 3ft. to 4ft. of water to lilies in 1ft. to 2ft. of water, on through the submerged aquatic plants requiring 6 in. to 9 in. of water, then the partially submerged plants with aerial leaves on to the strictly bog plants, finishing with those bedding plants not averse to copious droughts of water.

The construction of the water garden comprised a conventional concrete pond built where the winter floodings were the most serious. Coming away from the main concrete pond the earth shelved upwards towards the house and over this was puddled clay and straw to a depth of 2 ft., which finally shelved away into the loam. The judicious use of rocks in the right places enabled a miniature Japanese garden to flourish and never have I seen so many different sizes in so small an area. The memory of having to pick one's way 300 ft. over rocks and flagstones through the plants of so many varieties and requirements to the main pool where pampered shubunks lie about, conscious of their exotic background enhancing their own bright colouring, leads me to exclaim in retrospect... 'That was a garden pool'.

**This one is a prize-winner!**

Actually there are two ponds here linked by a narrow waterway. They are owned by Mr J. R. Walker of West Bridford, seen in the picture, who won first prize in the Nottingham & D. A.S. Pond Competition this year (see also report on page 232). Mr Walker's first interest was gardening but since building this pond he has become enthusiastic about fish. Common goldfish, shubunks, fantails, veiltails, tench and golden orfe live in his ponds.

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**Marine Queries Answered**

continued from page 216

will not appreciably affect the chemical content of your final solution. If, however, you lived in an area where acid water was the only water available, then the addition of a little sodium bicarbonate before adding your synthetic salt mixture will correct matters.

*I have, I think, fallen into the beginner's trap of constructing too large a tank. I have a stainless-steel tank of size 6 ft. x 3 ft. by 18 in. by 16 in. width. I am anxious to use this large tank but have been told it is too big to filter satisfactorily. I want to use it for tropical marine use. Can you please advise on method of filtering and possible use of ozone?*

Yes, a tank 75 in. by 18 in. by 16 in. is, in fact, ideal for tropical marine use as many territorial fishes will be able to commandeer an area free of others. In a fish this size most of your tropical marine will grow almost to their full size.

A quite powerful filter of approximately 200 gallons per hour would be advisable. Although we do not know of any filter at present on the market capable of this throughput, it could be supplied for example by two twin-piston type Eheim pumps. An ozone unit would be a beneficial but not essential item of equipment. It can also be used for extraction of colloidal proteins by using it with a skimmer (see FISH MONTHLY, May 1967) and by so doing keep the water in good condition.

The beginner's trap is not generally constructing too large a tank, but quite the reverse!
In a recent article I bemoaned the fact that I had had a spate of exploding light bulbs in some of my tanks and invited suggestions from readers as to how the trouble might be averted. I was very pleased to hear from Mr G. Knight of Portrush, who most kindly sent me a model of a tank cover which he tells me has served him perfectly satisfactorily. I can quite believe this, since the principle is quite simple, but its effectiveness speaks for itself.

Mr Knight uses a wooden 'light box' type of cover which has a pane of glass inserted between the lights and the surface of the water. The level of the glass is just above the top frame of the tank, and the sheet is held in position by wooden bearers stuck to the side of the hood. Beneath the glass, affixed to the underside of the same bearer, is a metal apron, deeper at the back than at the front—the whole thing slopes slightly towards the rear of the tank. As a consequence Mr Knight kills two birds with one stone, as, in addition to preventing explosions, he neatly guides all that surplus condensation back into the water, where it belongs, instead of, as more usually happens with even the best of tank covers, down the back glass and into those unwelcome pools on the table top or the fish house floor.

The top of the hood is removable, enabling access to the lights or any other electrical points which one might care to fit in the condensation-proof chamber above the glass. The whole cover is lifted for the purpose of feeding or cleaning; it can be fixed to the top back frame of the tank with hinges if you care to drill the holes when the aquarium is next empty, but this is not really necessary as the back of the metal apron will keep it from slipping off when it is raised into the open position.

Mr Knight tells me that this hood has never let him down, even when using 100 watt lamps above his 75 inch tanks; in this event the front height of the hood is about 7 inches, but presumably with lower-powered bulbs and smaller tanks the whole affair can be trimmed down to a more suitable size without losing its effect. I hope other readers will benefit from Mr Knight's help and experience; as he is shortly starting on marines I hope perhaps that we may hear from him again in due course about the solution of some knotty problem or the other in this highly extending area of the hobby.

Reading through some old aquatic journals some weeks ago I read one or two accounts of quite incredible experiences, which, according to the books, simply couldn't have happened. Cropping up fairly regularly is the sort of story in which the aquarist temporarily suspends his hobby because of some domestic event just after some fish or another has spawned. He sells all the fish and sticks the apparatus in the loft. After about a year, back comes the urge and the opportunity to start up again, and after he has set his old tanks up he notices some fry in one of them, even though he has so far not bought a single fish! Suddenly he remembers that the fry look very like those Corydoras which spawned just as he was putting things into cold storage . . . And so the stories go on. How about letting PFM have some of your impossible stories? They need not be very recent happenings, but they must be authentic!

The aquarist who decides he has to embark on breeding the egglayers after achieving some degree of success with livebearers may well find that the old enemy of the hobby—lack of space—is a seriously inhibiting factor. Provided that a rearing tank or tanks are available it may be found that the early experiments may be quite satisfactorily conducted in a tiny floating tank accommodated in an existing aquarium. Small plastic tanks, and even sandwich and cake boxes of adequate size, can be used to spawn a number of the smaller egglayers.

After spawning, the adults can be flipped back into water of the same temperature with minimum trouble, and the eggs left to hatch of their own accord. Two things seem to be quite essential. One is that the bottom of the floating tank should be covered with sand or gravel, and the other is that you spawn a variety whose eggs are not adversely affected by light. The reason for covering the bottom of the spawning tanks is that if a clear bottom is used the fry try to swim through it and finish up by not spawning at all and wear sore patches on their lower jaws, which simply invites an early attack of fungus.

The flame fish is quite happy with a small tank of this sort, 10 in. long by 8 in. wide by 5 in. deep and even smaller will do. Glowlights will also tolerate this, and so should silver-tipped tetras. Zebras will need something bigger and are, in any case, not the best fish for beginners.
to breed successfully. Nylon mops are the best spawning receptacle in such confined surroundings, and should be removed as soon as the fry have reached the free-swimming stage. It will often be found that very effective control can be exercised over the spawning if this method is used, and a high hatch can be the result. It is futile to expect the young to live for long in small containers, so a large number should be transferred to similar water very soon after the free-swimming stage. The change may kill some or all of them, but at least you have an even chance of success. To leave all the fry in one small area, particularly if you are using infusoria or liquid fry food, will bring disaster because the competition for available oxygen will be too great.

F.B.A.S. and G.S.G.B. Agreement

The full text of the agreement reached in July between the Federation of British Aquatic Societies and the Goldfish Society of Great Britain is given below. (Discussions were held in London on 11th February, 2nd March, 3rd March, 4th July and 19th July 1967 between Mr C. A. T. Brown, Mr E. Jessopp and Mr F. Stone, for the F.B.A.S., and Capt. L. C. Betts, Mr G. H. O'Neill, Mr W. L. Wilson and Mrs Wilson, for the G.S.G.B.)

It is agreed that:

Each organisation will support the other in their aims and aspirations for the furtherance of better fishkeeping and the welfare of the aquarium and pondkeeping hobby.

One universal set of Standards for Goldfish is best for the hobby and the Standards as laid down by the G.S.G.B. meet this requirement. The F.B.A.S. will incorporate G.S.G.B. Standards with their own and the F.B.A.S. will formally withdraw their own Goldfish Standards in favour of those of the G.S.G.B.

The G.S.G.B. will place their panel of judges at the disposition of the member societies of the F.B.A.S. on the same terms as at present exist for F.B.A.S. judges. The G.S.G.B. agrees to the use of the existing F.B.A.S. coldwater judges providing they use the G.S.G.B. Standards in the spirit that is intended and without reservations. Where distance, cost and the smallness of the Show do not justify an official judge, lay judges may be used providing G.S.G.B. Standards are operated.

Adequate quantities of the G.S.G.B. Standards being available for distribution, the F.B.A.S. agrees not to publish these in whole or in part. When a reprint is necessary, the matter will be a subject for negotiation. Meanwhile, copies will be available to the F.B.A.S. at a discount.

To safeguard the mutual interests of both parties at any future time, should it be found necessary to terminate this agreement, this can be brought about by twelve months' notice on either side.

It is further agreed that:

G.S.G.B. Standards and judges will be used at competitive Goldfish Shows staged by the Goldfish Society. Open Shows staged by other Societies under F.B.A.S. auspices will be judged to G.S.G.B. Standards by G.S.G.B. class A judges and existing F.B.A.S. Coldwater class A judges. Organisers of these Shows may include classes for comets and veiltail moors. Closed Shows organised by these Societies may be judged by G.S.G.B. class A and class B judges and F.B.A.S. Coldwater class A and class B judges.

The F.B.A.S. will continue to appoint class B Coldwater judges.

The F.B.A.S. and the G.S.G.B. agree that Guides and Standards shall be available for Coldwater fishes other than goldfish and will jointly collaborate to this end.

The F.B.A.S. will be competent to raise matters relevant to this agreement with the G.S.G.B. and if required such matters will be jointly considered. The converse also to apply.

And further it is agreed that:

The G.S.G.B. will produce a Standard for the comet for publication by the end of 1967 and will recommend to the F.B.A.S. a Standard for the veiltail moor which the F.B.A.S. will publish by the end of 1967. If popular demand warrants it the G.S.G.B. will subsequently include it in its 'Popular Varieties'.

Clubs and Societies requiring a goldfish or Coldwater judge may make a personal approach to any judge or judges on the published list. The G.S.G.B. will appreciate being advised of such bookings. The G.S.G.B. will nominate a judge if requested. Judges who are both 'goldfish' and 'coldwater' will be so indicated on the published list.

It is recommended that this agreement shall operate from 1st January 1968.
Water Plants

Out of Water

It sometimes happens, when plants are bought for the aquarium, that a cutting will appear in a bunch of named plants that bears so little resemblance to the leaf formation with which the fishkeeper is familiar that he may well decide not to use the unknown quantity in his tank. In fact, the 'stranger' may well be the emerse (above-water) form of a well-known aquarium favourite.

Many of the plants that grow so well in our tanks are, under natural conditions, bog plants that thrive with only their roots submerged in water. They will grow completely submerged (though the growth rate is often much slower with total immersion), but the underwater leaf formation can be startlingly different from that growing above the surface.

This is shown clearly in these photographs of the tropical aquarium plant known as Indian fern (Ceratopteris thalictroides). Growing in a greenhouse in a heated sink with shallow water, the plant reached a height of 18 in. above the surface and the unsubmerged growth looked very different from that gracing our tropical tanks. If you have ever wondered why Indian or Sumatra fern is also known as water horn fern the appearance of the tough above-water foliage shown in close-up will explain this.
How to Hatch Brine Shrimp

Stirring It Up!

By D. S. WOOLFENDEN

It is generally agreed that if brine shrimp is to be hatched in quantity, the eggs should be kept moving in the brine.

The Americans can purchase an inverted plastic cone plus airstone and drain tap. In action the eggs fall down the sloping sides and on reaching the bottom are swirled upwards again with the rising bubbles. Britain seems to favour the flat-bottomed glass jar, where eggs miss the upward lift; but there are various types of large bottles and flagons available, which, if used upside down with the base removed, would approximate to the American cone.

There seems to be no need for a long tapering bottle neck; any ‘rounded top’ bottle will do. Several medicines are supplied in bulk to our chemists in 80 oz. (3 gal.) bottles or ‘Winchester quarts’ and these are non-returnable. Don’t be afraid to ask for them; you will be doing the chemist a favour in taking them off his hands. Make sure you get clear glass as some of them are brown. Generally, they have a plastic screw cap and the size ‘80’ is moulded into the base.

Removing the bottom of the bottle is not difficult. We all know that glass will crack if placed on a hot surface, although the crack line cannot be predetermined, so localised heat is the clue. Just in case it is necessary later, fix a wire or flex loop around the neck of the bottle so that it can be lifted and carried level.

Pour engine oil into the bottle to a depth of about 1 inch, not less. The surface of the oil will be the crack line. Now persuade the wife to go out for an hour . . . Stand the bottle in an enamel bowl full of cold water (this should be near but shielded from the heat of the fire and it is wise to cover the floor with paper). You will need two or three thick poker or iron bars, the thicker the better, just so long as they will pass down the bottle neck. Heat these to a cherry red and lower them in turn into the oil via the bottle neck. Don’t be alarmed if the first poker sets the oil on fire, the others won’t. Slight fumes ensue.

The idea is to get the bottled oil heated up as quickly as possible, whilst the water outside is kept cool. After several applications of the hot iron you will hear a ping and a hair-line crack will appear; if the air bubbles in the water at the oil level start increasing in size you will have to lift out the bottle and change the water for fresh, colder water.

Don’t attempt to clean the bottle just yet. Remember those glass edges are really sharp; with file or oil stone rub them down, then clean off the surplus oil and soot. Wash the bottle thoroughly and screw on the cap. It may need an extra layer of packing.

To support the bottle you can make a wire frame but Woolfords sell a 5 in.-diameter plastic plant pot (on the base: Wards, 5 in. Darlaston, Staffs.). The 80 oz. bottle is a tight fit in this. If the hatcher is to be stood in a heated tank then open the pot base with a hot poker. To prevent air locks bore small holes in the side of the pot. Finally add an air stone, and a quart of brine gives a good depth of liquid.

No eggs settle in this hatchery. The yield from the usual quantity of eggs seems to be greater than with conventional jars. Shrimp are siphoned off as usual, but you can use a plastic drain-off tube through the bottle neck.

It is worth noting that at 69°F the eggs take a week to hatch; at 72°F about 2 days.

Keep air stones efficient by alternately soaking them in brine and vinegar; this will remove the clogging salt. Rinse them clean afterwards.

INTERNATIONAL CATFISH

for those who like the ugly! This is partly a correspondence club for fishkeepers interested in the catfishes.

Secretary Mr Len McCourt, 36 Railway Street, Gorton, Manchester 18, explains that, all present, no subscription is required. You simply register your name and the species of ‘cats’ you are interested in with the secretary and you will be kept in touch.

Queries on classification, breeding, identification and rearing of the catfishes will be answered as ably as possible by the Manchester group headed by chairman, Mr Dennis Cotton. This group is a member of the Association of Manchester and District Aquarist Societies and will be arranging a catfish display at the A.M.D.A.S. open show on 15th November.
Readers' Queries Answered

Bottom-Feeders
I do not think that I am getting enough food to the catfishes and haliere in my tank. I have tried feeding after turning out the tank-lights, but the other fishes still seem to get most of the food. On the other hand I do not want to overfeed and I am thinking of putting some pieces of meat in a dip tube and transferring it to the bottom of the tank.

It would certainly be possible to place food on the bottom with a dip tube, but it should hardly be necessary. Tiny scraps of meat, red or white worms fed in small balls should all sink in sufficient quantity to enable the bottom-feeders to root the food out of the gravel as they need it. Dried foods in tablet form can also be purchased and these provide an easily available meal for the catfish and loaches.

Filtration
I have found your articles on filtration very interesting but I would be pleased to know how important this is for the home community tank.

Filtration cannot be said to be an absolutely essential procedure for the ordinary home community tank; that is to say—provided the tank has a healthy and thriving growth of plants in it and the fish are not overfed with dried food, the tank water should keep clear and sweet. However, filtration is undoubtedly a labour and trouble-saving technique. By its means, not only impurities but also troublesome floating algae can be removed from the tank, and much of the sediment inevitably forming is removed before it can collect in unsightly masses over the gravel. Water circulation also creates more even temperature throughout the aquarium. In particular, filtration is a very useful safeguard for the beginner to the hobby and helps prevent many of the troubles caused by the pitfalls of overfeeding and underplanting. For a review of types of filters see Petfish Monthly, October 1966.

Silver Sharks
Can you please give me some information about the silver shark? I have recently purchased two of these, but cannot find them listed in the standard text books.

References to these fish may be found under their scientific name Balantiocheilus melanopterus. Native to Thailand, they are very active and fast-swimming fish. They are not aggressive and, in fact, when first purchased are frequently very shy and nervous. They can, however, become quite large (up to 5 in.) and should be kept with peaceful fishes of a similar size (certainly not with eichids). Sex distinctions are not known nor are any details of breeding available. Live foods should be given regularly though large-sized dried food, such as flake food, will be taken. A well-planted tank will help the fish to settle down. The silver shark is a great jumper when disturbed and the tank should be well covered; when it does become accustomed to its new surroundings, it will be much in evidence in the tank.

Pond Leeches
Leeches appear to have established themselves in my pond during the summer and I am very anxious to get rid of them.

Although not all the many different types of leeches actually cause harm to fishes, their presence in a pond is usually regarded with disgust by pond-keepers. Short of cleaning the pond out completely and immersing the plants in a mild disinfectant (not a feasible procedure for the larger ponds), it is possible to reduce the leech population.

The handsome silver shark (Balantiocheilus melanopterus)
substantially by lowering into the pond each evening a plastic cylindrical container having a number of holes drilled in its walls and with a small piece of meat inside it to act as bait. The cylinder can be withdrawn after nightfall and the leeches adhering to it and the bait, killed by immersing the whole in strong disinfectant or very hot water.

**Spatterdocks**

*I am very anxious to grow a nuphar, to obtain a pleasing colour contrast in my tank (tropical) but seem to have no success at all with this plant. The cone gradually rots and really pollutes the water. What is the reason for this?*

Nuphars are very attractive plants to have in the aquarium because of their foliage, which is a pale bright green colour, but it may be that you are obtaining the wrong variety. Several of those obtainable just will not grow in the temperature suitable for a tropical aquarium. *Nuphar sagittifolium* (the Cape Fear spatterdock) or *Nuphar japonicum* (which is not very easy to obtain) are the species most suitable. To prevent the rhizome (not 'corn') rotting, it can either be planted in soil (in a pot at first until it has taken well) or it must be left to harden in the air and become sealed. In the latter case, since the leaves must be kept immersed, the plant can be placed upside down in the tank, with its leaves under the water and its root in the air.

**Weed Control near Ponds**

*I have a series of garden pools dug out of the heavy clay of my garden, in which goldfish and eels thrive. I find it impossible to control grass round the edges and between the pools where a woece cannot go. Is there any weed killer which will not hurt the fish? I have heard sodium chloride mentioned, but is it safe? Are there water lilies in the pools, which have a small but steady trickle of water flowing through them?*

It would be most inadvisable to use any weed-killer. It is very easy to get this splashed, blown or washed from the soil into the pool and even the smallest quantity might well prove toxic to the fish. Certainly sodium chloride is not safe, and it is most poisonous. Any weed-killer will be capable of harming your water plants and lilies, if not the fishes themselves. The problem might be met by placing slabs of decorative stone or rock to cover or decrease the grass-growing area.

**Candling**

*What is 'candling' of fishes?*

This is a method that is sometimes used for sexing the flat-bodied types of fishes. Fish sex organs are internal; while many have visible secondary sex characteristics, such as the gill tubercles of the male goldfish or the rod-like geoposum of the male livebearers, or show sex differences in size or behaviour, it is sometimes easier to distinguish between male and female characins, for example, by inspecting the internal organs. The fish are transferrred to a glass tank in a darkened room and a strong, narrow beam of light directed on the tank from behind. As the fish swim across the lighted area, their internal organs are silhouetted, and the differences can be seen. For example, male flame fish have a more pointed abdominal shadow than the females and in female black widows the half-moon ovary outline, that is missing in the males, can be seen. The method is more successful with fully mature fish than with small specimens.

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**Book Review**


The American publishers of the *Encyclopedia of Water Plants* are to be congratulated for bringing to the aquarists’ world this work of Dr. Jiri Stodola. His book presents for the aquarist fresh and enlightening descriptions of aquatic plants, with over 200 coloured illustrations by Mr. Vosaka, which are clearly reproduced and something never before attempted in colour in the world of aquatic botany. Although in the reproduction process from artist’s palette to printer’s block there has been slight exaggeration of colours in the illustrations the whole gives credit to the botanist, artist and publishers. The botanical glossary is a helpful inclusion for the understanding of aquatic plants by the amateur.

On one or two points in the text I feel I must make comment, for although I agree with its general advice for growing aquatic plants I found a too-frequent mention of the use of pots and compost media such as clay, peat, charcoal etc., also over-emphasis on such factors as pH and water hardness. The information given is correct and important to note for the growth of the plants in Nature and under greenhouse conditions, but for the aquarist who is looking at the plants for suitability as additions to his aquarium it is possible that the cultivation conditions recommended would be confusing and could even cause him to be ‘put off’ some plants. From my own experience I know that a great number of the plants mentioned in the book will grow with a large measure of success in normal aquarium gravel without the presence of further medium or either than mud present from the other aquarium inhabitants.

For one example, about Cabomba Dr. Stodola writes: ‘This plant does not tolerate water motion; and for this reason it plant it without any aeration or filtration’. In my experience I have obtained good growth with aeration and filtration; I agree that Cabomba does not do well with vigorous water movement, nonetheless I have found it in natural surroundings flourishing extremely well with slow water movement.

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The general arrangement of the book is clear and there is a full index. An unfortunate error in arrangement of diagrams for ‘biological type y’ and ‘biological type y’ seems to have occurred on p. 7. However, despite this and my criticism of the cultivation methods, on the whole I think this book is a valuable addition to the literature for all those interested in aquatic plants, scientists and amateurs alike, and it is a ‘must’ for the aquatic library.

T. Horeman
IT has always been the contention of forward thinking showmen in Britain that the specialist fishkeeper should compete with his own kind in the major shows. In keeping with this policy the Fancy Guppy Association offered a trophy for competition at the Federation of Scottish Aquarists' shows. Dr. R. E. Evans, the energetic show secretary, north of the Border, has accepted a silver cup on behalf of the F.S.A.S. to be named the "F.G.A. Trophy." It will be awarded to the best breeders team of guppies at each of their Conventions.

Incidentally, if you haven't seen a copy of the ambitious HANDBOOK the Scots hobbyists put out you should; it is crammed from cover to cover with useful information. Write to Robert Ferguson, Invervan, 27 Watson Street, Falkirk (price 2s. 6d., plus 6d. postage).

Guppy Comment
By BILL ARMITAGE

VISITORS to open guppy shows often complain of the difficulty of obtaining initial breeding stock, and there is no doubt that this complaint is justified. Considering that there are thousands of guppies bred in Britain every week, one wonders why this state of affairs exists.

Several of our national small live-stock clubs help beginners by including selling classes in their classifications. Should guppy clubs do this or would it, as some people believe, turn the clubs into commercial undertakings? If selling classes were adopted by the guppy clubs it could solve a lot of their problems. The beginner, by consulting the judging sheets, would know how many points had been awarded to the fish he was buying, the owner would receive a fair price for his guppies, and the clubs would benefit from the extra entry fees, also from a more steady influx of satisfied new members, and what is most important, of all the novice would be getting a good start. If the
PetFish Monthly's Guide to
Aquarium AERATORS

OVER the last few years aquarists have become increasingly aware of the benefits of regular filtration and aeration, in the form of cleaner, more attractive, tanks and healthier fishes. Most filters work on the 'air-lift' principle and their efficiency naturally depends on the suitability of the air-pump utilised. However, with such a wide range of aerators on the market the aquarist must be very careful in his choice to avoid disappointment at some later date, and this article is intended to help him make the wisest selection before parting with his hard-earned money.

By

CLIFF HARRISON

WEN the aquarist has decided to buy an aerator, well in advance of visiting his local shop, he should ask himself three important questions:

(1) How much air do I, and will I, need?

If filtration is the primary requirement it must be appreciated that air demands vary enormously for the different types of filters. The sub-gravel and bottom types are generally the most economical and need very little air at relatively low pressure for their operation; neither of these actually has to lift the water above its own level, but merely uses the air to power a 'flow' through the plastic tubes. Outside filters are much more demanding, whilst the new 'high-lift' models (such as the Halvin Filterfast range) rely for their large output on a copious supply of air, and are unlikely to work satisfactorily on the cheaper pumps.

Remember, as well, to consider your likely requirements in the future. Are you setting up more tanks, going in for more breeding or doing anything else that will demand a greater air supply than you need at present?

(2) Is the noise level of the pump a criterion?

Whilst some noise is tolerable in a fish house, a similar amount can be most irritating in a sitting-room display. The quietest pumps are generally those of the design described below in group B, though unfortunately this design is not incorporated in the cheaper types available.

A typical air-pump of the vibrator type (group A) is shown above the piston-type Hy-Flo Junior pump.
Diagram 1: 1. coil; 2. valve block; 3. diaphragm; 4. air outlet

(3) How much can I afford?

Whilst the output is normally relative to the price, quality is also involved to some extent: a well-made pump with slightly lower output is preferable to a similarly priced, but inferior, competitor. Reliability should always be regarded as one of the most important factors when purchasing aquarium equipment, and for that reason it is advisable to get a 'look at the works' whenever possible before making any purchase.

For the purpose of this Guide it is proposed to classify the aerators into three groups, A, B and C, based on their output (and hence the use to which they might be put): piston pumps are covered in a fourth group, D, as it is unfair to attempt a direct comparison between these and the 'vibrator' types.

**Group A**

These are the cheaper range of aerators, and are quite adequate for the hobbyist with one or two small tanks, who requires light, or occasional, filtration.

Typical examples are those in the Montrose range: the Minor (214.), the Major (214.), and the Magnet (276. 6d.). Though the latter is a rather more recent addition, the two smaller models have been on the market for many years—incorporating a number of modifications in design. These aerators are given good service in many homes, and have proved particularly popular with beginners to the hobby.

Other pumps to have stood the test of time in this very competitive market include the Star (410.), and the Fairy which, at 2.5p., shows a half-crown saving on its former price. The Star is one of the few pumps in this group to have an air output control, and is of particularly heavy construction. The Ex-Es manufacturers, well known for their range of aquatic equipment and supplies, have been producing aerators for a number of years (currently the Summit and Super-Summit at 214. and 25p. respectively). Inter-Pet, a firm of similar repute, have their own Mini Pump in its distinctive metallic-blue plastic casing at 214.

Owing to their design (see diagram 1) aerators of group A may develop an increasing 'buzz' with age, though this rarely impairs their efficiency.

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**Basic Design Features**

The basic differences between the two aerator designs shown on this page are:

(a) Flat-sheet diaphragms employed in the diagram 1 type of aerator are held in place by a metal or plastic ring: moulded rubber diaphragms, used in the aerator of diagram 2, tend to last longer and, being of larger diameter, give a higher output.

(b) If the vibrator arm in diagram 1 is incorrectly adjusted, it will strike the top of the coil (causing considerable noise); a distorted or badly-fitted diaphragm can also have the same effect. However, since the vibrator arm in diagram 2 keeps a constant distance from the coil no such thing can occur, and the steel-spring pivot also helps to minimise the transmission of vibration to the pump body.

Diagram 2: 1. coil; 2. valve block; 3. moulded diaphragm; 4. control screw; 5. steel spring; 6. air outlet
(it has been found that periodic adjustment and replacement of the diaphragm may help to minimise this noise.)

**Group B**

Aerators of this group are generally similar in design to diagram 2 and offer an output sufficiently high for the small-to-medium sized fish house. Perhaps the best-known in group B are those made by the French firm Rena; the Rena 100 model at 53s. offers particularly good value and is one of the quietest aerators available (therefore being ideal for display tanks). One unusual feature in its design is the resin-encased coil, which prevents any corrosion from a damp atmosphere. Whilst being able to power eight to ten bottom filters quite efficiently, it has proved very popular for use with the high-lift type of filters and is sufficient for even the largest \((L_4 \text{ 100 s.})\) Halvin model. The Rena Super has also proved to be excellent value at 53s. and many hobbyists have praised its performance and reliability. What is more, should replacement parts ever be required Rena provide a very efficient spares service for both models—most parts being available in pre-packed sealed polythene bags, at reasonable cost, from your local aquatic shop.

There are also two German aerators which, though not as well known as their French counterparts, are giving a very satisfactory performance in many fish houses. The Biko is a twin-diaphragm pump similar in design to the larger (single-diaphragm) Rena. The Zookebo Total (the largest in the Zookebo range) pivots on a rubber grommet rather than a steel spring; care should be taken with this type not to over-tighten the fixing bolt otherwise the output will be adversely affected.

**Group C**

These are the high-output air-pumps and compressors which are primarily intended for larger breeding establishments or for shop use. Many of these have been on the market for only a relatively short time, and it is therefore difficult to comment on their reliability and long-term performance.

The very neat and compact appearance of the larger Perma model \((L_4 \text{ 110 s.})\) is well matched by its performance in operation. Whilst basically a single-diaphragm vibrator, it has a unique and advanced design (see *PetFish Monthly* Test Report, August 1967).

**Group D**

The only piston pumps generally available at present are the four models in the Hy-Flo range, costing from \(L_4 \text{ 7s. 6d. for the Hy-Flo Junior to the big twin-piston Hy-Flo model C at } L_4 \text{ 12s. 6d.} The latter has proved particularly popular for serious fish-house work and whilst rather more expensive than comparable vibrator types, it has achieved such a high reputation for long and reliable service that its purchase might well be regarded in the nature of an investment. A few years ago the solid brass pistons were replaced by double-acting nylon ones, and an 8% higher output was claimed for this modification: however, regular lubrication and the occasional cleaning of the air-ways are still essential to ensure optimum performance from this type of pump.

Whilst lack of space restricts this Guide to specific mention of only the better-known aerators, there are certainly many other good 'buys' in this market (this is particularly true with the large number of new models introduced in recent months). The hobbyist would therefore do well, once he is clear about his requirements, to seek guidance of his local trader, who should, after all, be the best informed on the subject: plenty of advice will also be forthcoming from his fellow-hobbyists in the neighbourhood.

One interesting fact emerging from the preparation of this Guide is the virtual dearth of British-made aerators in groups B and C: there seems to be no explanation for this, since import duties and transport costs should weigh heavily against the French, German and Japanese products: one can only hope that some enterprising manufacturer will realise the great potential in this market and thereby do something to help our Balance of Trade figures.

**Guppy World**

**Continued from page 325**

At the beginner wishes to purchase stock at a show I think he should be encouraged to do so.

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**AT the 1967 Liverpool aquarium show**, the Liverpool section of the F.G.A. staged a highly successful open show. Although the show was a huge success from the members’ point of view, it was a far greater success from the propaganda angle. Thousands of people filed through the marquee all day, many of whom were seeing guppies for the first time in their lives. A number of new members were enrolled on the spot and several more interested visitors promised to visit the section’s headquarters with a view to becoming members. This show was an entirely new venture for the Liverpool section, and it was certainly one which paid dividends. It was a good example of progressive enterprise in bringing the guppy to the general public.

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**AT the combined show of the F.G.B.S. and the F.G.A. held at the Kingsstanding Settlement, Birmingham, Mr Ken Pierce, president of the F.G.B.S., offered for inspection a drawing of the original 1938 standards of the Guppy Breeders Society. As there are only standards for the males of four varieties in the drawing, i.e. roundtail, spear, lyretail and bottom swordtail, it must be assumed that the females were not included in those early standards. Evidently those pioneer breeders made the same mistake as is being made by present-day breeders—that of overlooking the need of high standard females on the show bench and more especially so in the breeding tank. I will be pleased to hear from readers who may have any information of the early days of guppy breeding.
Transatlantic TOPICS

By JIM KELLY

IT had, unfortunately, to happen sometime. That deadly combination of electricity and water, though creating a few 'shocks' in the hobby, had not been known to produce any fatalities amongst the ranks of hobbyists.

Now Francis M. McKinney, writing in the INTERNATIONAL ASSOCIATION OF ELECTRICAL INSPECTORS NEWS, reports the death of the young son of an American aquarist; the aquarium frame was 'alive' and the youngster earthed it with his body.

Mr McKinney writes: 'The sad thing about most aquarium set-ups is that they are not purchased as a complete unit, each separate part is bought and assembled at home. What is to stop any home owner from rigging his own lights from any old cord and a socket he may find in his junk pile?'

He requests that the U.S. Government act immediately and bring into force regulations to cover the installation of home aquaria—laws already in force with regard to other electrical appliances, outdoor ponds and swimming pools. Don't we all go for a swim with our hands every time we dabble with fish tanks?

In his excellent book ELECTRICITY IN YOUR AQUARIUM British authority Leslie Warburton makes no mention of the subject of earthing. When this book was first published I remember that this omission was defended by the author, who stated that even much discussion with experts he found the subject to be so controversial it was beyond the scope of the amateur aquarist, and he had left the subject alone.

The first known fattyly in the hobby through electricity now revives the old topic. After witnessing so many apparent electrical death traps in fish rooms all over the world, I cannot for the life of me say that this fatality has come as a surprise.

The cover story from ANCHOR, the official mouthpiece of the San Francisco Aquarium Society, concerns an article by that world expert on the Bagrid carfish, Dr Jayaram, of the Indian Zoological Society.

Discussing Myristeus ephippium (Bloch), nicknamed the Fiddler of Myers, he tells us it derives its name from the habit of creating a whining noise not unlike the buzzing of a bee when disturbed. The sound is made by the erect dorsal fin.

Other, not so attractive features of these carfish are their habits of attacking other fish with vehemence and shaking them to death before they eat them. In the aquarium, the Fiddler grows to about 5 inches. Its three horizontal blue bands on a gold and silver body make it quite an attractive fish to look at!
and had required a stay in hospital. That despite this painful handicap he was able to travel 400 miles to see the 'geopseas' as he pronounces the word, is a lesson to us all on enthusiasm.

** * **

A chat with a Florida tropical fish farmer revealed some interesting details. Florida now exports nearly two-thirds of the world's output of tropicals.

During shipment fish tend to void more nitrogenous matter in urine from their kidneys, and this rapidly makes the small quantity of water in the shipping container acid. The hobbyist or dealer, testing the water on receipt, gets the wrong impression and keeps the fish permanently in acid conditions—often with fatal results.

I put the accusation to this farmer many hobbyists believe that dealers deliberately sterilize fish before shipment. Rubbish, was the answer: 'We have neither the time nor the inclination for those practices'. Most cases when investigated proved to be due to lack of ability on the part of the aquarist to provide suitable diet and environment and some even to putting fish of the same sex together and expecting them to breed!

** * **

Letters to this column often ask if I can supply pen pals with 'fishy' interests in common from the U.S. and Canada. Now I am all for the exchange of news and views via letters and tapes but hesitate to burden my many friends in these countries with an increased mail. The answer has been supplied by hard-working and energetic hobbyist Douglas Dayton from 'my kind of town' Chicago. Douglas has started a pen pal exchange for tropical fish-keepers. Write to him at 300 N. Tripp, Chicago, Illinois 60614, U.S.A., for details.

** * **

We are bound to expect great things from anyone in the fish hobby with a name like Fisher, and Bob (Guppy Associates of Toronto) is no exception. Writing recently, he describes his experiments into the realm of artificially inesting guppies. His first efforts were encouraging and this field opens up new horizons for the aquarist with these 'difficult to breed' species. This column will keep you informed on future information.

** * **

Lovers of the fighting fish (Betta splendens) will be making their way to Milwaukee, Beez Town, U.S.A. this month. The attraction is the Betta Convention sponsored by the Splendid Betta Fanatics and Betta Betta Groups (I love those names). Subjects for discussion are a fairer scale of adjudication, recent research techniques and foundation of a registered pool for pedigree stock. Anyone interested should contact: Robert Lobickies, 348-A North Pulaski Street, Milwaukee, Wisconsin 53202, U.S.A.

Walt Matusz, one of the top experts in this field, tells me that there is a resurgence of interest in the fighter. In some states guppy clubs have gone over completely to the Betta. Is this a sign of things to come? As a guppy man, I certainly hope not.

** * **

A notice at a Mid-Western Aquarium Club meeting, placed there by the society's librarian, Dana, 'a little learning is a dangerous thing! Read a book on fishkeeping . . . live dangerously!'
HUTTON GRAMMAR SCHOOL A.S. were very pleased with the results of the Second Open Show. If entries were not so numerous as those submitted to senior shows, they were up by 100% over last year's and competition was very keen. Mr. Cliff Walker, F.I.A.S., judged the entries and the best fish in show award went to W. Booth (T.A.B.) who achieved 76 points for the male of his egg-laying pair, N. D. Swindell won the award for the best fish shown by a member of the School society and W. Booth the award for the competitor with the highest number of points. The award for the society with the greatest number of points went to T.A.B.

Detailed results were:

- Livebearer: J. J. Terry (Chorley), 20 only
- W. Booth (T.A.B.), 13, N. D. Swindell (Hutton, 64), Chiretea: W. Booth (T.A.B.), 9, N. D. Swindell (Hutton, 70), J. B. Bradley (Hutton, 64), Myers and leghorn: J. Miss E. Rabbett (Chester, 71), V. Booth (T.A.B.), 72, Cichlid: J. Miss J. Hayward (Chester, 71), W. Booth (T.A.B.), 60, G. Taylor (Chester, 63), Carassius and hybrids: J. W. Booth (T.A.B.), 70 and 65, N. D. Swindell (Hutton, 65), L. Whitehead (Hutton, 51), G. Less (Hutton, 64), A.A.S. tropical: J. Miss E. Rabbett (Chester, 71), W. Booth (T.A.B.), 72, Pairs: J. Miss J. Hayward (Chester, 71), W. Booth (T.A.B.), 74; N. D. Swindell (Hutton, 70), L. Whitehead (Chester, 64), Pairs egg-layers: W. Booth (T.A.B.), 74; J. Miss E. Rabbett (Chester, 71), N. D. Swindell (Hutton, 65), Breders egg-layers: J. Miss E. Rabbett (Chester, 71), W. Booth (T.A.B.), 54 and 73.

Dr. R. Tomlinson, chairman of the society, congratulated members at the annual general meeting on staging the junior open show. Although it might be ambitious for a small school society to stage an event to which outsiders were invited it was felt that the experience gained by those taking part in the venture was of enormous value; and the fact that it was decided to open a bank account underlined the society's healthy financial position. All officers were confirmed in office for a further year; though the position of chairman was left vacant by the departure of the present chairman to take up a new appointment in Warrington. Dr. Tomlinson was presented with a book in appreciation of all the help he had given the society. Officers for 1967-68 are: N. D. Swindell (25 Hennel Lane, Walton-Le-Dale, Preston, Lancs; phone 575656); treasurer: R. J. Stringer; equipment officer: J. S. Mainland; assistant secretary, J. H. Bradley.

THE FIRST in the 1967 series of interclub table shows between SOUTHEND A.S., BASILDON A.S. and THURROCK A.S. was held recently at THURROCK A.S. headquarters. The attendance was most encouraging with over 50 enthusiasts and their families making the journey. After a more informative talk by Mr. Dodkin of East London A.S. on the composition of water in fish breeding, Mr. Jessop, chairman of the F.B.A.S., judged the 71 fishes bench.

Results were:

- Barbs (39 fishes bench): 1, M. Creeveley (Southend, tiger bar, 79, 21, 2, Mr. Davis (Basildon, tiger bar, 72, 22, 3, Mr. Edward (Southend, R. scheltema); Platters (19 fishes bench): 1, Mr. Hinde (Thurrock, sunset platter, 76); 2, Mr. Durrant (Thurrock, red platter, 75); 3, Mr. Durrant (Thurrock, yellow wag platter, 75). For Nicholls (Thurrock, C. Powis, 75);
- Egg-laying toothpicks (11 fishes bench): 1, Mr. Durrant (Thurrock, C. Powis, 75); 2, Mr. Edward (Southend, F. platter, 75); 3, Mr. Williams (Southend, C. Powis, 75). For Nicholls (Thurrock, C. Powis, 75).
- The best fish in show award went to Mr. D. Durrant for a red fighter. After this last leg, points positions were: 1, Thurrock (24); 2, Southend (22); 3, Basildon (17).

THE OPEN SHOW organised by RYDE & المنتخب ORGANISERS, for Barking London Borough Council for the Dagenham Town Show on 8-9th July was highly successful. Over 250 entries were received and especially welcome was the interest shown in the furnished aquaria classes. The weather was excellent and a record crowd of 12,000 people visited the Show over the two days. The best tropical fish in show award went to Mr. D. C. M. Durrant (Thurrock) for a red siamese fighter, and the best coldwater fish award went to the bramblehead owned by Miss M. H. Baker of Hord & D.A.P.S. Thurrock A.S. won the cup for the club receiving most prize cards for the second year running. Detailed results are:

- Stocked and furnished aquariums (all): 1, B. Elder (Dartford); 2, Elder & D. (coldwater); 3, L.T.E. Aquatic Section (tropical); 4, Breders egg-layers (tropical); 5, Mr. W. Barber; 6, Mr. D. C. M. Durrant (Thurrock A.S.); 7, Mr. R. Reeves; 8, Mr. W. Barber and Mr. B. Elder; 9, Mr. W. Barber; 10, Mr. C. J. Greenhalgh (Kingswood, egg-layers). For tigers: 1, Mr. D. C. M. Durrant (Thurrock, Siamese red fighters); 2, Mr. M. Chaloner (Thurrock); 3, Mr. W. Barber; 4, Mr. R. Reeves; 5, Mr. M. Chaloner; 6, Mr. W. Barber.
- Scales and plaques: 1, Mr. J. G. Hare (Thurrock, platinum award); 2, Mr. G. A. Hare (Kingswood, red plaques); 3, Mr. S. H. Thomas (Thurrock, bronze plaques); 4, Miss W. H. Blood (Essex); 5, Mr. J. G. Hare; 6, Mr. S. H. Thomas.
THANKS largely to the efforts of aquarist Mike Fiddler, active chairman of the Gloucester Aquarium Society, the local authorities of Gloucester are sponsoring a series of lectures in their Adult Education programmes by that well-known figure in fish-keeping circles, Jim Cide. The first series of two-hour weekly instruction deals with all aspects of the hobby from the beginner's point of view; the second, six-week series will aim at the existing aquarist who wants to further his education. The lecturer believes that many fishkeepers would like to go deeper into the intricacies of the hobby, those that most of the books on the subject either left the reader in the air about or were too technical they were beyond the understanding of anyone lacking biological and zoological training.

Response to the series has been overwhelming and is bringing in aquarists from the surrounding districts.

Cost of each lecture is around one shilling, and the first course starts at the end of September. More information can be obtained from Mr. M. Fiddler, a Charleville House, Charleville Lane, Gloucester, Gloucestershire. This idea in further education could well be copied by education authorities throughout Britain.

3. Mr. T. D. Smith (Blandford, half back, 72), 4. Mr. G. Greenhalgh (Kingston, blue betta, 70). A.V. fishkeepers: 1. Mr. G. Hart (Pontcarmar, blind caw sture, 80); 2. Mr. H. T. Biddle (Pontcarmar, pesci fish, 81); 3. Mr. L. W. Jones (Bredagh, red-eye tetra, 75); 4. Mr. R. E. Partridge (Crawley, orange tetra, 75); 5. Mr. R. E. Partridge (Penzance, golden barb, 75). A.V. aquariums: 1. Mr. G. T. Hargrove (Kingston, silver splendour, 75); 2. Mr. E. A. C. Tomlinson (Kingston, silver splendour, 75); 3. Mr. R. E. Partridge (Crawley, orange tetra, 75). A.V. plants: 1. Mr. G. C. C. Tomlinson (Crawley, Philip's guppy, 75); 2. Mr. G. B. Ross (Hosie & Redhill, 80 and 75); 3. Mr. T. J. Croker (Hosie & Redhill, 75); 4. Mr. G. B. Ross (Hosie & Redhill, 75); 5. Mr. G. C. C. Tomlinson (Crawley, Philip's guppy, 75). A.V. aquariums: 1. Mr. G. T. Hargrove (Kingston, silver splendour, 75); 2. Mr. E. A. C. Tomlinson (Kingston, silver splendour, 75); 3. Mr. R. E. Partridge (Crawley, orange tetra, 75). A.V. fishkeepers: 1. Mr. G. T. Hargrove (Pontcarmar, blind caw sture, 80); 2. Mr. H. T. Biddle (Pontcarmar, pesci fish, 81); 3. Mr. L. W. Jones (Bredagh, red-eye tetra, 75); 4. Mr. R. E. Partridge (Crawley, orange tetra, 75); 5. Mr. R. E. Partridge (Penzance, golden barb, 75). A.V. aquariums: 1. Mr. G. T. Hargrove (Kingston, silver splendour, 75); 2. Mr. E. A. C. Tomlinson (Kingston, silver splendour, 75); 3. Mr. R. E. Partridge (Crawley, orange tetra, 75). A.V. plants: 1. Mr. G. C. C. Tomlinson (Crawley, Philip's guppy, 75); 2. Mr. G. B. Ross (Hosie & Redhill, 80 and 75); 3. Mr. T. J. Croker (Hosie & Redhill, 75); 4. Mr. G. B. Ross (Hosie & Redhill, 75); 5. Mr. G. C. C. Tomlinson (Crawley, Philip's guppy, 75). A.V. aquariums: 1. Mr. G. T. Hargrove (Pontcarmar, blind caw sture, 80); 2. Mr. H. T. Biddle (Pontcarmar, pesci fish, 81); 3. Mr. L. W. Jones (Bredagh, red-eye tetra, 75); 4. Mr. R. E. Partridge (Crawley, orange tetra, 75); 5. Mr. R. E. Partridge (Penzance, golden barb, 75). A.V. aquariums: 1. Mr. G. T. Hargrove (Kingston, silver splendour, 75); 2. Mr. E. A. C. Tomlinson (Kingston, silver splendour, 75); 3. Mr. R. E. Partridge (Crawley, orange tetra, 75). A.V. plants: 1. Mr. G. C. C. Tomlinson (Crawley, Philip's guppy, 75); 2. Mr. G. B. Ross (Hosie & Redhill, 80 and 75); 3. Mr. T. J. Croker (Hosie & Redhill, 75); 4. Mr. G. B. Ross (Hosie & Redhill, 75); 5. Mr. G. C. C. Tomlinson (Crawley, Philip's guppy, 75).
THE TIME kept by members of BARROW & D. A.S. in putting on a display of tropical fish as part of the centenary celebrations of Barrows-in-Furness and Vickers Ltd, was felt to be really worthwhile when it was seen how great an interest was shown by the public in the various types of fishes and aquaria on show. The club had built an island stand to contain 10 tanks and this was erected in the Vickers sports-ground where the Centenary Gala took place. Even club members were surprised by the general interest in the display. "Miss Vickers" who was elected at the Gala turned out to be an aquarist herself.

Other club activities have not been neglected and at a recent table show for home-bred fish, the Liveredge Cup for egglayers was won by Mr M. Wall (drift gourami); 2, Mrs E. Pilton (cherry barb); 3, Mr A. Pilton (cherry barb). The Turton trophy for livebearers was won by Mr W. Teagle (guppy); 2, Mr D. Moloneaux (guppy); 3, Mr R. Crayston (platy awards).

AT the first open show for tropical and coldwater fishes held by CHELSTONIA & D. A.S. at the beginning of July, the show opened by Councillor D. G. Aldridge and trophies and prize cards were presented by Councillor T. O'Brien. A plaque was presented for the best stand in the show to Mr F. Brown of Bristol. Mr Brown also received a medal from Cheltenham & D. A.S. together with a special award entitled Mr Brown to compete in a contest to be held at the British Aquarists' Festival this year. Detailed results were:

Breeder egglayers: 1, Mr King (Barb); 2, Mr R. Hopper (Cheltenham); 3, Mr J. Forwood (Bristol). Darter: 1, Mrs W. D. Valentine (Bristol); 2, Mr. C. Milner (Cheltenham); 3, Mrs D. H. Valentine (Bristol). Shovelnose Catfish: 1, Mr R. Hopper (Cheltenham); 2, Mr W. D. Valentine (Bristol). Gourami: 1, Mrs W. D. Valentine (Bristol); 2, Mr C. Milner (Cheltenham); 3, Mr R. Hopper (Cheltenham). Slender Gourami: 1, Mr W. D. Valentine (Bristol); 2, Mr C. Milner (Cheltenham); 3, Mr R. Hopper (Cheltenham). Dwarf cichlids: 1, Mr and Mrs Delves (Bishopston); 2, Mr E. Powell (Tavistock); 3, Mr T. Young (A.M.P.S.).

Livebearers: 1, Mrs A. P. Evans (Bristol); 2, Mr and Mrs Delves (Bishopston); 3, Mr J. Forwood (Bristol). Platy: 1, Mrs C. Milner (Cheltenham); 2, Mrs W. D. Valentine (Bristol); 3, Mr D. H. Valentine (Bristol). Guppy: 1, Mr W. D. Valentine (Bristol); 2, Mr C. Milner (Cheltenham); 3, Mr R. Hopper (Cheltenham).

FURTHER details have now come in of the organisation of AMENS - THE ASSOCIATION OF MANCHESTER AND DISTRICT AQUARIST SOCIETIES, that was formed in March of this year, when it was felt that the number of clubs in the South Lancashire area, within travelling distance of Manchester, was so great that some liaison was needed. Founder member societies are: Belle Vue A.S., Glossop A.S., Gorton & Openshaw A.S., Haywood A.S., International Carlfish, Knutsford A.S., Massculefi A.S., Oram A.S., Rochdale Breeder, Salford A.S., Stockport A.C., Tropical Aquarium Breeders and Meresey A.S. Film libraries, large scale lectures, social evenings, dances and a national Open show are all in the planning stages, but one of the main attractions will be the NORTHERN SHOW LEAGUE run at open shows held by member societies. The League is run on an individual points basis.
and the society with the highest number of points at the end of the year will be awarded the League Champions Trophy presented by Mr John Yates of The Pet Trader. The AMDAS open show for its member societies will be held on the 19th November.

Officers for the first year are: Chairman; Mr M. Fidler (Glasgow); vice-chairman; Mr E. Prins (Gorizia); treasurer, Mr H. Lasko (Belle Vue); secretary, Mr L. McLeone (International Catfish); show secretary, Mr T. E. Davies (Heywood). Show Committee: Mr Thompson, Mr Berning, Mr Crompton, Mr Willett, Mr Unsworth, Mr Fletcher, Mr Prins, Mr Booth, Mr Hillary, Mr Wolkencraft. Managements Committee: Mr Chaelton, Mr Hasford, Mr Taylor, Mr Gibbons, Mr Hasford, Mr Taylor, Mr Gibbons, Mr Beyer, Mr Millings, Mr Ingram, Mr Parkin, Mr Preston, Mr Newsome, Mr Cook. Applications for membership should be made to secretary Mr L. McCourt 36, Railway Street, Gorton, Manchester 8.

LATEST DEVELOPMENT FROM THE INTERNATIONAL MARINE STUDY SOCIETY is the inauguration of a " Seal of Approval " system for use by manufacturers and distributors of marine plants. Equipment will be submitted for examination by the Technical Panel of the Society and the claims made with regard to quality, durability and performance tested. Where the goods concerned are thought to be fully proven the Seal of Approval can then be added to the goods. Manufacturers who wish to obtain further details of the scheme should apply to Mr G. Jennings, 2 Gatcombe Road, London, N.10.9.

THE CHELTENHAM SECTION OF THE FEDERATION OF GUPPY BREEDERS' SOCIETIES were only formed last October and are present with only six members, but their first open show held in July was very successful. Mr Delingpole, Mr Court, Mr Pearce and Mr Jenkins judged the 130 fishes on hand; the best fish in show award went to the Robson female owned by Mrs Court. Class winners were:

Guppies: 1, Mr G. Jennings (Glasgow); 2, Mr R. F. Baysun (Basingstoke); 3, Mr E. Prins (Gorizia); 4, Mr F. F. Gilmour (Clydebank); 5, Mr B. Bearis (Basingstoke); 6, Mr M. D. Larder (Huddersfield); 7, Mr K. L. Bannister (Clydebank); 8, Mr A. R. B. R. Watson (Clydebank).

Though few in number, the host members were well ‘in the cards’. Mr Norman Binding, Mr Norman Hughes and Mr AI Binding taking firsts. At a recent table show, Mr Al Binding placed the first silver pin of the section. Secretary, Mr B. H. Baysun (4 Turquoise Road, Bendall, Cheltenham) welcomes enquiries from those interested in joining the section.

MR R. F. BAYNUTN, chairman of HIGH WYCOMBE A.S., gave a most encouraging report for the year at the society's recent annual general meeting. Membership had increased to 155 from 84, and club functions had included three very successful socials and three table shows, talks and club competitions; the club had also entered the Three Counties show. Earlier in the year, Mr E. Chestfield, a member for many years, was made a life member and elected an honorary vice-president. Officers elected or confirmed in office for the year are: chairman, Mr R. F. Baysun; vice-chairman, Mr A. R. B. R. Watson (Basingstoke); secretary, Mr R. Thomas (Clydebank); treasurer, Mr A. R. N. Wilson; librarian, Mr E. Chestfield; equipment officer, Mr R. Thomas; show secretary, Mr C. Pike (16 Ashley Drive, Tylers Green, Ford, Buckleigh); publicity officer, Mr P. H. Halliday; committee, Mr B. Pearce, Mr C. Beavis, Mr R. Cousins.

New members are very welcome in this friendly society and can see the society at work at its annual open show on 2nd September at The Rye, High Wycombe.

100 ENTRIES were breasted at the BASINGSTOKE A.S. Open show on 3rd July. Mr W. Ryder (Portsmouth) Mr J. Stillwell (Portsmouth) Mr C. Brown (London) and Mr R. Madley (Poole, Dorset) judged the fishes and
the best fish in show award went to a blue acea shown by Mr L. Jorden of Brandall A.S. The highest points for one fish award for Basingstoke members went to Mr R. Keeping for a clown barb. The Basingstoke Bill Bowes Lock Memorial Cup for the highest total points achieved by a Basingstoke member also went to Mr R. Keeping; the F.B.A.S. Shield for the best characism went to the headstander owned by Mr Scott Morgan (out of a class of 35 fish).

Detalled results are:


Bournemouth's Revival

THE PICTURE brought to mind the name 'Bournemouth' is mentioned that of a thriving holiday resort, and thriving is also the correct word for the BOURNEMOUTH A.C., who held their first ever show in recent years on the 16th July. Some 400 fishes were bunched from places as far apart as London, Bristol and Brighton, and travelling to the show was made much more pleasant by the exceptional fine weather that day. The three F.B.A.S. judges who undertook the always difficult task of judging this large number of entries were Mr J. Stillwell from Portsmouth A.S., Mr Ron Matley of Bournemouth and a third judge from Yeovil A.S.

Bournemouth members, during the show, expressed the opinion that part of the success of the show was due to its being held on a Sunday, and that things would not have gone so smoothly had it not been for some enthusiastic members who rose very early that day to erect the staging. Two local traders' stands, from Victoria Tropicals and Atlantis Aquarium, both showed a wide range of goods and proved very popular with the 600 members of the public who viewed the show during the afternoon. Detailed results are:

GOSPORT & D.A.S. held their first ever show in July. It was supported by club members from Brighton, Bournemouth, Portsmouth, Southampton, Salisbury and Wiltshire and 194 fishes were bunched. The best fish in show award went to Mr Andrews for a silver shark. Detailed results are:


CLUB reports published in the Australian fishkeeping magazine recently reveal fascinating aspects of the hobby there: 2,000 silver scales caught in Brisbane River last year by Brisbane club member Mr Ern Young ('Plenty more where they came from' reported Mr Young). 'Aqua' as a new item included by the Queensland Government in the school syllabus during 1986. Problems in Melbourne during the summer heat wave of preventing the loss of whole tanks of fish unable to withstand two successive temperatures maxima of 105°F. Plenty of Daphnia in farm dams around Canberra, but tubifex worms not always available. Six in-long centipedes in a fish house 40 miles outside Melbourne!

In Brief . . .

THE AQUARIUM AND TERRARIUM SOCIETY of Brisbane, Queensland reports that inspectors created a stir there recently when they confiscated all the silver scales being sold by local dealers. These fish now come into the category of 'edible fish' and therefore fall under the rules applicable to commercial fishing. The editor of the magazine, published by the Aquarium Society of Victoria, is intrigued by the thought of all those Queenslanders addicted to Grilled Silver Scales to Tarts!

CONGRATULATIONS to BRADFORD & D.A.S. on winning again for the third year in succession, the award presented by the ASSOCIATION OF YORKSHIRE AQUARIST SOCIETIES to the society that gains most points at AYAS open table shows.

TABLE SHOW for cichlids results for July at the meeting of ABERBOURGH & D.A.S. were: Specified class: 1, Mr Lister; 2 and 3, Mrs Whiteley. Novice class: 1 and 3, Mr Colman; 2, Mrs Iverson. A.o.V. class: 1, Mrs Whiteley; 2, Mr Magon; 3, Mrs Lister. Junior class: 1 and 3, Master Lister; 2, Master Lawson. Best fish of the month cup: Mr Whiteley. First place in the yearly points table are therefore specified: class 1, Mr Whiteley; 2, Mr Iverson; 3, Mr Lister. Novice class: 1, Mrs Iverson; 2, Mrs Whiteley; 3, Mrs Burnup. Junior class: 1, Master Lister; 2, Master Kershaw; 3, Master Lawson. A.o.V. class: 1, Master Lister; 2, Mr Whiteley; 3, Mr Iverson. The table showed following information talked given by Mr Winterburn on the preparation of aquarium dried foods.

CHAIRMAN Mr John Thorne gave a very interesting talk to club members at the HOUNSLOW & D.A.S. on hybridisation in fishes. Table show results were: Livebearers: 1, Mr John Thorne (red swordtail); 2, Mr Alan Fleming (guppy); 3, Miss Jackie Charlier (albino swordtail). Cats and loaches: 1, Mr John Thorne (albino Clarias); 2 and 3, Mr Clive Walker (kubhi loach). New members and visitors are always welcome at club meetings, which are held on alternate Wednesdays at 8.00 p.m. at the Community Centre, Clifton Road, Edgeworth. Further details from secretary, Mr Derek Woodward 16 Elmbridge Road, Hounslow, Middlesex.

. . . THE application of BEDWORTH A. & P.S. to join the MIDLAND AQUARIST LEAGUE was voted upon and carried unanimously at the M.A.L. annual general meeting of 1967.

. . . JUNE 1967 saw the formation of the SHASTON AQUATIC SOCIETY, when a committee was formed as follows: Chairman, Mr B. Cotthill; secretary Mr K. Forward (7 Pill Meadow, Kingston Magas, Gillingham, Dorset); treasurer, Mr J. Merryfield; committee, Mr R. Legg, Mr G. Rolley. Maintaining club attendances during the holiday season is always a problem and this new society has the added difficulty of the haymaking season to cope with, but the known enthusiasts in the area are urged to attend meetings as soon as they are free. These are held at the British Legion Club, Shaftesbury, Dorset on the second Friday in every month at 8.00 p.m.

ROMFORD & BEACONTREE A.S. would welcome new members. Meetings are held at the Mawney Road Baths, Romford every other Thursday at 8.00 p.m. Secretary Mrs K. Heath, 336 Mawney Road, Romford. Essex will be pleased to answer enquiries (phone Romford 4784).

. . . THE FIRST six positions in the NORTHERN SHOW LEAGUE table (five major open allows held, seven to go) are held by: Merseyside A.S. and Glossop A.S. (joint first, 165 points), Osram A.S. (154), Greens & Openshow A.S. (123), T.A.B. (123), Heywood A.S. (120).

. . . MR James Turner of 13 Greenmount Drive, Burntisland, Fife is the new publicity officer of the FEDERATION OF SCOTTISH AQUARIST SOCIETIES.

. . . THE MIDLAND ASSOCIATION OF AQUARIST SOCIETIES are to issue a newsletter so that its 30 member societies can be kept fully informed of the activities of the Association. Mr Bob Dacosta, 14 New Street, Rugby invites suggestions, views and criticisms for publication from M.A.S. members.

. . . TABLE show results at the July meeting of NEWPORT A.S. were: A.vey, catfish: 1, Miss P. Peacock (Poncystichopus granulosus); 2, Mr T. G. Wall (C. aeneus); 3, Mr A. J. Payne (Mystus spp.), a.o.V. cichlid: 1, Mr L. Sadler; 2, Mr J. Overland; 3, Mr J. Lowndes and Mr A. J. Payne. All winning cichlids, except for the P. lineatus of Mr Payne were brown acara.

. . . MR Michael Parry, Newport's show secretary, judged the fish.

. . . A CLUB meeting that took the form of a Daphnia hunt at a local pond proved both entertaining and rewarding to members of HALTON & D.A.S. recently. Members' fishes benefited too. Another very entertaining meeting was the "Take Your Pick" quiz, which proved to be one of the highlights of the season.

. . . A CHANGE of venue and meetings for BRACKNELL & D.A.S. Club meetings are now held on the first and third Mondays in the month at The Admiral Cunningham, Priestsquare, Windlesham Road, Bracknell, Berks.

BEDWORTH A. & P.S. and NUNEATON (N.A.S.) are to hold an inter-club competition. Two shows are arranged for this year, in September and October, four classes for each class per show. Points will be awarded on a 4, 3, 2, 1 basis; plaques and cups will be presented for winning fish and a trophy awarded to the winning club.

. . . THE ATTRIBUTES of a successful fishkeeper were defined by Mr Alec Firth, when he lectured to beginners at BRADFORD & D.A.S., on ‘Patience, ability to devote time and hard work to the hobby, willingness to learn and to become’. Describing his success with breeding the egglayers, especially guppies, Mr Firth stressed that barbs need aeration and sediment-free water and that filter carbon must be thoroughly washed before use.
if it is not to cause young barbs to suffer from inflammation of the gills.

... RUGBY & D. A.S. members enjoyed a most interesting talk by Mr Blackwell, formerly a member of the Wellingborough Zoo, when he spoke on Nigrius where he was in charge of a small zoo. The talk was illustrated with 200 slides that included fine shots of the coastal area abounding in Malayian angels and the ponds which are left during the dry season and where cichlids and top minnows are caught.

... Runnymede A.S. members have devoted much time recently to their entry in the hobby exhibition of the Staines Carnival. A British Killifish Association slide and tape show proved good value and was enlarged upon by B.K.S. member Mr J. Sweeney at a following meeting.

Table show results for furnished jars were: 1st and 3rd, Mr H. Pullen; 2nd, Mr MacDonald; Barbs and a.o.v. show winners were: 1st, Mr P. Grovesome; 2nd, Mr E. Parry; 3rd, Mr V. Robinson; 4th, Mr P. Grovesome; 2nd, Mr M. Haskinborough. The inter-club table show with BRACKNELL A.S. resulted in a close win for Runnymede by 930 points to 923. Cards went to 1st, Mr Parry (Runnymede); 2nd and 3rd, Mr and Mrs Carter of Bracknell.

... at their leg of the NORTHWEST LONDON GROUP OF AQUATIC SOCIETIES competition, HAMPSTEAD & D.A.S. were hosts to the four other group members, Independent A.S., Riverside A.S., Willesden A.S. and Hendon A.S. The best fish in show award went to Mr T. D. Smith of Hendon A.S. Judge was Mr A. G. Jessop, chairman of the F.B.A.S. Hampstead and D.A.S. welcome enquiries from prospective new members who should contact Mr K. Pye at the club's meeting place, 33 Staines Road, London, N.W.3 (phone PRI 5888).

... RESULTS OF THE THREE COUNTIES LEAGUE show, which BASINGSTOKE & D.A.S. were the host club, were: 1st, Reading (1045 points); 2nd, Didcot (513); 3rd, Bracknell (373); Basingstoke (39). Judge was Mr J. Stillwell (Farnborough).

... RHYL fishkeeping enthusiasts! Anyone interested in the setting up of an aquatic society in this area should contact Mrs Linda Gooden, 15 East Parade, Rhyll, Flintshire as plans are afoot to start a club there.

dates for your diary

21st-25th August, MIDLAND OPEN SHOW (see 3rd). Bingley Hall, Bingley, Bradford. Details from Mr E. J. Wigg, 149, Mildenhall, Reading, Berks.

25th-26th August, BRITISH KILLIFISH ASSOCIATION Second International Killifish Show (incorporated into the Midland Open Show—see above).

27th August, HARLOW TOWN SHOW. Details from Mr J. C. Dunsan, 43 Long House, Budleigh Salterton, Devon.

25th and 26th August, OSRAM A.S. Two-Day Show.

25th August, HIGH WYCOMBE A.S. annual Open Show. The Bee, High Wycombe, Bucks. Details from Mr A. F. Green. This show is put on by the QUEEN'S UNIVERSITY AQUARIUM ASSOCIATION OF ENGLAND. Details from Mr G. C. Thomas, 11-14, Addington Drive, Tyers Green, Pinner, Bucks.

25th September, FEDERATION OF BRITISH AQUATIC SOCIETIES Assembly.

25th September, YATE & D.A.S. annual Open Show. The Bee, High Wycombe, Bucks. Details from Mr A. F. Green. This show is put on by the QUEEN'S UNIVERSITY AQUARIUM ASSOCIATION OF ENGLAND. Details from Mr G. C. Thomas, 11-14, Addington Drive, Tyers Green, Pinner, Bucks.

25th September, NATIONAL JUDGES COURSE. The Midland Association of Aquarists are holding this course at Kingstanding, Birmingham, beginning on 3rd September.

25th September, ROGATE & REDHILL A.S. Open Show. Details from show secretary Mr G. H. G. Bird, 2, Cottage House, Rose Road, Redhill, Surrey.


Details from secretary: Mr J. Butterworth, 53, Broadway Crescent, Greenmount, Mr Burd, Letchworth.

25th and 26th September, NOTTINGHAM & D.A.S. National Open Fish Show, Dees Hall, Triumph Road, Nottingham. Details from Mr W. J. Christian, 40, Moore Lane, Burntisland, Scotland.

25th September, HUDDERSFIELD TROPICAL FISH SOCIETY Fifth Open Show.


25th September, BRISTOL A.S. Annual Open Show. Memorial Hall, Fishponds.

25th September, Atherstone A.S. second Open Show. Memorial Hall, Atherstone.


25th September, FEDERATION OF SCOTTISH AQUARIST SOCIETIES. Details from Mr G. C. Thomas, 11-14, Addington Drive, Tyers Green, Pinner, Bucks.

25th September, STOCKPORT A.C. Open Show.

25th September, AMERSHAM & DISTRICT A.S. Open Show. Woodgreen Community Centre, Amersham. Details and schedule from Mr C. P. Edwards, 21, Oldfield Road, Amersham, Bucks.


25th September, MEDWAY A.S. Open Tropical Show. St John Fisher School, Orts Avenue, Chatham, Kent. Details from Mr K. Brown, 5, Allerton Avenue, Gillingham.


25th September, MIDHerts A.S. Open Show. The Fairleigh Hall, Victoria Street, St. Albans. Details from Mr D. R. Lobb, 29, Prospect Road, St. Albans.

25th September, ROCHEDALE TROPICAL BREEDERS ASSOCIATION Open Show. Free Hall, Smith Street, Rochdale, Lancashire. Details from Mr A. D. Milburn, 5, Hallamford Road, Rochdale, Lancashire.

25th September, STONE A.S. Open Show (preliminary).

25th September, GOLDEN FISH SOCIETY OF GREAT BRITAIN Convention. Chesire Community Centre, 355 Kings Road, Chester, Cheshire.

25th-26th October, BRITISH AQUARIST FESTIVAL organized by the Federation of Northern Aquarists Societies, Belle Vue Zoological Gardens, Manchester.

25th November, GOLDEN FISH SOCIETY OF GREAT BRITAIN quarterly assembly.


25th November, ASSOCIATION OF MANCHESTER & DISTRICT AQUARIST SOCIETIES Open Show.

25th November, LEEDS & D.A.S. Open Day Show. Details from show secretary Mr G. H. G. Bird, 2, Cottage House, Rose Road, Redhill, Surrey.

25th December, FEDERATION OF BRITISH AQUATIC SOCIETIES Assembly.
Classified ADVERTISEMENTS

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