

# The Aquarist

and Pondkeeper

FEBRUARY 1965



MONTHLY  
Vol. XXIX No. 11

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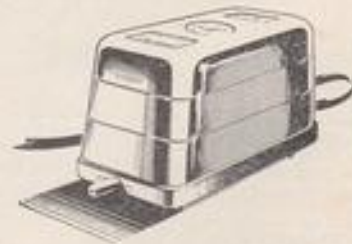
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Tetracare all 4/6 each			

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Type QK	25/-
UNO	18/-
Out/Adj.	18/-
In/Adj.	15/-
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Air Lift	each	2/6
"Slim Jim" Outside	each	17/6
Filter	each	22/6
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Filter	each	22/6
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Myriophyllum	each	9d.
Cryptocoryne Becketti	each	2/-
"Willitt	each	2/6 and 5/-
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Giant Hygrophila	each	2/6
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Stones	each	1/- to 1/6
"T" Piece	each	1/-
Aerator Tubing	each	ft. 4d.
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# The AQUARIST AND PONDKEEPER

Founded in 1924 as "The Amateur Aquarist"



VOL. XXIX No. 11

1965

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MIDDLESEX

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## Fish in the Bedroom

SOME months ago in *The Aquarist* the subject of conflict between the aquarist and the rest of the family was discussed in the Editorial. Such conflict usually results from finding accommodation for aquaria in the home. Having experience of this myself, I can suggest a partial solution to the accommodation problem.

Two particular aquaria—one for breeding guppies, as I suggested in my article in *The Aquarist* (June, 1964) and a community tank—I wanted to have inside the house. Due to family pressure, reasons were always found for their removal. As a last resort I considered the difficulties of keeping two tanks in my bedroom. To think of doing so seemed absurd until I considered specific difficulties.

The first apparent drawback was that of fluff from sheets and blankets getting into the water. Having kept the tanks in my bedroom for the past 6 years, I can state that this problem is non-existent. I use the normal tank



cover glass with a flap of polythene over the open corner left for feeding. At no time have I noticed any evidence of fluff in either tank. The effect of a moist atmosphere in the bedroom has to be considered. This, I would say, has been an advantage in that it has, presumably, helped to keep down dust.

The main problem is that of weight. When filled with water an aquarium can be a considerable weight, and one must ascertain the total weight and make sure that the room floor is capable of supporting it. An upstairs bathroom enables one not to have to carry buckets of water precariously upstairs to fill aquaria.

Why choose one's bedroom for fish tanks? I have spent many happy hours—before sleep and on waking—in bed, watching my exotic room mates, and I have yet to find a better cure for insomnia. For the aquarist who is away from home all day, one or two tanks in the bedroom give that extra time to enjoy the pleasure of viewing one's favourite fish.

Billy Whiteside



*Pardon me—*

## Your Slip is Showing

*says* JIM KELLY

**T**O me a fish show means a pleasant way of passing a few hours in the company of 'fishy types' and a chance to keep abreast with the latest practical aspects of the hobby.

By supporting these club efforts and taking part in the raffles etc., one gets a feeling that, even in a small way, one is swelling the finances of the organising society. But why must these otherwise pleasant get-togethers be spoilt by the odd 'belly-acher'? These types travel about complaining of everything from the catering arrangements to the judging... and the latter comes in for the brunt of it!

At most shows the fish are judged twice. Once in the morning when you, the exhibitor, think they are worthy of taking to the show, and again 'officially' on the bench by the duly appointed judge.

When these two decisions agree then everything is rosy, but when they do not... you've heard them: 'the judge needs glasses', 'should have retired years ago', are but two of the pleasanter remarks one usually hears.

In coming to a decision a judge has many aids—standards, pointing systems, rules and regulations, but despite all these a large amount of the final result must be the personal conclusions (based on knowledge and experience) of the examiner.

A large proportion of the marks allocated (a fifth in the Fancy Guppy Association) go to condition and deportment! Condition is soundness of body and fin, deportment referring to the carriage and behaviour of the fish.

The judge marks his sheet as he sees the fish at the moment of judging and not when the exhibitor and the public get a chance to see them, usually some time later.

Most judges will back me up when I state that at quite a large number of shows a fish will skulk in the corner of the jar or tank, absolutely devoid of colour during the judging, only to become as lively (and just as colourful) as a cat on a hot tin roof when viewed later by the exhibitors and public.

### Common 'Slips' by Showmen

Every year, at one of our biggest shows in Britain, the British Aquarists Festival, numbers of fishes die, yet on investigation it is usually found that the fault lies not with the organisers of this event but with the individual aquarists and their own separate show committees.

As most of you know, at this exhibition the responsibility of setting up the Society's stand and the space allocated, to say nothing of the methods of heating etc., are left to the members themselves.

On investigation I found that by far the largest number of deaths were caused by the tank overheating and the fish being 'boiled'.

I realise that in the hurly-burly of the benching that takes place on the previous Thursday evening it is so easy for already overworked show secretaries and their staff to neglect to check equipment, but unless they do these deaths will continue. I have found heaters used whose wattage is too great for the tank in question; thermostats made to work safely on a certain maximum load, hopelessly overloaded!

Up to a point space, too, is limited but it is not only foolish to put a large cichlid in a small tank... it is just plain 'murder'. This could be avoided by more co-operation between intending exhibitors and their respective show secretaries and the stands being planned to fit the fish and not the reverse.

As a night steward one year I managed to save the life of a fish by a hastily fitted air pump and air stone. Why not have a spare pump and stones all ready at the back of the stand; then if a steward finds a fish in difficulty he can quickly relieve its plight. This applies also to the main fuses controlling the tank lights and heaters. See that, if a fuse is used, a spare is available and suitably marked so it is easily found by a stranger. Mark all light switches with the lights they control; too large bulbs can heat a tank to 'boiling' point long after the thermostat controlling the heater has cut out.

Finally, on the subject of large shows, don't just take your fish along and dump it into the first tank you are allotted—water change can kill just as surely as any of the above can. After you have netted your fish for the show, siphon the remainder of the tank water into a large plastic bag and take this with you, using it to fill your show tank. I well remember one exhibitor, unable to bench personally, who sent along a beautiful specimen of a discus. This was placed by a willing, but not too experienced, fish-keeper straight into freshly drawn water; came the dawn, and the fish had joined its ancestors.

### Why?

A question frequently asked is 'Why is it that my fish took a first at such and such a show last week but isn't even in the cards today?'

This reminds me of the small boy continually top of his class at elementary school who drops to ninth place when promoted to grammar school! The answer is obvious; he is now competing against the 'tops' of other schools and in consequence the competition is much stiffer.

Another common slip is a dirty show jar (at jar shows). Although no hard and fast rule exists to cover this please remember that judges are human. Imagine your own reaction on purchasing a cup of tea in a cafe to find it all smeared and covered with stains. Your reaction would be of disgust and annoyance. It is but the work of a few minutes to wash your show jars and to give them a final wipe clean on benching.

If at a show you find you have a genuine grievance, then have a word with the show secretary; he will see that your complaint is placed in the right quarter, but, please, don't worry him with petty complaints, he has enough to cope with as it is.

Follow these few simple tips and you will not only enjoy the show yourself but make it more enjoyable for that hard-working band of volunteers—the show organisers and judges.

Let's make sure at your next outing that your slip isn't showing!

# The Harlequin Fish



Photo:

W. S. Pitt

by JACK HEMS

NO list of spectacular-looking community species could be considered complete if it did not include the peaceful harlequin fish (*Rasbora heteromorpha*), which, according to authoritative sources, made its debut as a tropical aquarium inmate in 1906.

What catches the eye first is the large blue-black triangular marking with its base in line with the foreparts of the dorsal and ventral fins, and its apex terminating at the root of the tail. The upper edge of this marking is adorned with a margin of shining gold, and surrounding the whole dark area is a field of coppery pink to red overcast in parts with violet. Anteriorly the body is silvery grey melting into greyish green to brown on the back, and silvery white tinged with pink on the belly. The yellowish fins are speckled with pink to vivid wine red.

It is a small, dainty species and, in the aquarium, seldom

exceeds 1½ in. in length. In the wild it moves in large schools in waters which are very soft and acid. The predominant plants in these waters are various species of *Cryptocoryne*, among which, even in captivity, it likes to spawn. Spawning is not confined to single pairs detaching themselves from their companions, but is indulged in by small groups of fish at a time. This is known as communal spawning.

Most specimens taken from the wild appear to be collected from around Singapore, but the geographical range of the species extends as far as Thailand to the north and Sumatra to the south. There is a slight variation in the fish's coloration depending on the locality in which it is found.

In captivity the harlequin fish flourishes best at a temperature of about 75°F (24°C), though a drop to 68°F



(20°C) or a rise to 85°F (29°C) does no harm if the change is gradual. It is almost always on the go, though it swims sedately, and frequents the middle and upper levels of the water. Tiny living creatures such as *Daphnia*, mosquito larvae, and various thread-like worms are its preferred diet, but it is always ready for anything else alive or dried that comes its way.

What are the chances of spawning it? Not very great, I would say, though some commercial breeders on the Continent have developed a technique whereby large numbers of the fish are produced annually. The stumbling block to success appears to lie in the quality of the water. It is essential that this should approach, or be almost identical with, that obtaining in the acid fresh waters of south-east Asia. We do know that the acid reaction of some of these harlequin inhabited waters is as low as pH 4.5. But as the breeder of, say, the neon tetra or the glowlight tetra will know, the right degree of softness and acidity of aquarium water to trigger off the reproductive urge in selected pairs is sometimes arrived at only after a good deal of experimentation.

However, assuming that you can set up a 24 in. by 12 in. by 12 in. scrupulously clean tank with a non-alkaline compost under about 9 in. of soft water, and some clumps of snail-free *Cryptocoryne* plants, the next thing you must do is to sort out, or buy what you, and perhaps your dealer, consider to be a true pair.

Generally speaking the sexes may be distinguished by size and outline; for in well-developed fish the female is larger and less streamlined than the male, fuller and rounder in profile in the abdomen, and her wedge-shaped marking is hazier anteriorly and, overall, not so richly coloured or clearly defined.

As a rapid change of pH value is harmful to fish, it is recommended to introduce the pair into the tank as it stands, and adjust the pH value to the required reading (around pH 5.3 to 5.7, advises Professor Günther Sterba) by the addition, every so often, of small quantities of strained, saturated peat water. The usual tropical tank

temperature should be maintained. After the fish have settled down in their new surroundings, separation of the sexes by a glass screen is called for. If this, combined with the right quality of water, a raise in the temperature to about 78°F (26°C), and plenty of live food, does not result in a subsequent spawning, nothing else will. But if spawning does not follow the first attempt do not give up hope. Just try, try and try again.

The first step, of course, is to remove the glass partition so that the fish can enjoy each other's company. If the female is looking bloated in the sides—indicating the presence of eggs, the male, if he is in tip-top condition, will show more splendid colours and chase about after her.

After a certain amount of driving, usual among the cyprinids, the female approaches the leaf of a plant and rubs the ventral surface of her body against it. In most cases she will assume an upside-down position the better to accomplish the operation; for the usually favours the underside of a leaf on which to deposit her spawn. The male, warning to the situation, is not long in joining her in her manoeuvres.

The adhesive eggs are extruded as the male curves his body around the female in a loose embrace. This performance is repeated over and over again, sometimes on different leaves, and not necessarily those of *Cryptocoryne*, until the female looks thin and exhausted. Then the pair should be removed to fresh quarters, for they are fond of eating their own spawn.

The eggs hatch in anything from 20 to 30 hours, and the fry stay attached to the plants until they have absorbed the contents of the yolk sac, after which they swim freely about in search of food. This should be of the smallest. Infusoria, followed by micro worms, rotifers and brine shrimps are recommended, but as the fry develop powdered dried food can be used to supplement a live food diet. If well fed the fry reach a length of about  $\frac{1}{4}$  in. before 6 weeks are out. Thenceforward they will make rapid progress, and will attain full size in under a year.

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## ABOUT THE POND THIS MONTH

# Look out for Fungus

by A. BOARDER

**T**HIS is the first of a series of monthly directions for the garden pondkeeper. Each month I hope to deal with the problems which may face such a person and to give seasonal advice to cover all the differing aspects of the subject. I would appreciate it very much if pondkeepers would write to me to ask for any particular feature to be covered. I have been the possessor of a garden pond for many years and it is quite probable that what I might consider to be very ordinary matters not worth mentioning could well be of great importance to another pondkeeper who may not have come across a particular problem before.

During this month it is probable that some rather severe frosts will be experienced. After a bad night frost it is sensible to inspect the pond to see if there is a strong covering of ice there. A hole should be carefully made to allow fresh air to enter above the water.

Should there be a mild spell during this month the pond fishes can have a little food, but before giving any make sure that the fishes are moving around well. If they remain stationary, or nearly so, do not on any account give food of any kind. Once the temperature of the water rises to about 50°F (10°C), the fishes will swim about and will no doubt feed. This should be broken garden worms or white worms if possible. No dried food should be given yet.

During a mild spell make a special point of watching the actions of the fishes. If there are a number of varieties of goldfish in the pond it will be seen that at most times a shoal of them will move about together. If there is a main group with one fish always by itself, this one should be watched to see if there is anything the matter with it. As soon as a fish becomes sickly it skulks away on its own and leaves the main shoal.

Carefully examine such a fish to see if there are any signs of fungus disease. This will show up plainly as a patch of white woolly substance. If an ailing fish is caught in the early stages of the disease it is usually easy to effect a cure. It is only when a fish is neglected and the disease is allowed to get a firm hold that a fish can be lost. A small patch of the trouble may not be of much inconvenience to the fish, but if it is neglected the disease can spread over a large area and once it reaches the gills it is likely to prove fatal.

#### Fungus Cures

There are several cures advertised in *The Aquarist*, and if one has been successful with one it is wise to use this treatment again. I have found that it is possible to cure a fish suffering from the disease in salt water. The treatment is to place the fish in a clean container without compost or water plants; the water is warmed up slightly, probably the best way being to put the container in a warm room or position not so cold as the pond water. Then add a tablespoonful of salt to each gallon of water. Try to measure this out fairly accurately. Do not try to cure the fish in a very small container, and see that the top is fairly wide to allow plenty of oxygen to get to the top of the water. Do not use table salt from a packet. Most of this has been treated so that it runs easily and has an added substance. Use either sea salt or block salt. Put the fish in the fresh water and add the salt carefully. The idea is to ensure that the concentration of salt is not too strong at first. Let the salt dissolve gradually so that the water is impregnated rather slowly. It is not wise to drop a fish straight from fresh water into a heavy concentration of salt. Also it is unwise to return the fish to fresh water suddenly after having been in the salt solution.

The fish should be placed in a shady position. Examine the water after 2 or 3 days and if there is any noticeable smell to it change it as soon as possible to a solution comparable in strength with the former. The fish should show signs of improvement after a couple of days. Once the disease appears to have cleared up, add some fresh water so that the strength of the salt is reduced. Take a couple of days to get this water back to almost normal. Once the disease has cleared up the fish can be offered some pieces of broken worm or white worm. Do not be in a hurry to return the fish to the pond unless the water has warmed up somewhat.

#### Plan the Planting

There will still be little signs of life in the pond for most of the month. The water plants are still dormant and not likely to show signs of fresh growth. If any fresh water plants are required for the pond the catalogues can be inspected to see what are available for ordering to be delivered later on. It is of little use trying to plant in the pond yet. If any fresh ones are to be ordered remember that most water plants grow very rapidly once they become established. Therefore do not order too many for the size of the pond. A happy medium should be aimed at. The pond could look rather bare at the beginning of the growing season, but once the water warms up the growth will immediately be in evidence. It is a sure sign of bad pondkeeping if the water plants are allowed to get out of hand. Once this happens most of the surface of the water will be covered with leaves and the fishes will not be seen. The water lilies are, perhaps, one of the worst offenders here, but for all that I do not consider any pond of a reasonable size should be without at least one water lily. They are the plant "de luxe" in any pond, and they can be had in so many colours. Where many people go wrong is that they do not consult the dealer before ordering their



Photo: W. J. Howes  
A garden pond of natural appearance photographed at Bognor, Sussex

lilies. In consequence they can obtain plants which are quite unsuitable for the size of their pond.

There are lilies suitable for even a very small pond and some of these will be discussed later on when the right planting time comes along. One thing should be borne in mind. The water lilies cannot be considered as oxygenating plants. Their leaves always grow on the top of the water and, if too crowded, above it. They are very ornamental, especially when in flower, and some even when not blooming. These are the types with fine variegated leaves, which in themselves are very handsome. All these lilies can give shade for the inhabitants of the pool, which is greatly appreciated by most fishes during a hot spell. You will find that many young fishes like to lie under a leaf to wait for flies or other insects to drop on the water.

Another very important feature of the water lilies is that their roots grow very strongly over a wide area. They feed extensively on the mulm and droppings of the fishes. As the fishes swim about they stir up this mulm and it appears to be attracted to the roots of the lilies, to their benefit and also helping to keep the water clear.

It is probable that before the end of the month, frogs and newts will visit the pond. They come to breed only and usually leave once they have laid their eggs. Toads are often later in spawning than frogs. Many frogs may remain in or near the pond for most of the year. Should their presence not be required in the pond they can be caught with a net easily when they come to the surface to breathe. They do little harm and can provide food for the fishes in the form of tadpoles. Remember that fish eat frog tadpoles but not those of toads.



# Some Notes on Natural Spawnings



Undersurface of clawed toad 'up for air'

WHILST in Australia I acquired a pair of clawed toads (*Xenopus mulleri*), which I brought home with me, and another female I received as a gift from a friend I called upon in Colombo. Also, I purchased another male in London, which had been imported from E. Africa and later I purchased another imported pair in London.

Having studied these three pairs carefully for some time, I decided that they might be prepared to breed. They were first thoroughly conditioned with a daily diet of raw steak, with raw fish for a change on one day a week (though not necessarily on Friday!). The mating call was already heard frequently, resembling the loud ticking of a watch, and on this point I disagree with Boulenger, who states that this is the "love song" of the male; I am convinced that it is the "come hither" call of the female.

The *Xenopus* were in a coldwater aquarium, 36 in. by 15 in. by 12 in. and facing south-east, with water slightly alkaline and with pH 7.5, in April 1964. An immersion heater was introduced and the temperature raised to 75°F (24°C). At this temperature an old rotary pump was switched on for aeration. This instrument vibrated quite a bit, and these vibrations being transmitted to the water had the effect of further exciting the *Xenopus*. Within hours two of the males were in amplexus with the female.

The following morning I was delighted to find eggs deposited singly over the plants (*Valisneria*) and on the sides of the aquarium, and I promptly removed the adults (this being easiest) and raised the water temperature to 80°F (26°C). Two days later the eggs were hatching, each tadpole resembling a small white leech about one-sixteenth of an inch in length, clinging by a sucker to the algae-covered sides of the tank.

Another 2 days and they were swimming freely. From then on growth was rapid, the tadpoles seeming to thrive on

Photograph

an algae suspension and ignoring *Daphnia* and *Cyclops*. Every morning I siphoned about a gallon of water from the aquarium and replaced this with an equal quantity of really dark green water, and by mid-afternoon the water was quite clear and the morning's performance was repeated. This procedure of changing the water twice daily was carried on for 6 weeks, and by this time my stock of tadpoles had gradually dwindled from about a hundred down to nil, in spite of several attempts to supplement the diet. This was a bitter disappointment, but, however, I had induced the *Xenopus* to breed naturally!

By this time they had grown to about 1 inch in length, swimming in a vertical position with heads downwards and with the tips of their tails quivering rapidly. A pair of barbules had appeared—one on either side of the mouth—at about the third week.

## Foods

I was sure that it was a matter of feeding, although various foods had been offered in addition to algae—*Daphnia*, *Cyclops*, raw meat and fresh blood; all had been refused. About this time I was presented with an adult female *Xenopus laevis*, a fugitive from a "pregnancy test" batch, and on being introduced to the *mulleri* family appeared to settle down gratefully and happily.

In August I was on the move again and once settled I decided on a second breeding attempt. The female *laevis* was removed and placed in another aquarium with a recently purchased male *Xenopus gilli*.



Side views of clawed toads in an aquarium

# s of Clawed Toads

C. SEARLE

by the author

This time two pairs of *X. mulleri* were in a tank 24 in. by 12 in. by 12 in. with a southerly aspect, water at 60 to 65°F (15 to 18°C), pH 7.00, and before any attempt was made to raise the water temperature, eggs were being deposited all over. Diet was then mainly earthworms.

Imagine my surprise and delight a few days later to find eggs also in the tank containing the female *laevis* and the male *pallidus*. I crossed my fingers and was rewarded a few days later with another batch of tadpoles—hybrids!

Meanwhile the *mulleri* batch were growing rapidly, and having started them off again on an algae suspension, I was worried, not wishing a repetition of my earlier experience. I decided to try a well-known liquid product sold for fish fry supplemented every few days with another baby fish dry food and with these I was fortunate.



Tadpoles of the clawed toad at the stage when the hind limbs are appearing

Both batches thrived and in 6 weeks they were almost four times the size of the first unfortunate lot. Having reached some 3 inches in length they were showing signs of back legs and eating *Daphnia* and chopped *Tubifex* worms readily.

At 8 weeks old they had their four legs and the barbules and tails were withering. From then on *Tubifex* and very finely shredded raw meat were greedily devoured.

## From Sinner to Saint

by P. E. PAVEY

UNEXPECTED success with my gentle-natured dwarf gouramis led me soon afterwards into buying yet another type of gourami—the opaline.

No gentleness here. At least not at first. Once away from his brothers and sisters, the male began to bully the female unmercifully. Rapidly I had to part them. Robbed of one victim, he promptly set about terrorising the rest of the community tank, contemptuously disregarding the fact that he was one of its smallest occupants.

### Aggressive Male

At feeding times he would become especially aggressive, for he was a very greedy fish. My only course was to put him among much larger fishes, and hope that his ego would then shrink to natural size. Four months afterwards I can report that, although still plumbful of confidence, especially on the one occasion he was entered in a show, his greed and bullying ways have completely gone. He is a most amicable fellow, and with his pale, highlighted blue body certainly an eye-catcher. And, although still growing, he is a father.

I had bought him in the September, and he had ensured that he grew rapidly. In November I half-filled a 36 in. by 12 in. by 12 in. tank with old water and topped it up with tap water (alkaline in this district). I then planted it

with lead-weighted *Vallisneria* and *Cryptocoryne*. No sand was used. Temperature was 78°F (25°C).

On the 21st November I put in the male and female, separated from each other by a sheet of glass. The female, remembering perhaps his past fierceness towards her, promptly disappeared into the small flower pot which I had provided for her protection. The male began building an enormous bubble nest, and then, aggravatingly, destroyed most of it.

On the 22nd, when I removed the dividing glass, the female was still lurking modestly inside the flower pot. The male did not change colour at once. In fact he only became darker—vividly darker—when he was actually chasing her. The female remained pale. Their skirmishes were spasmodic, breathtakingly swift. Always she darted into the flower pot, and while he was hanging impatiently outside the mouth of it, she would swim through the other (knocked-out) end and come up behind and nudge him. I increased the temperature to 82°F (28°C) and left a 5 watt bulb burning overnight.

### Spawning

They spawned eventually, during the night of the 25th. In the morning there were eggs all over the surface of the water, and, while the female remained within the pot, the male was dashing furiously around collecting them in his



mouth. I removed the female and noted, somewhat surprised, that she was completely undamaged. By 11 o'clock that night the eggs were showing signs of hatching and hanging belly-side uppermost under a 6 inch diameter bubble nest. Again I left a light on all night.

By the 27th a large spawning was free-swimming. So out came father, and in went an apple snail and a drop or two of liquid food for fry.

The male, on being returned to his community tank to which the female had gone before him—at once turned dark blue again, just as though he were glowing navy-blue with pride.

I continued to put in a few drops of liquid food for the fry at intervals, and a week later I removed the apple snail, and began feeding with brine shrimp and egg yolk suspension. The snail, I might mention, ignored the lettuce which I gave him—as indeed he always does—until it was

going rotten. Also he continued to show a marked partiality for a treat of watercress.

Within days the opaline fry were taking sifted dried food, finely chopped *Tabifex* and micro worms. And, of course, now that the majority average an inch in length, they are avidly devouring anything and everything: baked scraped liver, fresh and dried *Daphnia*, *Cyclops*. My wife or I feed them about every 2 hours during the day, and though they are always hungry I have noticed no bullying among them. Their colours at present are dark, resembling more the mating colours than the natural colours of their parents.

The opaline gourami appears to be an easy fish both to keep and breed.

Certainly my sinner has become a saint. I notice that he is busy blowing bubbles again. Throwing out a hint perhaps....?

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## Breeding the Cherry Barb

by I. S. KENDALL

WITH the approach of spring an aquarist's mind turns to the important matter of what fish to breed.

Perhaps your mind is made up, neons, discus, or perhaps sharks, are in your plans. To the beginner, though, this could be a problem, if he has already had a variety of successes with livebearers and now wants to take the plunge. To anybody in this plight I suggest the cherry barb, a pleasant fish whose breeding does not entail many difficulties and at the same time is not too easy; in fact just the sort of fish for a newcomer with a little experience.

The cherry barb (*Barbus titteya*) is an attractive fish that will live at peace with almost anything in almost any conditions. Barbs are reputed to prefer the upper seventies but in my experience they are just as happy at 68°F (20°C) as at 78°F (25°C). I have bred them at 70°F (21°C), in fact I prefer to; however, perhaps 75°F (24°C) is better, especially with obstinate couples.

The requirements for breeding this fish are not many but their basic needs must be appreciated. Males and females will coene quickly into condition if fed regularly on nutritious live food, such as mosquito larvae, blood-worms, *Daphnia* or even white worms. Try as much as possible to vary this diet. Once in condition they can be easily sexed: the female will become deeper bellied, being of medium brown colour, pale on the underside and with a golden stripe underlined by a thicker dark brown stripe running from the eye to the caudal; the male will be slimmer and dark red, almost mahogany. The dark line, sometimes distinguishable when it is out of condition, almost disappears, and the male will take to courting the female.

I breed my cherries in an 18 inch tank which has been glazed in such a manner as to allow maximum surface area: its height is only about 9 inches, which does not matter because there should be only about 5 or 6 inches of water in the tank anyway. The water should be soft; this can be arranged by using pure rain water, or a domestic water softener. The bottom of the tank is covered with gravel, and one or two plants to help the fish feel at home. Most

barbs breed in plant thickets and these can be artificially produced from skeins of nylon wool.

Everything in the tank is now ready and is left to settle for a week or two. Meanwhile the prospective parents continue to enjoy their selections of live food. Now the fish should be separated for a few days; the female could be put into the breeding tank, the male being added later. Some books suggest using three fish, two males and one female, or even two pairs. However, as the fish are addicted to their eggs, the fewer the parents the better chance of more young. Once the two fish have settled down they will chase each other about the tank. The male will nose or try to nose the female into the nylon wool, where he will rub along her side until she releases the eggs; this will continue with unflinching vigour until all the eggs have been laid, or rather scattered, amongst the threads of nylon. Hunger will now drive the fish to search for and consume their own eggs, so it's advisable that they are removed to the tank that they came from and fed.

Eggs, scattered everywhere, sometimes but very seldom can be seen as tiny pin-heads of 'jelly' stuck to leaves or stems of plants. It is the next few days that are important; many a batch has been ruined by bad management over this period. Their first food will be solely *Infusoria* but they will not require it until they are free-swimming, and the trouble starts with trying to find out whether or not they are ready. Many reference books state that they will be free-swimming after so many days, but this really depends on the conditions, so to be sure start adding *Infusoria* 24 hours after the spawning. They will be nowhere near ready to accept it, but this gives the *Infusoria* a chance to build up in the tank for when they are ready. Close examination may show one or two fry-like minute splinters of glass hopping around on the gravel, but it's doubtful if you will see any for at least a couple of days.

Towards the end of the second week the feeding can be continued with brine shrimp (newly hatched) or micro worm, and the *Infusoria* discontinued. This feeding can continue until the fish are big enough to assimilate grimald

*Continued opposite*

# The Gourami with the Thick Lips

by M. M. CLARK

ON looking at the thick-lipped gourami outside the breeding period one gets the impression that this fish, a faded orange and shade of silvery green, bordered by light yellow, is just of ordinary appearance. This is not so, for in the breeding season the male thick-lipped gourami appears a highly attractive reddish brown with a striking orange to the edges of the dorsal and ventral fins.

Quite a small tank can be used to breed them. The mature pair are introduced, and if the female is already bulging with roe mating will take place surprisingly quickly, for they quickly adapt to new surroundings.

After selecting an area in the tank, the male blows his nest of minute bubbles in the way typical of the anabantid fishes. As his energetic nest construction work continues, the male attracts the female towards the bubble nest, with much difficulty at first but finally succeeding. It is fascinating to watch the male alternately darting to his mate and hovering below the nest.

When the pair finally agree on spawning the female jukes the male with her nose; the male squeezes himself round the female, who expels about fifteen eggs to be fertilised by her mate. This spawning continues, probably for another twenty times, until as many as 200 eggs have been laid.

It is now that the male completely takes charge of the nest. First he drives away the female, after which he picks up, in his mouth, any eggs which did not rise into



Thick-lipped gourami (*Colisa labiosa*)

the nest after being expelled. He guards them with great care, not letting them fall nor leaving them alone. In about 20 hours, which is not a lengthy period, the young hatch, but the father still is responsible for returning them to their nest. These fry, like those of other fishes will in fact remain together for the first day of their life. After 24 hours of life when the fry start their own search for food the father is removed, for he is unable to cope with his young any more. At this stage the fry require a fine and nourishing first food. Egg yolk seems suitable and they thrive well on this.

Two weeks later they may measure four times their original length, but they do not reach maturity until 14 weeks after this.

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## Breeding the Cherry Barb

(continued from opposite page)

worms. If it's readily available sifted *Daphnia* always goes down well; however, there are a number of live foods available that will be taken. I do not use dry food, even if it is fry food, because it is inconvenient to clean the tank out and it would be a shame, after getting the parents to spawn, to foul the tank.

These youngsters will grow astonishingly quickly for the first couple of weeks but will soon settle down to steady growth. It is an easy mistake to make to think all the youngsters are females, because their coloration is almost exactly that of their mothers. This phase passes and some do become suffused with pink and lose the stripe which is discernible in the female. You will probably find a few large fish amongst their numbers, who will, no doubt, be commandeering the food, so for the sake of the others, and to save overcrowding, these can be moved to another tank. A community tank will serve well, provided the young fry are at least an inch long, and the other inmates are not too rough.

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## The Golden Panchax

by D. DURRANT

THIS species, I have found, are not good community tank fish. They are very apt to nip the fins of tank-mates, especially of fishes of long-finned and slow moving varieties. Nevertheless, a tank housing solely golden panchax is a beautiful sight, especially when looked at with a light shining in the foreground.

The general colour of this species is yellow, the male being more brilliant than the female. He has bright orange in his fins with the edge of the anal fin red. A row of dots runs through the anal and dorsal fins, these dots being of a metallic green. The scales on the back of the male stand out slightly on end like a fish suffering



from dropsy. The female is a lot paler in coloration and has a dark spot in the rear of her dorsal fin.

This is a hardy fish and breeding is simple, a large tank being unnecessary.

An aquarium 18 in. by 10 in. by 10 in. will suffice for breeding. The water need be of no special reaction or hardness but should have been aged several days and raised to 80°F (27°C).

The tank can be planted to make the fish feel at home, but plant types having small feathery foliage should be avoided, for if spawning occurs on the plants the eggs cannot be removed easily.

#### 'Mops' for Spawning

As a spawning medium, nylon "mops" can be made up from 4-6 inch lengths of nylon wool. It will be found that best results are obtained by hanging these over the edge of the tank so that the fish can spawn at the depth of water they prefer. This is usually directly below the water surface, but a few eggs may be found lower down in the "mops".

This species will spawn readily as pairs, trios (two females and one male) or communally, several pairs spawning together. The best output of eggs I have found has been when one male and two females have been used together. Eggs must be picked off daily from the "mops" as if left there, adults will greedily eat them or any young fry that may emerge. These eggs may be placed in jars and floated in the same tank for hatching or the "mops" can be removed to another tank with the eggs intact.

#### Tough Eggs

The eggs are amber in colour and can be removed from the "mops" with a small pair of tweezers or with the fingers, as they are quite hard shelled. They take 8 to 12 days to hatch, according to the temperature of the water, and as spawning occurs over a period of a week or so with about 10 to 15 eggs being deposited each day, the young have to be graded according to size as they grow,

otherwise cannibalism will result. The larger fry nip the fins of small fry and also eat them.

At birth the fry will be able to eat the very finest sifted *Daphnia* or *Cyclops*, but very fine dried food will do as an alternative. By the time they are 3 months old they will be sexable and ready to breed.

#### Rest the Female

If only one pair is used for breeding then it is advisable to rest the female every 7 days for 7 days to give her time to again fill with roe. The male does not seem to need any resting from breeding at all.

This interesting little fish is easy to keep and is well worth the effort to breed.



Photo:

L. C. Mendicino

Golden panchax (*Pachypanchax playfairi*): male below, female above

## The Black Shark

(*Morulus*  
*chrysophekadion*)

**MORULIUS** (*Labeo*) *chrysophekadion*, to give the fish its formal name, is native to the still and moving fresh waters of Thailand and the Great Sunda Islands. In these parts it is said to attain a length of about 22 in., but aquarium specimens normally reach only about half this size. I say normally because a black shark owned in 1958 by Mr. and Mrs. Gallagher of Auburn, Maine, U.S.A., measured 20 in. long. It was believed to be about 5 years old at the time.

#### Lively Fish

The whole of the body, head and fins are matt black, but under a bright light several rows of scales on the flanks



reflect bronzy gold tints. Apart from its engaging appearance, the fish's most distinctive features are a gracefully elongated form, sail-like dorsal and well developed caudal fins, an underslung sucker mouth, a tubercled snout, and two pairs of fleshy barbels. To this is added a lively manner, hardiness, an ever-increasing tameness and a life span concomitant with its large size. But this is not all. Although some specimens over 2½-3 in. long will bully, quite unmercifully, smaller or less assertive members of their own kind, they will treat other species with great respect, and even guppy fry in a well planted tank can go about their busy lives in peace. Altogether, then, the black shark is just the fish to add a touch of grandeur to a

tank holding not less than 15 gallons of water. This, to suit it, should be on the soft side and slightly acid.

#### Upside Down

There is not a part of the aquarium to which the black shark will not go in search of food. And like most other aquarium 'sharks' we know it sometimes adopts the most unusual postures to obtain it—upside down, for instance, to rasp away at algae growing on the underside of a leaf. Or maybe strictly vertical, with head up and tail down to seize a scrap of edible matter bobbing in the angle of a trap corner. On the rather rare occasions when it is still, it will drape itself, so to speak, across a piece of vegetation

or, say, a heater cable, and stay there for a while before going on the forage again.

Like all cyprinids, *M. chrysophekadion* is not fussy about what it eats, and it will grow fast and fat on such things as uncooked porage oats, Bemax, crumbs of wholemeal bread, the regular dried foods, pieces of cooked or uncooked lean meat, small worms and live *Daphnia*. Nor is it particular about the temperature; for although it appears to be most comfortable at about 75°F (24°C) it has a range of from 68°F (20°C) to 85°F (29°C). Externally there is nothing to tell the sexes apart, though in all probability largish specimens which show a marked fullness in the sides are females.

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## Spotted Weatherfish or Spined Loach

by B. FRY

*COBITIS taenia*, popularly known as the spined loach or spotted weatherfish, is found in shallow fresh waters over large areas of Europe (including the southern counties of England, where it is becoming increasingly scarce), parts of North Africa, and through northern Asia to Japan.

The chief characteristics are a slim and very elongated body, six short barbels on the upper jaw of the underslung mouth, and the habit of darting up to the surface at fairly frequent intervals, if conditions are not as they should be, for a mouthful of air. This passes into the specially adapted oxygen-extracting gut, and the unwanted carbon dioxide gas is expelled in the form of bubbles through the gills.

In the main the spined loaches, which are indigenous to northern Africa and Asia, have a wide range of temperature from just above freezing to the lower eighties (°F), but those which inhabit northern and western Europe are happiest at a range of about 50°F (10°C) to 65°F (18°C). They can, however, stand slightly lower temperatures with no ill effects.

The general coloration is sandy shading to glistening white on the belly. A longitudinal stripe made up of about 15 brownish to blackish blotches adorns the lower sides. Above these is another row of similar coloured, but smaller, markings interspersed with numerous brown dots. Brown dots also ornament the caudal, anal and dorsal fins. The pectoral fins are clear. Fully grown, the species averages about 4 in. in length.

#### Sexing

According to Professor Günther Sterba, the German ichthyologist, the sexes of mature specimens may be distinguished by the pectoral fins. The males, he writes, have the second fin ray noticeably thickened, whereas all the female's pectoral fin rays look alike. But be this as it may, evidence seems to show that in adult fish the female always has a more rounded and larger body than the male.

The spined loach is easy to keep and easy to feed. All it needs in the way of accommodation is a fairly roomy tank furnished with a thickish layer of sand, or fine grit, preferably covered with well-decayed mulm, and good stands of a plant like *Vallisneria* under about 7 in. of water. For food it can be given white worms, tiny red earth worms, *Daphnia*,

tiny water shrimps and the crunchier types of dried foods, or flakes of uncooked porage oats. It takes all its food from or near the bottom. If there is nothing better available it will take up small quantities of compost or mulm in its mouth and, after extracting any edible matter, shoot the leavings through its gill openings.

It is very sensitive to changes of water, and not more than a quart should be removed and replaced with fresh (at the same temperature) when cleaning operations become necessary. Another thing it dislikes is too strong a light shining through the sides of its tank or from overhead.

#### Breeding

*C. taenia* will sometimes breed in captivity. The eggs, which are larger than those of the goldfish, are laid indiscriminately in the mulm and among the risen roots of the plants. Spawning continues over a period of several days or longer, so that the fry, when they show up, are always at different stages of growth. At a temperature of 60°F (16°C) the eggs take about a week to hatch out. There is no need to remove the parent fish, for though it is not unlikely that a few fry will be eaten, the majority always seem to keep out of harm's way by hiding in the sediment. There they live on the particles of food discarded or ignored by their parents, and anything else that they can find that is small enough to be swallowed. But to make sure that they get enough to eat it is a good plan to introduce blobs of micro worms, mashed white worms, and the merest pinch of a powdered dried food every now and then.

The loach most deserving of the term 'weatherfish' is the species called *Misgurnus fossilis fossilis*, from central and eastern Europe; for this species almost always acts in an excited manner when stormy weather is about. Even so, *C. taenia* seldom remains undisturbed by atmospheric changes, and on hot, sultry days, with thunder in the offing, it will sometimes splash about at the surface and give every impression that the state of the weather has upset or disrupted its normal routine.

As the spined loach likes to bury itself on occasions in the sand it is necessary to furnish its tank with plants some time before it takes up occupation; for, as will be readily appreciated, once a good network of roots has been formed the fish's burrowing activities will have little, if any, effect on the plants' anchorage.



# Some Cryptocorynes for Aquaria

by B. FRY

**C**RYPTOCORYNE plants, in all their splendid variety and interesting and lasting foliage shapes and colours, are ideally suited to the decorative heated aquarium. They are native to the fresh waters and boggy areas of tropical and sub-tropical south-east Asia, and their essential requirements under cultivation are clean, soft water, a non-alkaline or neutral compost, preferably enriched with a little peat or clay, a rather subdued light, and a temperature in the range 75°F (24°C) to 78°F (26°C). Given these conditions they usually do well (some species are quicker to establish themselves and throw out new leaves and runners than others) and add much to the enjoyment of tropical fishkeeping.

Among the *Cryptocoryne* of outstanding merit are *C. affinis*, *C. blausii*, *C. balansae* and *C. griffithii*. The first, which also goes under the synonym of *C. haerteliana*, has long, lanceolate leaves of a silky, bluish-green colour, with pale green to ivory veining and dark purplish undersides. It is a fast grower for a *Cryptocoryne* and soon sends up many young plants from the wide-spreading underground stolons. Normally it attains between 9 and 12 inches in height.

*C. blausii* is one of the most spectacular-looking *Cryptocoryne* which have appeared on the market during the last 4 or 5 years. In large plants the leaves are narrowly ovate and measure about 6 inches long by about 4 inches across at the widest part. In colour they are a rich bronzy green to bronzy red on the surface and deep wine red on the undersides. The strong stalks, which are brownish to dark red, are as long or longer than the leaves themselves. *C. blausii* as a centrepiece takes a lot of beating. Another position in which it looks startlingly attractive is towards one side and underplanted with thickets of *C. nevillei*, a plant which carries narrow shiny green foliage on short stems.

*C. balansae* is yet another *Cryptocoryne* which looks most handsome when grown in dense thickets, which it will form anyway in due course; for its narrow, strap-like

leaves are waved at the margins and corrugated over their entire surface, and are of a rich, vibrant-green colour traversed by a paler green central vein or midrib. This is yet another plant which attains between 9 and 12 inches in height. *C. griffithii* has been with us almost as long as the hobby itself, and has often been confused with *C. cordata*, which it resembles except in the flower.

There are several colour forms or races of this plant, but the most usually available are the brownish leaved and the grass- to olive-green forms, with purplish to brownish mottlings and veinings. The leaves are ovate in shape and roughly 3 inches long by 2 inches wide. They are held aloft on stems of about the same length as the leaves themselves, or longer. The length of the leaves and stems, however, is largely determined by the quality of the light the plant receives and the depth of the water.

The particular attraction of *C. willisii*, a plant which is usually not difficult to obtain, lies in its striking appearance and the fact that it is easy to grow and soon becomes surrounded with offspring. The leaves, like those of *C. balansae*, have wavy or rather ruffled edges. But unlike the leaves of *C. balansae*, the foliage of *C. willisii* is predominately brown with a purplish cast and purplish rose on the undersides. The stolons or runners, some of which will rise vertically above the compost, produce an abundance of rooting offsets which can be detached from the parent plant and planted elsewhere in the aquarium when they are about 3 inches high. *C. willisii* seldom exceeds 9 inches in height.

In the exciting manual of a Midlands' grower who specialises in the propagation of rare aquatics there is a *Cryptocoryne* listed which should prove to be a perfect gem for foreground planting. This is *C. minima*, with ovate leaves about 1 in. long by  $\frac{1}{2}$  in. wide, and held on stems averaging about 2 inches long. The leaves, so the manual informs us, are dark green blotched and marked with purple and brown.

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## Thermostatically Speaking by M. J. STAINES

**I**T has recently become fashionable to return to an old idea, the external thermostat. Those on sale today are, subject to certain limitations, very reliable instruments, as were those made 30 years ago.

These thermostats work on much the same principle as the submerged model, with a bi-metallic strip which bends with variations in temperature and operates a contact or switch. However, I have yet to see an outside thermostat that, as supplied, is quite satisfactory. They usually consist of a bright metal plate to press against the tank glass with a dark coloured plastic case for the 'works'. This set-up is against all scientific reasoning, for the heat of the tank is repelled by the shiny plate, whereas changes in room temperature are hardly impeded by the plastic case. In consequence the bi-metallic strip can bend and the contact be closed by a severe drop in room temperature although the tank becomes hotter and hotter. This

usually happens in the early hours of the morning when it is not noticed, although your fish may have to endure heat up to 90°F (32°C) or more. During the day, when the room is very warm, the reverse is the case but as the difference between water and air temperature is small the effect is un-noticed. This is also true of night conditions if you have thermostatically controlled central heating.

Although the foregoing may seem a complete condemnation of the very instrument I myself use, it is in fact the very opposite. From my experiences with outside thermostats I have found a simple way to obtain regulation of tank temperature to within plus or minus 1°F, all the time.

I adopt the following procedure to obtain this desirable result. The shiny metal plate is painted with 'blackboard composition' (for preference) or black undercoat paint. I

Please turn to page 204



## OUR EXPERTS' ANSWERS TO TROPICAL AQUARIUM QUERIES

Is it possible to breed livebearers in a community aquarium?

It is possible to breed livebearers in limited numbers in a community aquarium if the occupants of the tank are normally docile in their habits and physically incapable of forcing apart the tangle of vegetation, which, to help save the fry, should carpet the surface of the water.

Can you give me any information about the keeping and breeding and country of origin of a diminutive flat fish or flounder which I bought under the technical name of *Trinectes maculatus*?

This fish is native to the fresh, brackish and coastal salt waters of the U.S.A., from Massachusetts to Texas. It flourishes best at a temperature of about 68°F (20°C) to 75°F (24°C), and is seemingly most comfortable in an aquarium with a sandy bottom into which it can burrow. It is recommended to add about one teaspoonful of ordinary kitchen salt (or evaporated sea salt) to every gallon of its aquarium water. It will feed on tiny worms, live *Daphnia*, pieces of lean meat, cooked white fish and a certain amount of decaying vegetable matter. The species has not bred in captivity, and we cannot say what external sexual differences, if any, exist.

What is the breeding procedure of *Nannostomus anomalus*?

The male dons brighter colours and the female develops fuller sides. Then, after a certain amount of coquetry and driving on the part of the male, the couple take up a side-by-side position in fine-foliaged plant life and there produce the eggs. To spawn this species successfully it is essential to provide soft, acid water and a diffused light. A temperature of about 78°F (26°C) should be maintained.

I had a female molly showing a very distended abdomen and sides. With the intention of saving a lot of the fry I transferred her to a goldfish bowl, well stocked with plants, which I floated in the aquarium. The next morning she was dead. Can you give me any reason for this tragedy?

Livebearer females should not be moved when they are in an advanced stage of pregnancy. We can only assume that your female died from shock.

Are Grindal worms easy to cultivate?

Grindal worms are very easy to cultivate if you give them a permanently moist, friable compost maintained at a temperature of about 68°F (20°C) to 75°F (24°C), and feed them every second day or so on teaspoonfuls of cooked, milky oatmeal or Farex mixed to a creamy consistency with warm milk.

What is the formal name of the swamp barb? Is it an African or Asian species? What are its colours? Does it grow very large? Is it easy to keep and breed in captivity?

The so-called swamp barb is technically known as *Barbus chola*. It is native to the fresh waters of eastern India and is similar in appearance to the rosy barb (*B. rosomanus*) but, unlike that species, possesses a pair of barbels. It attains a length of about 6 in. in the wild but aquarium specimens rarely, if ever, exceed 3½ to 4 in. It settles down very well in any tank large enough to provide it with ample swimming space, is inoffensive, eats anything and can be bred without difficulty in a well planted tank holding about 15 to 20 gallons of water.

I have a *Corydoras paleatus* which has developed fungus on the base of its caudal fin. As salt is not recommended for the treatment of any disease affecting catfish, can you suggest an alternative medicament with which I might hope to effect a cure?

Obtain a 2 per cent solution of mercurochrome and dilute one part of this with nine parts of water. Now remove the fish from the aquarium and douse the diseased

Many queries from readers of "The Aquarist" are answered by post each month, all aspects of the fancy being covered. Not all queries and answers can be published, and a stamped self-addressed envelope should be sent so that a direct reply can be given.

area with a soft brush or tuft of cotton wool dipped in the solution. Repeat the treatment if necessary after a lapse of 3 or 4 days.

I have purchased a 3 in. fish which the dealer called a banded loach, but he could give me no other information about the fish other than that it came from Indonesia. It is yellowish on the sides, with numerous broad brown bars, three pairs of barbels on the mouth, and lots of dark spots on the yellowish fins. Can you identify this fish for me?

In all probability the loach you have is *Noemacheilus fasciatus*, from the Great Sunda Islands. This species attains about 3½ in. in length, will eat any live or dried food, and thrives best in rather shallow, well oxygenated water maintained at a temperature in the neighbourhood of 75°F (24°C).

I am new to tropical fishkeeping and would like your opinion on the following matter. About 2 weeks ago I introduced some ornamental sea shells I had had given to me into my aquarium. Within a few days the fish went off their food and looked unwell. I removed the shells but many of the fish died. What exactly went wrong?

It is never a wise policy to introduce sea shells into an aquarium. For one thing you run the risk of contaminating the water with salt. For another, the lime in the shells soon makes the water too hard and alkaline for the inmates' well-being. It is not unlikely that your fish were killed by the dissolved salt or soda used in the preparation of the shells as ornaments.

Recently, I set up a 20 in. by 10 in. by 10 in. tropical tank and stocked it with a dozen *Vallisneria* plants and nine pairs of small fish. I feed the fish twice a day on a well-known dried food and take them out of the tank every week so that the compost can be well washed and the dirty water changed. Yet though I take all this trouble with my aquarium I keep losing fish. Is there any way I can prevent these fatalities?

You are going wrong in emptying your aquarium and setting it up afresh every few days. Few fish are likely to survive such treatment. To guard against pollution of the water give only as much food as the fish will clear up in a matter of about 10 minutes. Food that comes to rest on the compost, except that intended for the nourishment of bottom-livers such as catfish, should be removed as soon as possible with a sediment-remover or siphon. Water lost through evaporation or siphoning should be made good by the addition of cooled water from the kettle. Instead of a few plants dotted here and there in the compost, you should see that the back and both ends are well stocked with submerged vegetation; for plenty of growing plants help to absorb the wastes of the fishes, provide oxygen and do a lot towards ridding the water of dust-like particles of sediment.

I am desirous of breeding the neon tetra, but understand that the water has to be acid. Is it possible to determine the degree of acidity of aquarium water without going to any great expense or trouble?

You can obtain a kit for testing the pH value of aquarium water for as little as 7s. 6d. With one of these kits you can ascertain the degree of acidity or alkalinity of water in a few moments. But we must point out that neons need soft as well as acid water. Your local water department



will give you any information you require about hardness at the mains. Alternatively, well-stocked dealers in aquarists' requisites retail a water hardness testing kit for 14s. 6d.

**I am thinking about breeding *Daphnia* in a large goldfish bowl to supplement my fishes' diet. What are the 'Beas' requirements in the way of food?**

You will not be able to breed many *Daphnia* in a goldfish bowl. It would be better to obtain an old sink or half tub and install it in a spare room or garden shed. Fill it with water and let it stand for a week or two before introducing any *Daphnia*. Meanwhile throw some discarded lettuce leaves, plant cuttings or banana skin into the water to decay and introduce minute organisms for the *Daphnia* to feed on. After the *Daphnia* have been introduced continue to feed them with pinches of dried blood, brewer's yeast and more discarded vegetable matter. Thick green water is another much relished food. Do not overfeed to cause pollution and add a little fresh water every now and then to improve conditions. *Daphnia* do best in well-oxygenated water.

**I have obtained a steel aquarium frame measuring 60in. by 15in. by 15in. and would like to know the thickness of glass required to glaze it.**

You will need 1/4in. plate glass for the sides and ends and the same thickness in toughened glass or wired glass for the bottom.

**My aquarium has been set up for about 8 weeks and though the fish appear to be doing well, the water, under bright electric light, seems to be full of tiny living creatures of a greyish white hue. Is this condition anything to worry about?**

Your water has not properly matured and what you have

noticed is probably an excessive number of large Infusoria. So long as you do not overfeed the fish and keep the bottom well dip-tubed to get rid of decaying matter, the tiny forms of life will gradually diminish in numbers. See to it that you have plenty of plant life to absorb substances dissolved in the water and help to create a proper balance.

**I am desirous of breeding top quality platys, and should like to know the sort of water and temperature which suits them best.**

Platys appear to thrive best in soft, neutral to slightly acid water well planted and lighted and maintained at a temperature of about 72°F (22°C) to 75°F (24°C).

**I am fearful of introducing harmful parasites on water plants into my well-cared-for aquarium. Can you tell me a way of sterilising them without doing them any damage?**

Mix up a deep pink solution of potassium permanganate and swish the plants around in this for a short while before introducing them into your aquarium. But while cleaning operations are going on make sure that you do not subject choice plants to any abrupt changes of temperature. Use tepid water for the initial cleansing and final washing.

**I should like to grow a mossy-looking plant between the fissures of rockwork in my tropical tank. I have tried ordinary *Fountain*, but this soon dies in the warm water. Can you suggest any other plant which would prove suitable?**

There is a form of *Fountain* (*F. gracilis*) which does well in clear water tropical tanks. Better still, plant up with Java moss (*Vericularia dubyana*), which is ideally suited to tropical conditions. Although not a moss, *Utricularia gibba* looks most attractive stuffed down between the fissures of rockwork, where it will soon sprout delicate, thread-like stems which grow up towards the light.

## COLDWATER FISH-KEEPING QUERIES answered by A. BOARDER

**My pond is 7 ft. by 7 ft. by 2 ft. and is polythene lined. I recently bought two dozen goldfish but I cannot get any of them to eat. I have tried them with worms, maggots and all other fish foods. The fish are always on the bottom and close to each other. They never move except that one will sometimes swim to the surface and then returns. Why do they not feed?**

The reason may be that the water is colder than that from which the fish came. Most goldfish on sale have been imported from Italy. They have been bred under warm conditions and when they get into cooler water they become very torpid. The colder the water the less will the fish move about and need any food. When the water warms up they will probably be all right. Make sure that the water is in good condition and has not been through any copper pipes, as this can be very dangerous for fish.

**I have a John Brydon water lily in my pond (8 ft. by 5 ft.). The water is rather green; can I have another water lily to help shade out the light?**

Your pond is not large enough for another water lily, except perhaps a miniature one. As your pond has not been made very long you will do well to wait until the lily has become established when it will be quite large enough to give you all the shade you need. As the sun loses its power you will find that the water will clear of its own accord.

**I have a 36 in. by 15 in. by 15 in. tank and have made some rockwork for it. I used a bucket of cement and the rockwork has been in soak for 3 weeks. Will this be satisfactory or shall I paint it with water glass?**

You seem to have used a lot of cement and I trust that you have managed to leave plenty of swimming space in the tank when the rockwork is inserted! Remember that rocks are of no value in a tank to the fishes, they only help

to make up a picture. Too many rocks will deprive the fish of valuable swimming space. The rocks should be safe after a good soaking, but you can change the water after scrubbing the rocks and give them a further week's soak. Use of water glass should not then be necessary.

**I have a pond in my garden and I am thinking of growing water lilies in it. It is covered with duckweed and I wonder if I can have a few ducks on the pond to clear this up. Would wild ducks fly away?**

Wild ducks would certainly fly away, as they like to fly round about the area, especially at night when they do most of their feeding. They would have to be pinioned to stop this flying. However, I do not hold out much hope of success with water lilies and ducks together unless yours is a large pond. In small ponds the ducks would soon destroy the lilies. If you want to get rid of the duckweed just play a strong jet from a hose from one side of the pond to the other. The duck weed can be rolled over into a tight mass, when it can be raked out of the pond.

**I have two common goldfish, one moor, one veiltail, one oranda and two catfish. What surface area would I need to keep these fishes when mature?**

The necessary surface area for healthy fishes is 24 square inches of surface area to each inch of fish. Do not reckon the tail in this amount. The goldfish can grow to 9 inches in length, the other types to 4 or 5 inches. The catfish can reach over 30 pounds in weight in time, if they are the type known as European catfish. However, if the catfish have enough space in which to grow they would be likely to eat all your types of goldfish and so have more space for themselves!

## our readers



write

Readers are invited to express their views and opinions on subjects of interest to aquarists. The Editor reserves the right to shorten letters when considered necessary and is not responsible for the opinions expressed by correspondents.

Address letters to The Editor, *The Aquarist*,  
The Butts, Half Acre, Brentford, Middlesex

### Terrified Angel

I HAVE kept an aquarium of tropical fishes for 5 years and have not until now experienced such a strange occurrence as the one I am writing to you about. I have an adult angel fish measuring about 4½ inches who is normally very friendly, but he has taken an instant dislike to a new sweater which I wear. The sweater is mainly pale blue with a black and white tooth-like design across the chest. The first time I approached the tank wearing the sweater, the angel fish dived straight to the back of the tank, plunging himself headlong into the gravel. I was astonished at this, and stood back awhile and it was a few minutes before the fish reappeared, a little apprehensively. At the time, I did not associate the sweater as being the reason for the fish's fear. Later, I approached the tank again at the normal feeding time—and alas, the angel dived off pale with fright. The next day I wore a different sweater and all was well; the fish came up to me as usual for food.

A few days later I had occasion to wear the original sweater, and as I approached the tank, off dived the fish once more. I walked away immediately, and my husband, who was convinced that it was the sweater that had been terrifying the fish, went up to the tank very gently and out came the fish for his food. To satisfy ourselves of the cause of this incredible occurrence, we waited a week (during which time the fish acted normally) and I again wore the sweater. Needless to say, the fish dived off again.

Could it be that the angel thinks that it is another enormous fish approaching him? After all, the design of the white tooth-like stitches on the darker background obviously terrifies this fish into thinking that it may spell instant death to him!

I would welcome details of similar experiences or suggestions from other readers of *The Aquarist*.

(Mrs.) ANNE COCKS,  
Marlow, Bucks.

### Thermostat and Air Pump

I HAVE been keeping tropical fish for about 5 years now, and also coldwater fish. I set up a 24 in. tank some months ago and by mistake I wired the vibrator pump up to the thermostat. What happened was that when the heaters came on the pump started as well; when the thermostat cut out the pump went off with it. This seems to have some advantages: when the heaters come on the pump comes on with them making sure that the water is the

same temperature from top to bottom by circulating it. As the pump is on for about 10 to 20 minutes this ensures that the filters are doing their job. As the pump is off in spells it must mean longer life for it and also less noise. You must also save on replacements at the same time saving on electrical bills throughout the year.

G. SCARROTT,  
Brentford, Middlesex.

### A Correction

WITH reference to my article on *Trichogaster pectoralis* in the January, 1965, issue, will readers please note that in describing the antennae-like fins of this fish I used the word 'pectoral', which is wrong. I should have written 'ventral'.

JACK HEMS,  
Leicester.

### White Spot Disease

I BECAME interested in tropical fish with the acquisition of a 24 in. by 12 in. by 12 in. community tank, but with a limited knowledge of this unique pastime. My only help came from the local library, a fellow workmate and the December issue of *The Aquarist*.

Among the fish I purchased were a penguin and red-finned shark, the latter indulging in twisting and turning through the plants at all times of the day. As this action was too persistent, I took a closer look and found him to be suffering from white spot. Further investigation showed that the penguin and a pair of limias also were suffering from white spot—the penguin dying the same day.

Imagine my relief at finding two letters on this disease in your December issue and I immediately went in search of some methylene blue. A whole Saturday was wasted in this search, every chemist apologising and saying that methylene blue was out of use commercially.

I therefore had to curtail my search until the Monday, by which time the disease had spread to two platys and a Siamese fighter. Finally, a work's chemist was able to help me and made a 2½ per cent solution.

I administered this to the tank at the concentration of one drop/gallon of water, repeating this dose daily, until the white spot had been eliminated, on the following Friday. At the same time the temperature was raised to 90°F (32°C), and aeration and lighting were kept on continually. At the end of the treatment the plants showed no signs of after-effects, and the fish were back to normal.

This summary may give heart and help to any other



novice who finds this disease in his tank. Now, I'm waiting hand and foot on a gravid guppy!

C. BENT,  
Luton, Beds.

A proprietary bottled methylene blue solution is usually obtainable from aquarium stockists; as Mr. Bent has found, the chemical has to be specially ordered if required in the solid state from a chemist.—EDITOR.

## Thermostatically Speaking

(continued from page 200)

paint the plastic case with contact adhesive and apply a layer of aluminium cooking foil, cut to fit beforehand. The thermostat is fitted to the tank in the usual way and, with an expanded polystyrene ceiling tile as raw material, a little box is made to enclose the thermostat completely and to be a good fit to the tank glass. Some means must be found to hold this in place. This may be left to the ingenuity of the reader as the requirements will vary according to the lay-out.

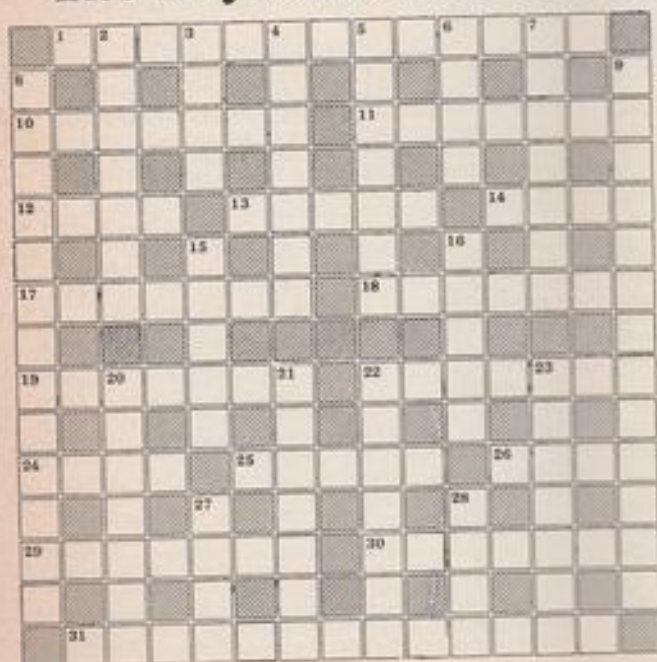
To add the finishing touch, stick expanded polystyrene to the ends and back of your tank and, if it stands on a metal, marble or other cold surface, get a piece of straw-board about an inch thick to stand it on. After this treatment I guarantee you will imagine your thermometer has become stuck at the chosen temperature!

## London Aquarium Show Meeting

THE Aquarium Show Exploratory Committee, whose formation was announced in our December issue, has prepared a questionnaire on the subject of a large-scale aquarium show in London in 1966. This document has been sent to all aquarium societies with a request for its return by 1st March with answers to these questions: Do you want a show in London in 1966? Should such a show be a championship show, which would be of interest only to aquarists, or a show with separate society exhibits, and with trade stands, that would attract the public, or an aquatic section to a much larger show that would include other pets and attract a much wider public?

Any society secretaries who have not received a questionnaire can obtain one by writing to the Committee, 9, Crossway, London, W.13. The results of this survey will be announced by the Exploratory Committee at the meeting place of the Hendon Aquatic Society, The Brotherhood Hall, The Broadway, West Hendon, N.W.9, on Thursday, 18th March (not 11th March as previously announced), and interested aquarists are invited to attend at 8.15 p.m. The Exploratory Committee's recommendations, based on the questionnaire replies, will be published in *The Aquarist* as soon as available.

## The AQUARIST Crossword Compiled by L. Bradley



### CLUES ACROSS

1. *Anepichthys jordani* (5, 4, 4)
10. Post of observation (4, 3)
11. See 7 down
12. Surround the castle with a re-arranged atom (4)
- 13 & 15 down. Is a dab reversed before and repeated for this member of the Nandidae? (5, 5)
14. Remnant of a sign (4)
17. The red variety were usually found in the Wild West (7)
18. Or a sand mixture produces ornamental fish (7)
19. Art of setting glass (7)
22. Type of *Cryptocoryne* (7)
24. Trees made from the Spanish manuscript (4)
25. Tyrant (5)
26. In which sticklebacks lay their eggs (4)
29. Type of *Cryptocoryne* that when curled produces a piece of string (7)
30. Type of material needed when dealing with the aquarium? (4, 5)
31. Used commercially to prevent cannibalism when rearing young fish (8, 5)

### CLUES DOWN

2. *Corydoras julii*, the jungle cat? (7)
3. No, no reverse time (4)
4. Forty winks taken by 2 down? (7)
5. Gloddiness (7)
6. Prevents over-loading on a circuit (4)
- 7 & 11 across. *Rasbora maculata* (7, 7)
8. *Anabas testudineus* (8, 5)
9. Cherry barb (6, 7)
15. See 13 across
16. Applied in coats (5)
20. A lover who becomes married (7)
21. Could be blue, pearl or opaline (7)
22. Ancestor of man's best friend (4, 3)
23. Named after Tiv, God of War (7)
27. Fish produced by many an expert (4)
28. A creator of fashion (4)

Solution on page 206



## from AQUARISTS' SOCIETIES

Monthly reports from Secretaries of aquarists' societies for inclusion on this page should reach the Editor by the 15th of the month preceding the month of publication.

AT the first January meeting of the **Thurrock Aquarist Club**, the club chairman, Mr. R. Nicholls gave a very interesting talk on white spot disease. He mentioned many useful tips on preventative measures and cures, etc. The talk was enjoyed by all club members. The second meeting for January was devoted to practical judging carried out by the members. In addition the table show for the month was held. There were 42 entries for the classes which were for guppies and the results were as follows:—Guppy (male): 1, Mr. R. Nicholls (fantail), 69 pts.; 2, Mr. B. Barber (fantail), 67 pts.; 3, Mr. P. Gowells (scarf-tail), 66 pts. and Master F. Bilham (fantail), 66 pts. Guppy (female): 1, Mr. E. Nichol (Golden), 69 pts.; 2, Mr. D. Durrant (wedgetail), 66 pts.; 3, Mr. D. Durrant, 65 pts. The club meets on alternate Monday evenings at 8 p.m. at Gipsy Lane Hall, Grays.

THE **Manchester and District Section of the Fancy Guppy Association** held their Annual General Meeting recently. The attendance was above the average. In his report, the chairman, Mr. J. L. Kelly, drew the attention of members to the fact that at committee meetings during the year the possible attendance figures were 105 and that the actual attendances were 101, the four absences being due to illness. He considered that the enthusiasm of the committee was a telling factor in the progress and success of the section.

In presenting his balance sheet, Mr. J. Allen, the treasurer described the year as one of achievement, the membership having greatly increased. The number of entries on the bench at table shows totalled 879 during the year and finally, the cash in hand balance was more than doubled. The three retiring officers were re-elected unanimously. The secretary reminded members that the New Standards Handbook was now available, price 3s. post free. Information on the Association may be had from the secretary, Mr. R. Bereford, 99, Valley Road, Aden Park, Redbury, Cheshire.

AT the December meeting of **Leeds and District A.S.** the following were elected as officers for the society for the year 1965. President, Mr. J. Smith; secretary, Mr. K. J. Buxeman, 131, Street Lane, Leeds 8; treasurer, Mr. P. Clarke.

AT the annual general meeting of the **Edmonton and District Society** branch of the Fancy Guppy Association, the following officers were elected:—Chairman, Mr. B. Webb; secretary, Mr. D. King; treasurer, Mr. R. Souster; show secretary, Mr. L. C. Souster. A report on the past year's activities was given, particularly on the successes by members at various shows. The increase in the membership, and the finances which are on a sound footing. Mr. C. MacRae won the Points Cup for the table shows. The society meets on the third Friday in the month at Salisbury House, Bury Street West, Edmonton, N.9. Enquiries should be made to Mr. D. King, 213, Lonadale Drive, Enfield, Middlesex.

THE annual general meeting of the **York and District A.S.** was held recently and the following officers and committee were elected:—Chairman, Mr. H. G. Sutton; vice-chairman,

Mrs. J. Hields; secretary, Mr. G. B. Hawkshy, 65, Beaconfield Street, Acomb, York; treasurer, Mr. A. Singleton; committee, Mrs. C. Bingham, Mrs. L. Greenwood, Mr. M. Cooper, Mr. D. Parlane. The C. B. Dabry trophy for the member gaining most points from the monthly table shows was awarded to Mr. G. Pygott, Mr. H. G. Sutton and Mr. M. Cooper tied for second place.

THE **Merseyside A.S.** are holding their annual open table show on the 16th May at the Montrose Social Club, Richmond Terrace, Liverpool 5 (off Breck Road). Benching will be at 12 noon to 2 p.m. promptly. All enquiries should be made to show secretary, Mr. P. McConville, 24, Cornice Road, Liverpool 13.

AFTER an encouraging start to the new year, members of the **Independent A.S.** unanimously agreed that the present quarter should be well worth patronising, consisting as it does, of five table shows, two or three good lectures (one especially on anabantids which are very popular in the club) and a film show given by the Independent Film Unit based on Marine Aquatic subjects in colour. This will be shown on March 8th.

Having gained many new members recently, the society are endeavouring to get even more, and cordially invite any person keeping fish, or even mildly interested in the hobby, to come along any Monday at 8 p.m. at Montem School, Hornsey Road (corner of Seven Sisters Road and Hornsey Road, N.4). The present quarter closes with the yearly annual general meeting on Monday, 29th March, where the re-election of certain officers will take place.

AT the **Llantwit Major A.S.** table show, Ken Farrant, the society's chairman, had a field day. He took first, second, third and fourth places in A.V. egg-layers; second, third and fourth in A.V. livebearers; Malcolm Skitchley took first in the latter event. Recently the members heard a tape recording by Dr. Cole on "Genetics" and they also took part in a Quiz on the hobby last month. The date for the annual show, has been arranged for Saturday, 12th June.

DURING the past month the **Hounslow and District A.S.** has held table shows for three classes of tropical fish. In a show for characins, Mr. Thorne was first with a bloodfin; second, Master Walker (neon tetra), third, Mr. Bout (monomonostus beckerfordi). In a show for barbids the result was 1, Mr. Nelhams (roxy barb); 2, Mr. Thorne (Stoliczkanus barb); 3, Mr. Thorne (roxy barb) in an A.O.V. the places were: 1, Mr. Bout (fermouth); 2, Mr. Thorne (red tailed shark); 3, Master Walker (kahlil loach). The society also enjoyed a talk by Mr. Simon on the making of aquarium covers out of sheet metal. Plans are now being made for various outings during the coming spring and summer.

THE following officers were elected at the annual general meeting of the **Manfield and District A.S.**:—Chairman, Mr. A. Atkins; secretary, Mr. R. V. Dyson, 14, Dalestorth Street, Sutton-in-Ashfield, Notts; treasurer, Mr. J. Bower; show secretary, Mr. R. Martin; minutes secretary, Mr. J. Cottingham; social secretary, Mr. C. Hill; librarian, Mr. W.

Walters. The chairman, Mr. A. Atkins, expressed the Society's appreciation to Mr. J. Curtis, the retiring minutes secretary for his committee work during the two years that he has held the office. Meetings are held fortnightly on Mondays at the Old Meeting House, Stockwell Gate, Mansfield, Notts., at 7.30 p.m.

AT a recent meeting of the **Newport A.S.**, members were informed that a full programme of events had been compiled for this year. Arranged for the meeting of 15th March is a case-film show by Mr. N. Mason-Smith of Cambridge, to which an invitation is extended to all aquarists in the area. Opening the first meeting of the year, the chairman, Mr. Colin Salmon, gave a resume of achievements of society members during the past year, and stated that he hoped for even better things in 1965. A talk on "Fish-keeping for beginners" was given by Mr. Jim Wall.

THE election of officials of the **Thorne A.S.** resulted as follows:—Chairman, Mr. J. Broom; secretary, Mr. D. Wells, 10, King Edward Crescent, Thorne, near Doncaster; treasurer, Mr. M. Hobson; committee, Messrs. Burns, Hill, Sanders and Snowden. At the last meeting a quiz was arranged with Goole A.S. The result was a resounding victory for the visitors.

The table show position for barbs was as follows: 1, Mr. T. Kirk (Cumings); 2, Mr. B. Duffield (rimfold); 3, Mr. R. Snowden (Tiger). The Society are to have two meetings a month, to be held on the second and last Thursday. The date for this year's open show at Thorne is the 30th May, 1965.

THE **Macclesfield A.S.** held their annual open table show recently, and the results were as follows: Best fish in show, Mr. Chadwick (Aireborough Society). Livebearers: 1, Mr. Neal (Salford); 2, Mr. Davies (Derby); 3, Mr. Neal (Salford). Labrynth: 1, Mr. Mulla (Merseyside); 2, Mr. Richardson (T.A.B.); 3, Mr. Bradley (Macclesfield A.S.). Large characin: 1, Mr. Mulla (Merseyside); 2, Mr. Pibigur (Derby); 3, Mr. A. B. Cuss (Macclesfield A.S.). Small characin: 1, Mr. Lancaster (North Staffs.); 2, Mr. Stamper (Merseyside); 3, Mr. E. Pillinges (Merseyside). Barbs: 1, Mr. Chadwick (Aireborough); 2, Mr. Davies (Derby); 3, Mr. Pibigur (Derby). Carp and danio: 1 and 2, Mr. Krywador (Aireborough); 3, Mr. Ledley (Stone A.S.). Cichlids: 1, Mr. Mulla (Merseyside); 2, Mr. S. Davies (Derby); 3, Mr. Harper (Macclesfield A.S.). Loach, catfish A.O.V.: 1, Messrs. H. & E. Wilson (Macclesfield A.S.); 2, Mr. Beck (Merseyside); 3, Mr. G. Davies (Derby). Dwarf cichlids: 1, Mr. McConville (Merseyside); 2, Mr. Hutchinson (Belle Vue); 3, Mr. Cooke (Macclesfield A.S.). The show was well supported with a total of 176 entries. Mr. F. Partington, F.N.A.S. judged.

THE annual general meeting of the **Dunstable and District A.S.** was held early in January. The officers' reports for the Society for the year 1964 were read and approved, and the election of officers for 1965 resulted as follows: President, Mr. Ken Ward; chairman, Mr. R. Gilbert; vice-chairman, Mr. G. Kilby; treasurer, Mr. A. Buchanan; secretary, Mr. P. Kavanagh, 37, Chase Close, Arlesey, Beds.; show secretary, Mr. M. Dixon. The Society is affiliated to the F.E.A.S. and is a member club of I.M.A.S. Meetings are held on the first Tuesday of each month at Beech Hill School, Luton, and new members are particularly welcomed.

AT the annual general meeting of the **Houghton-le-Spring and District A.S.**, the chairman reported that, although only a year old, there had been a steady influx of new members. He was also pleased by the number of members who had been successful in inter-club shows. The treasurer reported that the Society had had a very good year financially. Officers elected were: Chairman, Mr. H. Hartshorne; secretary, Mr. T. Westgarth; assistant secretary, Mr. C. Standish; treasurer, Mr. D. Sharples; show secretary, Mr. M. Coxon; liaison officer, Mr.



J. Hughes; publicity officer, Mr. J. Lanaghan; committee, Mr. R. Watson and Mr. D. Unsworth.

THE members of the Newcastle Guppy and Livebearer Society took part in a discussion on queries, followed by a jar show of platys, judged by Mr. S. Fox. The results were: 1, R. Skyles; 2, N. Little; 3, J. Read. Anyone interested in the Society should contact Mr. R. Skyles, 189, Fosway, Walkergate, Newcastle-on-Tyne, 6.

THE Sheffield and District A.S. annual dinner and presentation of Society awards held recently was attended by 60 members. The following awards for table shows and other competitions in 1964 were presented by the president, Mr. W. Taffe. Richardson Cup—Club member of the year, Mr. K. Colton; Portway Cup (best individual fish), Mr. D. Richardson; Colton Cup (lighters), Mrs. Taffe; Chapman Cup (cichlids), Mr. D. Richardson; Hudson Cup (guppies), Mr. R. Totham; Tawnoe Cup (breeders), Mr. K. Colton; Brookes Trophy (a.s. coldwater), Mrs. M. Knowles; Brookes Trophy (a.s. seaed pairs), Mr. A. Watson; Richardson Cup (barbs), Mr. A. Watson; Beech Cup (characins), Mrs. Taffe; plaques for members gaining highest total number of points in table shows: 1, Mr. R. Galloway; 2, Mr. A. Watson; 3, Mr. H. Crossland; junior member award, Mr. A. Watson; Beever Cup (home furnished aquaria competition), Mr. D. Craven; competition for member gaining highest number of awards at open and inter-society shows, Mr. K. Colton.

The fifth annual open show will be held in the Merrybrook Ventry Hall, Merrybrook Park Road, Sheffield, 8, on Sunday, 29th April. Schedules are available from the show secretary, Mr. K. Colton, 33, Delver Avenue, Sheffield, 12. The society hold fortnightly meetings to which new members and visitors are welcome. Further details are available from the hon. secretary, Mr. R. E. Galloway, 71, Bent Lathes Avenue, Rotherham.

THE Nelson A.S. held their annual dinner recently at which 40 members and friends attended. The Senior Cup for the most number of points over the last six months was awarded to Mrs. Crick. The Junior Cup went Master N. Hargreaves. The Society's next open show will be held on 4th April in the Romany Ballroom, Nelson, from 12 noon until 6 p.m.

SINCE the notice regarding the Reigate and Redhill Tropical Fish Association appeared in the December issue, future plans have been slightly altered. The meetings will be held on the first and third Mondays in every month at the "Tea House", Earlswood Road, Redhill. Mr. B. Geal is now treasurer.

All communications and enquiries should be addressed to the secretary, Mrs. S. Packman, 107, Prince Albert Square, Earlswood, Redhill, Surrey.

THE main feature at the January meeting of the Airedale and District A.S. was a quiz organised by the president, and to make all members participate he split the meeting into small groups, mixing old members with the new. The quiz was won by the group led by Mrs. A. Hampson.

There was also a letter received from the Greater Pittsburgh A.S. Inc., Pennsylvania, U.S.A. asking if any of the members would like to correspond. They enclosed a list of names and addresses which were passed on to the members. The result of the monthly table show was as follows: Specified class (livebearers): 1 and 2, Mr. I. Chadwick; 3, Mr. K. Emma. Any other variety class: 1 and 3, Mr. I. Chadwick; 2, Mr. K. Emma. Novice a.o.v. class: 1 and 2, Master Caper; 3, Mr. Tyler.

THE Rugby and District A.S. held their annual meeting recently, when the chairman, Mr. V. Robinson, commented on the increase in membership and attendance over the past year. Thanking everyone for the enthusiasm and support in all spheres of the club activities and an enjoyable year all round, he finished with

a vote of appreciation to the secretary, Mr. R. Deacon, and news letter editor, Mr. K. Russell. Mrs. Plesance followed with the treasurer's report which was accepted as favourable. Mr. R. Deacon gave a brief summary of the year's activities and encouraged members to carry on and try to make next year even better.

Mr. V. Robinson, Mr. W. Smith, Mr. R. Deacon, and Mrs. Plesance were re-elected as chairman, vice-chairman, secretary, and treasurer, in that order. Two new appointments were, Miss Shaw as minutes secretary and Mrs. Pearson as show secretary. An executive committee consisting of Mr. Robinson, Miss Shaw, Mrs. Plesance, Mr. Bennett, Mr. Edden, Mr. Pearson and Mr. Whitney, was elected.

THE Clapham A.S. would like to announce that at their annual general meeting, the secretary Mr. E. W. Evans, resigned his office after serving for seventeen years, and would like to thank him for all that he has contributed to the Society. The new secretary is Mr. K. A. Saunders, and any amateur interested in becoming a member should contact him at 24, Berber Road, S.W.11, or are welcome to attend a meeting of the Society, meetings being held fortnightly (Tuesdays) at 56, Peter Church Hall, Clapham Manor, Street, S.W.4.

THE table show of the Sittingbourne and District A.S. resulted as follows: Livebearers: 1 and special award, Mr. B. Collins; 2 and special award, Mr. A. Gibson; 3, Mr. J. Bizard; 4, Mr. P. Lee. Egglayers: 1 and special award, Mr. K. Hollingsworth; 2 and special award, Mr. B. Collins; 3 and special award, Mr. H. Lowder; 4 and special award, Mr. J. Blizard.

A special award is given when the judge awards points of 85 or more out of a total 100. This represents a very high standard in the fish shown. A programme of "Any questions" was also held. Meetings are held at Westlands School, Sittingbourne, and any new members will be made very welcome.

IN the absence of a speaker, a crisis-cross quiz session was held at the December meeting of Coalville and District A.S. Chairman was the Society chairman, Mr. J. H. Hemmley, and the winner of the competition was Mr. A. Pickering. The winners of a table show in four classes were: A.V. corydoras catfish: 1, D. Plamson; 2, V. H. Tiley; 3, C. Gerrant; 4, A. G. Ings. Neon: 1, J. A. Reed; 2, Miss A. Ward; 3, R. D. Underwood; 4, P. Scretion. Platys: 1, D. Plamson; 2, V. H. Tiley; 3, M. Yeomans; 4, P. Scretion. Coldwater: 1 and 2, J. Kelham; 3, M. Yeomans. The coldwater class was held for the first time and was made open to non-members in an effort to attract more coldwater fish-keepers into the Society. Winners of the Society's home aquaria competition, the trophy for which was a wood-carving, made and donated by the chairman, were: 1, Mrs. A. G. Ings; 2, J. A. Reed; 3, V. H. Tiley; 4th equal, G. Degg and A. Taylor. The competition was judged by Mr. D. W. G. Fretwell, of Burton-on-Trent, and presentations of the trophy and place-cups took place at the first annual dinner at the Fox and Goose Hotel, Coalville.

#### NEW SOCIETY

THE formation of a new society to be known as the Creswell and District A.S. is announced. The elected officers are as follows: President, Mr. R. Edwards; chairman, Mr. Healey; secretary, Mr. S. Knowles, 58, Duchess Street, Creswell, Worksop, Notts.; treasurer, Mr. R. Hajper.

The Society meets on the first and second Thursday in each month at the Church Rooms, Duke Street, Creswell, at 7.30 p.m. and prospective members in the area will be very welcome.

THE Portsmouth A.S. home aquaria competition consisted of a tour of competitors' homes for the purpose of inspecting, and marking, established aquariums by an independent judge. It was divided into two sections—coldwater and tropical. Judge was Mr. R. Masley, of Bournemouth and the results of his findings were as follows: Coldwater: 1, Mr.

W. Ryder; 2, Miss W. Ryder; 3, Mr. V. Hunt; 4, Mr. V. Hunt. Tropical: 1, Mr. N. Franklin; 2, Mr. J. Stillwell; 3, J. Stillwell; 4, Mr. D. Perce. The Society held a "Beginners Night" meeting for the benefit of all newcomers to the hobby of fishkeeping. The evening's proceedings consisted of a series of talks given by four of the established members ranging from the basic principles of fishkeeping (Mr. J. Stillwell) to the individual aspects of the aquarium images (Mr. J. Stillwell) and Mr. V. Hunt), their feeding (Mr. W. Ryder), the planning out of the aquarium (Mr. M. Mason) and, lastly, the electrical appliances associated with tropical fish (Mr. J. Stillwell).

A MEETING was held in the Adult Education Centre on Thursday, 21st January with the object of re-forming the Worthing Tropical Fish Club. The meeting which took the form of a general discussion evening, was presided over by a five man committee, with the club secretary taking the chair, being the only elected officer at present. During the evening two new members were enrolled, one of whom, Mr. W. G. English won the first prize in the raffle, which was a pair of Siamese fighting fish. Mr. English was also elected to help serve on the committee.

The meetings are held on the third Thursday in each month. Any persons interested in fish-keeping are welcome to attend these meetings.

For any further information, please contact the secretary, David Newport, 116, Western Road, Sompting, Sussex, who will be pleased to supply details.

A NEW chairman was elected at the Derby Regent A.S. annual general meeting, when Mr. P. Hanks, after several years' service, did not seek re-election. Mr. J. Burrell, an enthusiastic worker for the Society for a considerable number of years, was chosen to succeed Mr. Hanks, who was thanked for his efforts in the cause of good fish-keeping. A balance in hand was reported by the treasurer (Mr. J. Darbyshire).

The Society's third annual open show is to be held at the Railway Institute, Derby, early in May and efforts to make it a bigger success than ever are to be made. More particulars later. Mr. T. F. Jerram, of 36, Almond Street, Derby, who became secretary of the Society *pro tem* several months ago, was unanimously elected to the post, with Mr. S. Grattan as his assistant. Others elected: Vice-chairman, Mr. A. Bettany; treasurer, Mr. J. Darbyshire; show secretary, Mr. A. Widdowson, 19, Finchley Avenue, Mackworth Estate, Derby; librarian, Mrs. S. Grattan; committee: Messrs. H. P. Finch (president), J. Burrell, A. Bettany, T. F. Jerram, S. Gerrant, J. Darbyshire, A. Widdowson, P. Hanks; show committee, Messrs. Widdowson, Hallam, Kendrick and Hanks.

### Crossword Solution

B	L	I	N	D	C	A	V	E	F	I	S	H
C	E	O	A	E	U	P	B					
L	O	O	K	O	U	T	R	A	S	B	O	R
I	P	N	N	T	E	T	R					
M	O	A	T	B	A	D	I	S	S	T	U	B
B	R	B	P	G	P	E	U					
I	N	D	I	A	N	S	O	R	A	N	D	A
N		D				I						T
G	L	A	Z	I	N	G	W	E	N	D	T	I
P	D	S	O	I	T	U	T					
E	L	M	S	B	U	L	L	I	N	E	S	T
R	I	D	R	D	D	S	E					
C	O	R	D	A	T	A	D	R	I	P	D	R
H	E	C	M	O	O	A	A					
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PREPAID ADVERTISEMENTS—continued from page xiii

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