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Japanese Koi

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The Editor accepts no responsibility for views expressed by
contributors.

Editor: Laurence E. Perkins

August, 1970

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Breeding Goldfish

SUMMER CARE

By A. Boarder

AFTER THE FIRST spawnings in the pond it is necessary to watch the adult goldfish to make sure that none has been damaged during the exertions of breeding. Any damage to a fish, however slight, may become affected by fungus disease. The fish will also require a steady feeding-up to make up for the loss of strength during the spawning. A varied diet is best for the fish at this time of the year and as long as they remain healthy they will feed quite well. However, this

Dragonfly larva



does not mean that unlimited food is given irrespective as to whether the fish are taking it or not. Always offer a very small quantity of food at first and then, if it is seen that the fish take it readily, some more can be given but always stop feeding before the fish have eaten all that has been given. No ordinary pond fish can take a large meal at a time and so if too much is given after the fish have had enough at one time, some of the food may fall to the bottom, be lost, and then start to decay. This uneaten food can soon pollute the water, especially during the warm weather.

During the warm weather it is a good plan to change a large quantity of the pond water for fresh. This is more necessary if the water does not appear to be fairly clear and has a bad smell. If possible, take out up to a third of the water and replace with fresh. This will help to bring the fish into a healthy condition. It might also spark off another spawning as it is certain that if fresh water is run into a pond it will always encourage the fish to spawn since they normally do so in well-oxygenated water. Tap water will be quite safe to use as any chlorine in the water will soon be neutralised by the water already in the pond.

Some of the water plants may need attention as most types grow apace when the water warms up. This is the time of the year when the pondkeeper who has been too liberal with water lily planting, finds out his mistake. A new water lily may look very tiny when first purchased but after a few weeks of growth in the pond it may take over most of the surface with the result that much of the surface of the pond will be covered with leaves and the fish will not be visible. Another bad fault with a lily is that if the pond surface becomes too crowded with leaves many of them will start to grow up into the air instead of lying flat on the top of the water. Once this happens I consider that the whole appearance of the pond will be spoilt. I have known pondkeepers plant their pond with so many water lilies

in the first place, that after a very short time no water is visible, let alone fish.

Another fault which may become apparent is that once a water lily makes plenty of leaves it can float up to the surface of the pond. This is because the root stock has not been properly planted and secured in the first instance. Where a pond is constructed and set up with no base compost it is usual to plant water lilies in plastic containers and unless these have been well weighted down with turf and stones, it is possible for the whole mass to float up to the top and then it becomes difficult to get the roots back. The only way appears to be to tie two heavy pieces of paving stones or bricks on plastic cord and by passing this through the middle of the water lily, weight it down to the bottom again.

If there are not enough water plants in the pond the water may remain green with Algae and one is then inclined to get more plants to improve conditions. If this is the case do not be tempted to go out and search local ponds and rivers for plants. This may sound a very cheap way of planting the pond but beware of many troubles which may ensue. I speak from experience. There is no end to the various pests and diseases which can be introduced into a pond with plants and live foods from the wild. My first experience with trouble came over thirty years ago when I brought in some *Daphnia* from a local pond. These water fleas were intended to hasten the growth of a large spawning of fantail goldfish, but before long I found that they were all

Water Beetle larva



August, 1970



Water Boatman

infested with gill-flukes. I had great difficulty in ridding the fry of these pests and since then I have never used any *Daphnia* nor *Tubifex* for feeding purposes. Once anyone experiences the losses which can occur from such introductions they will never do it again. I know that many breeders swear by *Daphnia* and *Tubifex* as feeding aids, but one of these days disaster will strike and the pondkeeper will say, "Who would have thought it?" The same applies to introducing British coldwater fishes to the pond. Many years ago I was given a fairly large green Tench which had been caught locally. This fish brought with it a bad dose of fish lice which took me almost a year to get rid of.

I am sure that fungus disease can be introduced into a garden pond with plants or live foods from the wild. Many years ago I had the occasional goldfish attacked by fungus disease during the spring. Since I have had nothing in the form of plants nor live foods in my pond from the wild, I have not had a single case of fungus on any fish, and this is for many years now. As for *Daphnia*, these can bring in so many troubles that one wonders how so many aquarists get by without serious trouble with their fish. If one examines a catch of *Daphnia* from an open pond, it is almost certain to contain many other creatures, some perhaps too small to see with the naked eye. Of those which may be seen are water boatmen, the larvae of dragon flies and water beetles as well as water scorpions, leeches, fish lice, anchor worms, etc. Also some sources of trouble which may not be apparent, such as the eggs of pests and cysts of white spot disease. With all these possibilities one wonders how so many pondkeepers get by without introducing many pests when they gather plants and live foods from the wild.

The question as to what to do about feeding the

Continued on next page

PUTTING ON A SHOW

By W. R. Sherwin, Show Secretary, Hendon & District A.S.

IT IS THE AMBITION of all Clubs to make their Annual Show a spectacle that will enhance their reputation in the hobby and at the same time encourage those fishkeepers in the area who are not already members of a club to join; also, this event does enable a display to be made to the local population showing what the hobby is all about.

Having elected a Show Secretary, the Club can sit back and laugh, knowing that if things go wrong he will carry the can! All those troubles over entries, accommodation, tanks, heating and lighting, refreshments, etc., plus the hundred and one items that can and do arise, are the prerogative of the Show Secretary who will be held responsible. However, this is not quite correct, as all Clubs have a hard core of members ever willing to undertake specific jobs, and it is on these hard-working stalwarts, the lifeblood of all Societies, that the brunt of the work will fall.

Entry forms are sent out, and closing dates mean little. At that time you have not received enough entries to make a good-sized table show, so undaunted you start phoning around to friends, acquaintances and those you don't really know, pleading for their support. All the time the erratic hobbyists are sending in entries and you spend time in sorting out the classes, calling on entrants for details of breeding dates, and then scouring the area for a tank for Fred Bloggs who has entered so large a fish it seems as if it will go in the Whale class! Having fixed it you then receive a call to say the poor thing has passed on and so that large space on the bench will now need to be replaced with something else.

Dealing with these problems is part of the job and you now find that it looks as if the prospects of a reasonable show seem assured. You hasten to make out the Judging Sheets and you can smile and hand them over to those "Solomons" to impart their verdicts. Whatever they do it will not be your fault, and the Sheets can be displayed for all and sundry to find fault with, and those who did not get a card will probably do just that.

Minor things like making out the award cards, and sorting out the trophies to be awarded are taken as they come. For you the day is almost over, but not quite. That magic word "breakdown" is the signal for a real time-and-motion-study exercise. Things that took days to prepare are cleared with the rapidity of the Concorde going through the sound barrier. Then peace reigns supreme and it is all over for another year.

You return home and the phone has stopped ringing. All you have to do is face the next meeting of the Club and account for your errors. However, despite minor upsets you are surprised to learn that the majority of members are satisfied and so you find yourself agreeing with the criticism and vowing that the experience will stand you in good stead in the future! After all, Shows get you among fellow aquarists and help to spread the hobby, so the total result must be judged worthwhile.

Nevertheless, next time your Club has a Show, give a helping hand, an Open Show means that some of the members have a lot to do.

Remember a Show Secretary's life can be quite a happy one, if he GETS HELP!

Breeding Goldfish—continued

fish in the pond whilst one is away is always cropping up. I suggest that the pond is left to its own devices and that no one is allowed to feed the fish at all. Well-meaning neighbours are sure to give too much food and so the fish are best left alone. As to goldfish in an indoor tank, these can also be left without food. Before going away feed as usual and do not give the slightest bit of extra food. If any light is

over the tank see that this is off. See that the water is in a good condition and if aeration has been used it is better to keep this on. Try to ensure that the tank is not likely to get warm, as the fish will be better in cool water. Shade away any possible sunlight and leave the door of the room open if any window faces south. With these conditions the fish will be quite safe for weeks.

WATER-FLEAS

By B. Fry



THERE ARE NUMEROUS species of water-fleas or *Daphnia* native to the fresh waters of this country. They belong to the order of crustaceans known to zoologists as cladocerans. All are especially abundant during the summer months in ponds and lakes rich in free-floating algae, protozoans and bacteria upon which they feed.

The shell of the water-flea is in one piece bent over at the back. It is so thin that the internal organs are visible, and with the aid of a simple lens it is possible to watch a lot of the workings of the body. Every so often the shell is renewed. This renewal of the shell

is called a moult. A brood pouch is situated in the hind part of the shell. In this the female stores and hatches her summer eggs. Summer eggs always develop into females, which continue to breed more egg-carrying females without the presence of a male. But with the approach of winter fertile males make their appearance in every brood. These seasonal males fertilize the winter eggs which are enclosed in a protective case called the ephippium. The ephippium breaks loose at the late moult and the eggs contained in it remain dormant until the following spring or a protracted spell of mild weather. Then, with a rise of temperature, the eggs hatch and a fresh lot of females appear to carry on the cycle as before.

Ordinarily the colour of *Daphnia* is pinkish brown, but when they multiply to excess they deplete the oxygen dissolved in the water and this brings about a change in the colour of their respiratory pigment (haemoglobin): it assumes a deep rust-red hue.

Fish, newts, hydras, and so forth, could hardly continue to exist without water-fleas to feed on. Insectivorous plants popularly called bladderworts eat *Daphnia* too. *Daphnia* taken from farm ponds sullied by ducks and other livestock are often the cause of diseases and pests appearing as though by magic in the aquarium. Thus every bag or can of *Daphnia* collected in the wild or obtained from a dealer should be closely inspected for leeches, beetles and various larvae. Further, the water-fleas should be transferred from the water they have been carried home in to clean water before giving them to fish.

It is not difficult to keep a small culture of water-fleas alive and breeding in an old sink or wooden half-tub sunk in the ground. Decaying vegetable refuse, an occasional teaspoonful of dried blood or brewers' yeast or the water from a flower vase introduced into the water will do a lot towards keeping a supply of micro-organisms going on which the *Daphnia* feed. Always introduce such things sparingly, however, for too much of a good thing will turn the water bad and the *Daphnia* into corpses in next to no time.

Inter-Pet "Win a Powerstream" Competition

Inter-Pet Ltd. inform us that they have received a good response to this competition but that several promising entries were not accompanied by the required packet top from either Inter-Pet Polymer Wool or Inter-Pet Filter Carbon.

“Collecting Marine Invertebrates”



By Huw Collingbourne

ANEMONES MAY BE found adhering to rocks all over the shore. In most cases it is best to find anemones attached to small rocks that may be brought back complete or those sticking to rock pool vegetation which can be removed with ease. When experience is gained another method can be used. That is to slip the blade of a knife *carefully* under the base of the anemone and quickly flip it off the rock on which it lives. Those of us with long thumb nails have an advantage here as these can be employed in the same manner.

Tube worms are fairly common but I have only been able to find those individuals whose tubes are implanted firmly in the crevice of some rock and I have had little success in collecting them. However, a miniature version of the Peacock Worm is the tiny fan worm *Pomatoceros triquetus* which grows to the mammoth size of 5 cm. (2 in.), though they are usually much smaller. These little creatures live in triangular tubes of a calcareous nature and although the fan itself is tiny it can be quite strikingly beautiful in red, blue, black, yellow or combinations of those colours. These worms live on rocks which are easily



identifiable by their many hard, limy tubes. On these rocks there will probably be Acorn Barnacles, *Balanus* sp., also.

Sedentary on rocks, also, live sponges such as the Bread-Crumb Sponge, *Halichondria panicea*, and the sea-squirts like the tiny Golden Sea-Squirt, *Botryllus schlosseri*. Many other interesting animals spend their lives attached to rocks and these are very easy to collect. On many shores there is a section made up of chalky rock and when creatures are attached to this it is a simple matter to knock a piece off with a hammer and chisel and bring home the rock complete with the chosen specimens.

Often it can be most profitable to find a piece covered with a luscious growth of algae as this may shelter hundreds of unnoticed beasts including burrowing creatures.

Cockles and other bivalves are easy to collect along with Whelks and similar browsing molluscs, but crabs and lobsters are a different matter.

Who has not had his finger nipped by a crab? Oh, it is not so very bad. However, it is not advisable to probe around with ones fingers under rocks; most

rock pool crabs only pinch but few would welcome a lobster attacking their hands! Lobsters can do serious damage so be careful and use a stick to probe where you cannot see. Once you have found your crab, (leave lobsters to experienced hands) hold him each side of his shell and put him into a jar, not a plastic bag which he can easily break. Do not be misled by apparent egg masses on the underside of the crab, this may be a parasite.

Another crab which is very common and of much interest is the Hermit Crab, *Eupagurus* spp. To the untrained eye Hermits may be overlooked as just Whelks or their empty shells. To distinguish Hermits from other shells in a large rock pool, watch the Whelk shells carefully. When a shadow falls on to a pool the crabs retract into their shells and you may see a small but sharp movement of the shell indicating a crab is in residence.

The Common Prawn, *Palaemon squilla* and the Shrimp, *Crangon crangon* are very common indeed, and the Prawn especially is an interesting creature. They are quite difficult to see as they have transparent bodies, so a different approach must be employed to capture these. Sweep a net under a rock with overhangs of dense vegetation and Prawns are almost certain to be caught.

Likewise Shrimps and Prawns may be netted with

a sweep of the net through the sandy bottom of the rock pool.

The Chameleon Prawn, *Hippolyte varians*, is a small scavenging crustacean which grows up to 1.5 cm. ($\frac{3}{8}$ in.). Although it is abundant around our shores it is difficult to find because, as its name implies it is a master of camouflage. The only way to capture the Chameleon Prawn successfully is by sweeping a net through the sand and it is only pure luck that you may catch any.

It can be a good idea to bring a jar full of sand from a rock pool, home with you. By doing this I have found Brittlestars, tiny crabs and young Lugworms, small Shrimps and shell-fish.

When you arrive home put your little collection in a well-aerated tank with clean gravel or coarse sand unless an under-gravel filter is employed when only gravel can be put to use. Provide caves for the Prawns and crabs and it is a good idea to bring home some red or green sea-weed as well.

Put any anemones not attached to rocks on a stone in a separate non-aerated jar and add these later as they would not have a chance to stick to a rock with constant buffeting of moving water. Keep crabs, excepting Hermits, in a tank to themselves and do the same with Lobsters as these animals are very destructive and cannot live peacefully in a community.

A DIP INTO THE PAST

By A. Boarder

I HAVE just come across a little book entitled "A Handy Guide to Fish Culture," by J. J. Armistead, which was written in 1897. A considerable amount of useful information is included in this book, but I must admit that I had never read the book in the past nor can I remember where the book was obtained. The style of writing is so different from that of today that I feel that many of our readers would like to know of the flowery language used at that time. Were I writing now-a-days as to Trout breeding, I would just state:—"Trout spawn in late Autumn," and leave it at that. Not so Mr. Armistead as he wrote:—"In our Northern Country, when the wild autumn blast howls through the woods, scattering the faded leaves and the withering brackens have clothed the moors with the russet garb so well-known at that season of the year; when the more tender plants in the garden have fallen under the first touch of frost, and the higher hills have received their crest of snow, so surely will the trout in

our streams be impeded by that wonderful instinct, the mysteries of which man has never yet been able to unravel, to push towards the head waters of the brooks which they inhabit, entering nearly every little creek and ditch in search of suitable spawning ground...".

What a wonderful flow of words which one would not dare to use these days. It may be that no one has the time to spare either to write or read such lengthy sentences. Today the reader only has time to take in the absolute minimum words in order to obtain the information required. Yet one cannot but wonder when this style of writing went out of fashion. Only a mere eleven years after the above was written I was writing a monthly article on the British fresh-water fishes for our school magazine, at the tender age of thirteen. I am sure that my schoolmaster would have frowned upon any such efforts on my part, apart from the fact that I would have been too darned lazy to

write so much, seeing that the magazine had to be written in long hand.

I suppose that my style of writing was influenced mainly by the instruction I received when training for the Metropolitan Police at the end of 1919, after being demobilised from the army. We were taught never to use a big word if a small one would do; to give all the relevant facts in our reports but to leave out all unnecessary padding. I cannot help wondering what my inspector would have said if I had given him a report written in the style of J. J. Armistead.

I was also interested by some of the prices for ova and water plants shown at the end of the book in

question. Three different water lilies are advertised at 1/- each and pondside plants at from 6d., to 2/- each. The price of eyed ova of trout ranged from 10/- to £1 per thousand. While fry of salmon and various species or varieties of trout were priced at from £1 to £3 per thousand. The ova of perch are also listed at 4/- per thousand and several species of coarse fishes are offered as fry at from 15/- to £1 per hundred.

Most aquarists are concerned at the high price of some fish foods but what about this from the same book?—'A specially prepared fish meal for feeding trout and salmon fry, 14 lbs. 4/-; 32/- per cwt . . .' They were indeed the "Good old days."

Do you know this fish?

MADAGASCAR RAINBOW FISH

By Bill Simms

THIS FISH is not very well known yet, but when it becomes more easily obtainable it should be popular. The body is greenish and fins and tail have some red on them. Its size is 1½ to 2½ inches long, and it is a peaceful though lively dweller among other fishes.

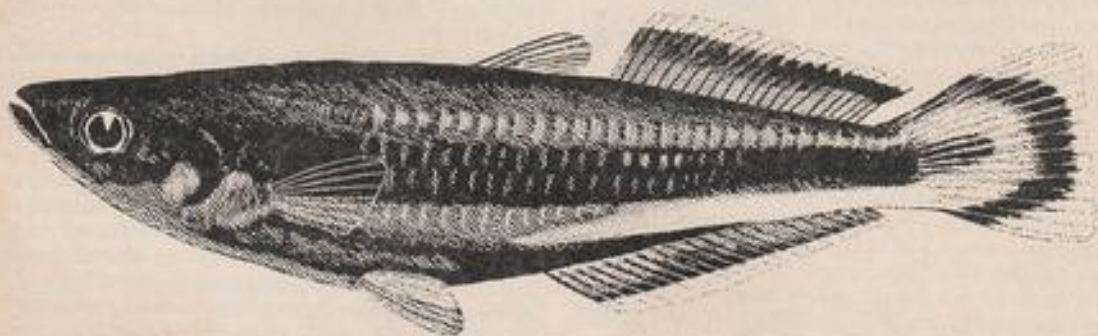
The most important thing to know about this fish is that it will not tolerate acid conditions for long. Neutral to slightly alkaline water suits it best; about 7.3 to 7.4 pH. Its temperature range is 76 to 78 degrees F., for it comes from Madagascar—a hot country.

Providing food for this fish is simple for it will take dried food readily but live food of some sort should be

given regularly. Once every one or two weeks will do, and the easily prepared brine shrimps are excellent for them.

Breeding these fishes is not difficult provided that you supply a separate tank. Plenty of surface plants, or bottom plants that spread along the surface in bunches should be used, and a water depth of about 8-9 inches.

Normally the parents can be left with the eggs and babies, but occasionally this is dangerous. The baby fish are of a size that can take newly hatched brine shrimps so bringing them up is easy.



FOOD AND FEEDING

By D. Phillipmore and G. Goodall

ALL THE PEDIGREE and breeding will be of little value to you if you do not feed your Guppies in a proper manner; feeding is of prime importance and will make a great difference in winning a class and losing it. Often we have heard: "I got a pair of fish from so and so and the results are a load of rubbish!" The answer is, did you feed them as well as so and so did? This article will give you some insight on how to feed your guppies and other tropicals.

As with everything else to do with guppies, cleanliness in feeding is most important; always be absolutely sure that your hands are clean and free from smells such as petrol, paraffin, soap. Any of these things in your water will result in a tank full of dead fish; see that any feeding devices such as, feeding rings or brine shrimp spoons, are kept scrupulously clean. We desire to have our tanks always fresh and clean, so do not use foods that will cloud the water.

Foods can be divided into three categories: live, dried, and prepared foods. Whichever one we feed we must only give a little at a time. If the fish eat this then we must give them more. We spend about an hour feeding our fish and this is to make sure that they get enough. The amount of food needed varies with the temperature so no hard and fast rule can be laid down. To grow guppies properly they must be fed whenever they will accept food, four times each day being about the minimum.

LIVE FOODS

By far the best all round food is Brine Shrimp. It is very high in protein which is a must for growing big guppies. They will take it from the day they are born and there is no fear that any disease will be introduced into the tanks. The easiest way to hatch it is to put three teaspoonfuls of sea salt to a pint of water with up to a teaspoonful of eggs. Aeration at a rate enough to swirl the eggs around the 4 in. by 4 in. show jar in a temperature of 78°F. will allow you to syphon off some shrimp in 24 hours, but a much bigger hatch will be found after 48 hours. The first born shrimp will have doubled their size by then. The jar should be left to stand for about 10 minutes and it will then be solid red up the jar for about two inches with the hatched nauplii. San-Francisco eggs can usually be

relied to hatch in this time. Utah eggs very often take three or more days. The sea salt can be re-used for three hatches and then it will have to be renewed. Method of syphoning off: aeration tube into a handkerchief over another jar.

TUBIFEX WORMS

THIS FOOD IS ALSO VERY HIGH IN PROTEIN but it has grave drawbacks. Owing to the environment that this worm lives in, it is extremely doubtful if it can be cleaned enough to make it safe. One of us fed tubifex for ten years without any trouble at all; then, after not feeding it for two years, he tried it again and lost four tanks of specimen fish. We have both vowed never to feed it again.

Daphnia

This is also a food that can transmit disease, mainly in the form of fungi, but not as badly as tubifex. We don't think that it is worth the risk as the food value is very small and a lot of it has to be fed to give the same food value as dried food. It can be used once a month as a laxative the chitinous matter acting as roughage.

White Worm

This is a food that is worth cultivating. It has a good protein content but is a little high in fat. If this is fed twice a week your guppies will benefit. The secret of the breeding lies in the fact that it must be kept cold and very damp and well-fed. This should be fed to your guppies after they reach the age of about two months.

Grindal Worm

This is the smaller cousin of the white worm and lends itself to the same method of breeding and feeding.

Micro-Worm

This worm is, perhaps, a bit easier to cultivate than the other two. Introduced into a culture of porridge it soon multiplies; the only drawback is that it has to be kept in a warm room and this can be a very smelly business. This food is wasted on guppies more than a few weeks old.

Garden Worms

If this worm is stripped of its thick outer skin and the flesh mashed up it is as high as tubifex in protein with none of the drawbacks.

Infusoria

We like to have some infusoria in the fry tank so that the new born fishes have something to eat all the time. Fry will eat newly hatched brine shrimp as soon as they are born, but it is not always possible to have live shrimp present.

These minute organisms can readily breed in shallow trays or glass jars using crushed lettuce leaves or banana skins as a medium and allowed to stand covered with tank water. After a few days in a sunny position, such as a window-sill, you should then have plenty of infusoria to feed the fry.

However, there are proprietary brands available in tubes that suit the purpose and will give a culture with far less trouble, but it must be remembered that infusoria is not instant, a few drops of the preparation should be dropped in the gravid females' tank a day or two before you expect the female to drop her young.

Dry Foods

Any of the popular brands of flake food are very good as a basic diet; it does no harm to vary the brands as fishes soon become accustomed to one food and then it is most difficult to introduce another. A cheap dried food can be made from using some of the high protein dried baby foods of the beef or bone and vegetable type mixed with one of the high protein baby foods; this gives us a good food for about 3s. per pound. Other good home made dry foods are crushed cereals such as Shredded Wheat or special K types. Too much dry food makes for dirty tanks, but with careful use of the syphon tube and the filter cleaned meticulously every week, this danger can be alleviated.

Prepared Foods

These foods we can make ourselves. Best of all is beef heart. Buy half a pound, remove all the fat and sinews so you just have the flesh left. This is then put in a liquidizer with enough water so that when liquidized you have a nice thick paste. Put it in the freeze box of a fridge and when needed scrape off enough to feed your fishes. Melt it and you have one of the best foods that we know. Variations of this can be made by substituting boiled fish or any other meat for the beef heart.

Beef heart, liver, boiled fish, whole prawns, sausage meat, etc., any of these on their own or mixed together, liquidized, with enough Special K to make a stiff paste can be stuck on the inside of the aquarium glass and removed when the fishes have eaten their fill.

An easy formula for dry food can be made up by using $\frac{1}{2}$ lb. beef heart, one small carrot, teaspoonful of ground spinach, and any other scraps of meat, such as

ham, chicken, etc. Mash the whole lot, mix with water to make a stiff dough, bake in the oven for a couple of hours until the mixture goes hard, then break down with a grinder or hammer, to the size required. This food will keep for quite some time.

The above will give you some idea of the great variety of foods that can be fed, so let no one say they cannot afford to feed their guppies properly.

We must aim for a balanced diet; that is between 50 and 60 per cent protein, 30 to 40 per cent carbohydrate and about 5 per cent fat, this does not mean that all foods must contain this exact breakdown, but that the mean average over a number of feeds should amount to approximately this pattern, so if you feed a very high protein food one feed then you can feed a high carbohydrate food the next. Even fairly fatty foods such as white worms can be fed if this is remembered; it is a wise fishkeeper that checks the contents of a box of food before he buys it and if a complete breakdown of the contents are not given, find out what they are before using it.

It is most important to feed a gravid female a high protein diet. Plenty of brine shrimp and beef heart, then she will normally leave her young unmolested. Albinoes and Golds are an exception to this and adequate cover must be provided or better still, put the female in a wide meshed net a day before she is due to drop so that the youngsters can swim out into safety. The young should be fed as often as possible. Any foods eaten will be fully digested in two hours, so every two hours is the best time to feed them. The first few weeks of care will make a big strong adult fish.

Live food contains much water, as much as 90 per cent in *Daphnia* so remember you must feed about four times the amount of this as dried food.

Colour feeding

If you must use colour food use it carefully and sparingly. It should not be necessary. If you have given your charges the correct care and attention they will be colourful enough. There are some excellent foods of this type on the market and they are also good for building up big bodies but should be fed not more than once every week. Guppies that have been well-fed sometimes go through a period of a few days when no food offered will be taken with the usual voracity. If this worries you, try adding a little aniseed to the food, but never fear, healthy fish will not starve and when the phase is over they will feed again with renewed energy. At all times Guppies will eat brine shrimp, so a feeding of these will tide them over until their appetite returns.

Guppies cannot be overfed, they will eat until they are full and then stop, but you can overfeed the tank. Make sure that you do not put in so much more food than is necessary that the tank is polluted unless your aquaria is heavily adorned with snails that will do the vacuum cleaning for you.

TRANQUILISED TROPICALS

By Othmar Baeriswyl

IN SPITE OF THE ENTHUSIASM with which we pursue our hobby and the affection we feel for our handsome charges to whom we gladly devote a great deal of our time, the necessity of catching fish, for example, in a tank which is 6½ ft. long and contains 110 gal. of water is not, we think, exactly the most pleasurable task involved in our hobby. This is especially true if our underwater scenery of dense vegetation, roots and stones provides its inhabitants with innumerable hiding places. Fishing is still more tedious if our quarry turns out to be more than a match for us: animals which move at lightning speed and which are indefatigable swimmers which, with a nonchalant movement of the tail, can travel from one end of the tank to the other in a second, catfish which usually stay close to the bottom and are excellently camouflaged, and loaches which swiftly burrow into the sand, can make fish-catching a very difficult business indeed. The fish which know best how to make fun of us are those which swim forwards and in reverse with equal dexterity.

Sucking loaches are sometimes troublesome: One evening we discovered the dreaded triangular marks left by them on the *Symphysodon discus*. Apparently, my Siamese Suckerfish (*Gyrinocheilus aymonieri*) had begun to develop the same nasty habit which had earned them the disapproval of many an aquarist and led in several instances to their being banished for life, that is the habit of attaching themselves for a time to other fish, showing a preference for those which offer an expansive surface such as Discus and Angelfish. The victims sometimes panic and may hurt themselves. We could, of course, not tolerate this and so we set to work, not with a great deal of enthusiasm. After an hour we had caught two of the offenders, while the other two were still enjoying their freedom. In the meantime the beauty of our tank had been in no way enhanced: *Cryptocoryne* leaves were floating on the surface and the Suckerfish no longer needed to hide for the water in the tank was now quite murky. With empty nets in our hands we stood contemplating the devastation and "sweet thoughts came to our mind", as a poet once said; we pictured these creatures dangling from

the tip of an arrow, a spear or a harpoon; from there our thoughts turned to dynamite, as illegally but successfully used by Greek fishermen, and then further to sedative injections with darts as favoured by Grzimek with zebras and rhinos in the Serengeti. From sedative injections our thoughts strayed to some more forms of violence until we hit on the more elegant idea of a hypnotic. A hypnotic for fish? Rather far-fetched? Perhaps not. A professor once wrote an article about fish under anaesthesia for an aquarist's magazine. Had to do with trout or something of that kind. Not a bad idea. It might work with aquarium fish too.

Meanwhile one of the offenders had been kind enough to get itself caught in a net. To catch the last one we had to lower the water level still further to about 4 inches and make a clearing on one side of the tank, where there were mainly fast-growing plants such as *Vallisneria* and *Echinodorus*. Only then could we complete the operation. We could, of course, have emptied the tank from the start and in the circumstances, as it turned out, this would have been the best solution, but who would relish such a task when the tank in question contains 110 gal. of water?

We found the product which the professor had mentioned: MS-222 SANDOZ, anaesthetic and tranquilizer for fish, frogs and other cold-blooded organisms. We have since carried out numerous experiments and should like to mention a few examples in order to demonstrate how the aquarist can make use of MS-222 SANDOZ.

There is a 30 gal. tank planted with *Cryptocorynes* and inhabited by various loaches of the genus *Botia* in company with four Bala Sharks, four Kuhli Loaches, three spotted Spiny Eels and a dozen *Rasbora borapetensis*. A nice tank with Asiatic species only. However, we discover that the *Botia horae* are making a hearty meal of the *Cryptocoryne ciliata*. This surprises us because we feed regularly with green flakes and cooked green peas. There is only one course left open to us: the fish will have to come out, together with an injured Spiny Eel (*Mastocembelus maculatus*) which had become tightly wedged in the

hole of a flower-pot and badly damaged its back and which was to spend 24 hours in a therapeutic bath following its ordeal. In addition, a particularly aggressive Banded Loach had to go into solitary confinement. So, with sleeves rolled up, we set to work, thinking that the operation would not take long. What happened? After rummaging in the tank for half an hour all the hiding places of the Botias lay in ruins, half the plants were fit only for rabbit food and the Bala Sharks (*Balantiocheilus melanopterus*), which have become quite hysterical, were doing vertical take-offs like moon-rockets in an attempt to escape from the tank. We finally captured the six *Botia horae* and, after frenzied efforts, the Spiny Eel too, but the Loach had buried itself in the sand with only its pointed snout showing. We finally caught him too, but only with some luck.

Here is another example: In a 90 gal. tank live 14 magnificent *Symphysodon discus*. You dream of one day rearing their young. One pair has already spawned several times but you are in despair because all attempts so far to capture the two fishes have failed. As soon as the net appears the whole company scatters and you are obliged to wait, perhaps several days, before you recognise the couple again. You make a renewed attempt and take four or five fishes out, fairly confident that the future parents are among them. However, later in the bridal chamber nothing is doing and so you return the fish to the main tank and to your surprise, after no time at all, courting begins again in earnest. Once more you climb up on the stool to reach the nearly 30 in. high tank which also stands 3 ft. above the ground. Impressive, no doubt, but hellishly impractical if you have to go fishing in there often. Your perseverance is worthy of admiration and you will certainly succeed in time, but a lot depends on luck and this is not necessary.

Yet another example: Let us suppose that you have a big community tank which is obviously overcrowded with a motley collection of fish from all over the world. There are two dozen different characins and of each species a couple, and two Cardinal Tetras which you hope, with childlike optimism, will produce young one day, then various species of barbs including a small group of Tiger Barbs, and then a mixture of Platies, Swordtails, Guppies, Angelfish, a couple of Siamese Fighters, several Corydoras and Loaches, an Archerfish, a lone *Symphysodon discus*, and to top it all off a pair of Mouthbreeders with their family. The Discus—if he ventures to stir at all—moves only with closed fins from one place to another and no matter where he goes he always encounters one or the other insolent ruffians who show no respect for his aristocratic bearing. Nevertheless, the initial joy you experienced at the sight of this colourful chaos is beginning to

fade and you feel you would like to introduce some semblance of order. The problem is—how to proceed to get the redundant ones out? Do you really want to empty the tank now, just when everything is functioning more or less satisfactorily, when the aquarium is "run in" and you have just got rid of the algae which have given you so much trouble ever since you started? No, you don't. You can proceed quickly and without great effort, and without emptying the tank.

MS-222 SANDOZ comes to your aid. MS-222 SANDOZ is a tranquilizer, a white powder that dissolves quickly in water forming a clear colourless solution with a slightly acid reaction. It is harmless and without effect on humans. Its application in the aquarium is very simple. The only thing that you must be more or less sure about is the amount of water in your tank. For a tank containing 30 gal., such as the one mentioned above, the procedure would be as follows: drain off 15 gal. of water, dissolve 2 grams of MS-222 SANDOZ in a pint of water, pour the solution into the tank and then wait 5 minutes. The fish can then be removed from the tank quickly and without any bother. If you are able to handle the net reasonably efficiently you will have the six *Botia horae*, the Spiny Eel and the Banded Loach out of the tank within five to ten minutes at the most. The whole operation is child's play compared with the other attempt without MS-222 SANDOZ. No chasing, no devastation of plants and no damage to the landscape, and less straining of nerves on both sides. The tank is then filled up again and in this way the tranquilizer is diluted 100 per cent. In a few minutes everything is back to normal. The fish even start eating again straight away. Some MS-222 still remains in the tank but its concentration is so low (1:60 000 to 1: 70 000) as a result of the changing of the water that its effect is virtually nil. We need, therefore, think no more about it.

As a general rule I would recommend: 1 gram MS-222 SANDOZ for between 6.5-7.5 gal. of water which would give a concentration varying between 1:35 000 and 1:30 000. We thus obtain a weak, harmless solution which, in our experience, is well tolerated by all fish (even in repeated doses; for instance, three times per week), from the smallest young Neon weighing 0.1 gram to a Discus or Piranha a thousand times heavier or approximately 100 grams.

How do the fish react? If a weak concentration is used (as recommended above) the fish become drowsy, they swim less and more slowly. Their efforts if any, to escape the net are very half-hearted. They are also much less aggressive and some of them come up to the surface or even become completely docile. This in itself makes the experiment worthwhile

and is for us a constant source of amusement. If you ever feel that you would like to pet your fish, then here is an opportunity. . . . In other respects their behaviour, for instance breathing and balance, are by and large normal. All spontaneous movements in the aquarium are reduced approximately by 40 per cent.

I should now like to answer a few questions which are perhaps of interest to a number of aquarists: hardness of water, pH value, oxygen content and water temperature are of no consequence when MS-222 SANDOZ is used in the aquarium and may thus be disregarded. A marked reduction in the pH value occurs only if high, potentially dangerous concentrations are used and only then if the water is already acid (for example if a concentration of 1:15 000 to 1:20 000 is used a pH value of 6.5 is lowered to 6). If a concentration higher than 1:30 000 is used marked changes occur in the frequency and depth of breathing movements.¹ Disturbances of balance may also be noted. Heavy overdosage is fatal, the fish die more or less immediately. The remedy consists in a quick addition of fresh water. If an accident of this kind should happen, then all is not lost—far from it—as long as you keep your head. We have known fish to revive after we had given up all hope for them. On occasion, fish which we believed were dead because they showed no sign of life even under the magnifying glass, and had almost reached the point of no return—the W.C.-pan—suddenly changed their minds and said "Hey, wait a minute!" and started to wriggle again.

MS-222 SANDOZ has been referred to in the literature as Tricaine SANDOZ, Metacaine or Methacaine methanesulphonate. It does not produce exactly the same effect in all fish of the same species and size. Differences in behaviour are therefore to be expected, depending on the individual. And let us repeat that half the amount of water in the tank must always be changed, so that the necessary dilution takes place after the product has been used.

There is yet another use to which MS-222 SANDOZ

can be put: From time to time you may have to destroy a fish. You need no longer hurl it to the ground to do this nor cut through its spinal cord; both methods are effective but do not suit everybody. MS-222 SANDOZ induces a deep sleep from which the fish never wakes up. This is a humane method which spares the nerves of the sensitive aquarist. What can you do if an Angelfish or a Discus, which you have taken care of for so many years and which has become very tame and friendly, becomes incurably ill and must be destroyed? Will you throw it on the concrete floor or half cut its head off with a pair of scissors? If the animal in question were your dog you would not put him to death like that either, would you? No. The vet would give him an injection and he would fall asleep peacefully. Well, we do the same with our fish. To be on the safe side we put 1 gram of MS-222 SANDOZ to two pints of water and leave the fish in the solution for one hour. (We found that warm water enhances the efficacy of the product). In case of Characins and Barbs for instance 1/10 or 1/20 gram in one pint of water is usually sufficient.

MS-222 SANDOZ is available in Great Britain from Sandoz Products Ltd., London in 1 gram packs; minimum order is 10 grams.

Perhaps you too will choose this method the next time you have to go on a fishing expedition in your aquarium. It is simple, and kind to your nerves. After the first attempt you will breathe a sigh of relief and thankfully replace the aquarium cover, happy that everything went so quickly and smoothly. The use of MS-222 SANDOZ should become as much a matter of course for the aquarist as the treatment of Ick with drops or tablets. Fish are much better swimmers than we are—the water is their element. So let us do something to shift the balance of power in our favour. We shall then be able to derive even more enjoyment from our hobby.

1 In higher concentrations MS-222 SANDOZ is used for transport purposes.

2 Sandoz Products Ltd., Sandoz/Wander Fine Chemicals Dept., Sandoz House, 23, Great Castle Street, London, W.1.

BOOK REVIEW THE PICTORIAL ENCYCLOPEDIA OF INSECTS

By V. J. Stanek. Published by Paul Hamlyn at 30/-.

This is a densely illustrated book, every page comprised of up to four photographs—both monochrome and colour—depicting insects of the world. The author (who is also responsible for all the remarkable photographs) makes no excuse for devoting the first two dozen pages of this 540-page book to scorpions, millipedes and spiders for, as he says, the entomologist

visiting tropical climes will encounter these creatures (none of which are insects) before all others and it's as well to have a nodding acquaintance with them.

Although the information given for each illustrated species may be less than the enquirer seeks, the volume constitutes a very useful reference book and is of great assistance in the identification of species

British Freshwater Fishes

THE PIKE (*Esox lucius*)

By A. Boarder

THE PIKE IS ONE of the most outstanding fishes of the British Isles. No one should have any difficulty in recognising this fish as it is shaped quite differently to any other of our fishes. The long, but stout body is more like that of the Salmon, but the distinguishing feature is the dorsal fin which is placed so far back and is actually in the usual position of the adipose fin of the Salmon family. The normal dorsal fin near the centre of the back is missing and this fin is not only so

very green but change to a darker shade as they mature. The Pike is found in most waters of Northern Europe and Asia, and is found in North America. It is also said to be found in brackish waters of the Baltic sea. Its food consists mainly of fishes and it is possible for a Pike to take a fish almost as big as itself. It is also known for one to eat young ducklings and other water birds. The strong teeth of this fish enable it to hold its prey with little difficulty and most fishes



far back but is rounded more like an adipose fin than the usual dorsal. The snout is very pronounced and fierce jaws proclaim that this fish is a cannibal type of monster.

The colour is a greenish base but paler towards the belly. Many paler spots cover the sides and the fins are reddish with dark markings. Young Pike are

are taken head first. The fish is mainly a solitary one when adult and is not inclined to shoal. Even when very young, once the yolk sac has been absorbed, the fry swim out in search of food away from the shoal where they hatched.

The Pike spawn in the early part of the year, sometimes in February, and it appears that the younger

ones spawn first. Two or more males may accompany the female fish when spawning takes place. The eggs are laid in shallow water often among reeds and grasses in flooded areas. The eggs do not seem to be very adhesive, as they soon float near the bottom whilst incubating. The hatching time is from two to three weeks. After the young have used up the yolk sac they search for minute water creatures such as infusoria and the young of *Daphnia* and larvae of insects. At all times it appears that the fish will take only moving food and it lies in wait in a certain section of the water, usually among reeds where its protective coloration is a good disguise. It does not usually stalk its prey but prefers to lie in wait and rush at the fish suddenly. If this first rush fails to capture the prey it does not pursue it but returns to its spot to await another fish.

If one walks quietly beside waters where the Pike is known to live, one may see the fish rush away from the side with a swift swirl of its tail, leaving a patch of muddy water from where it swam. The Pike is such a ferocious fish that it is not surprising that many stories of its fierceness have been recorded. Tales have been told of Pike which have seized a fish as large as itself and have taken two or three days to devour it. The weights of many of the Pike taken

also vary but it seems to be perfectly true that fish of over forty pounds have often been caught. The record fish taken by rod and line in this country is 47 lb. 13 oz. One of 53 lb. was caught in Ireland and several others over 40 lb. have been caught there. The head of a Pike said to have weighed 72 lb. is preserved as a skeleton in Scotland, but any angler who took one of over 30 lb. would consider it worthy of setting up.

As with other fishes, the largest ones found are usually in the biggest lakes or reservoirs. Also the condition of the fish when caught can have a very great effect on its weight. I remember my father catching a Pike in Tring reservoirs many years ago, which weighed 18½ lb. This fish was 42 inches long and had it been in better condition could have topped 24 lb.

Small Pike make excellent occupants for a large tank, and can be fed on small fishes and garden worms. They are among the most attractive fishes of Great Britain but, of course, with sufficient food they will soon out-grow their tank. The angler for Pike may use live bait, such as small Roach or Dace, or spin with a dead fish. Spinning is also done with artificial Minnows or other fishes.

MARINE QUERIES By Graham Cox

What types of fishes may be kept in community with anemones?

Provided that the newly introduced fishes are placed into the aquarium in subdued light and not released from their polythene bag until they are swimming normally and have recovered from transit shock, ANY coral fishes may be successfully kept with an anemone in a tank of suitable size. The only exception I would make in this regard is the Philippino Vestlet Anemone (often shipped out of the Philippines and sold under the erroneous name of Giant Tube Worm). These animals have tentacles of enormous length and the stinging cells' "nematocysts," contain a poison of unequalled virulence. These anemones become very active in the evening when the fishes are "sleeping" and owing to the great length and activity of the tentacles, are often able to trap and poison unsuspecting fishes; however, the much more commonly imported *Stoicactus* and *Discosoma* species will only catch and devour senile or diseased fishes.

It will not be necessary to tell more experienced aquarists that one of the most attractive marine aquaria for establishment on a limited budget is one which contains simply a pair of clowns and an anemone.

I have successfully kept a butterfly fish in my aquarium and now wish to attempt the keeping of live corals. Can you give me advise on the feeding and culture of the latter.

Your query is a difficult one, because having spent a lot of time observing coral fishes in the wild state, I can promise you that the favourite item of diet of these lovely reef fishes is living coral. All *Chaetodontoidae* species and perhaps the *Chaetodons* more than any, seem to spend all their waking hours when not courting or fighting, incessantly engaged in eating coral polyps. In view, therefore, of the high cost of living coral in Europe I would strongly recommend that you establish another, purely invertebrate aquarium. One could only justify the feeding of live coral to a Butterfly fish if it were a rare species which does not normally accept aquarium foods, such as *C.trifasciatus*, *megaprotodon* species, *C.larvatus*, etc.

With regard to the feeding of live corals, we have achieved this very successfully by pipetting a small cloud of the green *Liquifry* immediately above the polyps once per day, preferably in the early evening. If the filtration is highly efficient it should be switched off for some 15-20 minutes after the *Liquifry* has been added.

RESULTS of the "Aquarist and Pondkeeper"

FISHKEEPING EXHIBITION

held at Alexandra Palace, London, July 10th to 12th, 1970.

Class AA Society Furnished Aquaria (Tropical)

| | Pts. |
|---|------|
| 1st Tottenham Aquatic Society | 78 |
| 2nd Walthamstow Aquatic Society | 77 |
| 3rd Fancy Guppy Association | 76 |
| 4th Independent Aquatic Society | 75 |

Class AB Society Furnished Aquaria (Coldwater)

| | |
|---|----|
| 1st Walthamstow Aquatic Society | 80 |
| 2nd Portsmouth Aquatic Society | 70 |
| 3rd Bracknell Aquatic Society | 69 |

Class AD Individual Furnished Aquaria (Tropical)

| | Pts. |
|--------------------------------------|------|
| 1st R. Forder, Uxbridge A.S. | 78 |
| 2nd J. Reily, Tottenham A.S. | 76 |
| 3rd P. Cairn, Riverside A.S. | 75 |
| 4th M. Goss, Riverside A.S. | 73 |

Class AE Individual Furnished Aquaria (Coldwater)

| | Pts. |
|---|------|
| 1st D. Nutt, Tottenham A.S. | 77 |
| 2nd D. Nutt, Tottenham A.S. | 75 |
| 3rd T. W. Tiffany, Tottenham A.S. | 69 |
| 4th F. Stone, Hampstead A.S. | 76 |

Class AF Marine Aquaria Individual

| | Pts. |
|--|------|
| 1st S. G. Mooney, Tottenham A.S. | 72 |
| 2nd S. G. Mooney, Tottenham A.S. | 69 |
| 3rd P. J. Golding | 66 |

Class AG Junior Furnished Aquaria

| | Pts. |
|--------------------------------------|------|
| 1st Miss M. Smith, Tottenham | 74 |
| 2nd S. Gosling, Enfield | 72 |
| 3rd S. Millross, Tottenham | 65 |

Class AL Society Furnished Aquaria Junior

| | Pts. |
|----------------------------------|------|
| 1st Walthamstow A.S. | 71 |
| 2nd Hemel Hempstead A.S. | 70 |
| 3rd Tottenham A.S. | 69 |
| 4th Hornsey A.S. | 68 |

Class AO School Furnished Aquaria

| | Pts. |
|---|------|
| 1st Our Lady of Muswell Primary School | 75 |
| 2nd Downhills Secondary Modern School | 73 |
| 3rd Warwick Junior High School for Boys | 66 |
| 4th The Grammar School, East Barnet | 65 |

Class NC Pairs of Characins

| | Pts. |
|------------------------------|------|
| 1st A. Kinsey | 75 |
| 2nd S. G. Mooney | 73½ |
| 3rd Mrs. J. E. Stott | 72½ |
| 4th S. G. Mooney | 72 |

Class ND Pairs of Cichlids

| | Pts. |
|---|------|
| 1st G. Greenhalf | 75½ |
| 2nd Madame Grace Wong (Singapore) | 71 |
| 3rd Madame Grace Wong (Singapore) | 70 |
| 4th Madame Grace Wong (Singapore) | 64½ |

Class NK Pairs of Danios & White Cloud Minnows

| | Pts. |
|----------------------------------|------|
| 1st Mr. & Mrs. P. Abbott | 78 |
| 2nd G. Greenhalf | 76½ |
| 3rd A. D. Phillips | 75 |
| 4th Mr. & Mrs. P. Abbott | 74 |

Class NOP Pairs of Guppies

| | Pts. |
|--------------------------|------|
| 1st L. Weller | 81 |
| 2nd L. Weller | 79 |
| 3rd H. Guneratne | 77 |
| 4th E. Smith | 76½ |

Class NQ RS Pairs of Platys—Mollies—Swordtails

| | Pts. |
|------------------------|------|
| 1st R. Smith | 75 |
| 2nd R. Trippas | 73½ |
| 3rd M. Waters | 73 |
| 4th R. Smith | 72½ |

Class NT Pairs of A.O.S. Livebearers

| | Pts. |
|--------------------------|------|
| 1st G. Greenhalf | 75 |
| 2nd G. Greenhalf | 74 |
| 3rd R. Smith | 73½ |
| 4th S. Mooney | 73 |

Class ZA A.U. Rooted Plant

| | Pts. |
|-----------------------------|------|
| 1st F. J. H. Morgan | 90 |
| 2nd R. Forder | 87 |
| 3rd M. J. Allen | 86 |
| 4th R. Trippas | 83 |

Class ZB A.V. Plant Cuttings

| | Pts. |
|---|------|
| 1st M. J. Allen | 90 |
| 2nd M. J. Allen | 83 |
| 3rd E. G. Leadley | 82 |
| 4th Madame Grace Wong (Singapore) | 81 |

A full report and pictures will appear in our next issue.

WHAT IS YOUR OPINION?

By B. Whiteside



THE MONTH OF MAY finds me back at my typewriter again, after six months when I had to submit my articles in longhand, due to my hand injury. I'm only using one finger of the injured hand, but it is making slow progress and I am looking forward to adding more fingers as it progresses. My thanks again to all those who wrote to wish me a speedy recovery. It's great to be able to type, drive and play the piano again, and I look forward to being able to add swimming to my list again, soon.

Mr. F. Wootton, of Rainham, Essex, finds this feature to be the most instructive and informative in *The Aquarist*, and he always turns to it first. His favourite cichlid is the Oscar, and he finds it the most relaxing fish to watch, with its graceful movements and peaceful nature. He also finds them to be intelligent. He has five of them and when he comes near his tank, the Oscars follow him from one end to the other. When he is giving his tank its weekly cleaning, these fish come to investigate, unlike the other cichlids which are shy. He finds Oscars to be delightful fish.

Regarding combined heaters and thermostats, Mr. Wootton thinks that they are not too popular because the fact that the heater is so close to the thermostat means that an accurate temperature control is not obtained. (I have just received a new combined heater/thermostat, made by Inter-Pet, for review in *The Aquarist*, and I hope to make some comments on this popular belief, in my review). Mr. Wootton's favourite thermostat is an outside one. He does not earth his aquarium as he does not consider it necessary. He thinks that the only danger to the tank's inhabitants would be if the water were to seep through the rubber cork, to the element of the heater, but he thinks this to be a remote possibility.

Surbiton, Surrey, is the home of Mr. T. Straight, and he's another Oscar fan. He has had one since he started his aquarium interests 2½ years ago. Most of his fish are known by their Latin names—except for his Oscar. It is not just a fish in a tank, it is a pet. His present one-year-old fish is 6 in. long, and has only one pelvic fin. When Mr. Straight comes home, he always finds Oscar at the water surface, waiting to be fed. At night he often hears the fish jumping for

food stuck on the lower side of the aquarium cover. The fish feeds from his hand, although he often gets a nip in the process. When Mr. Straight is rearranging rocks in his tank, Oscar always comes very close, and usually has to be pushed away. He feels that there is an understanding between himself and the fish and he will never part with it—despite the nips, the fish which Oscar has swallowed, and the large amount of food which he consumes. Oscar has character, not found in other fish.

“My experiences of keeping *Vallisneria spiralis* have been happy ones,” says Mr. V. Barker, of Stannington, Sheffield. Initially he grew the plant in a 24 in. by 10 in. by 8 in. community tank, the population of which varied between over-populated and almost empty. The Vallis. grew well, and required frequent thinning. Recently Mr. Barker set up a 42 in. by 18 in. by 12 in. tank, for Discus, the temperature being 82°F, the p.H. 7.1, and D.H. 4-5°. The tank had an under-gravel filter, and the Vallis., when planted, was very bedraggled. Soon the leaves broke off, or rotted away. The tank was left without fish, but with lighting and filtration, for two weeks. The plants grew steadily and now, six weeks later, the plants are doing very well, with many new runners and plants being formed. Lighting is from Grolux and tungsten bulbs. Two *Ambulia* plants, which were very bushy when planted, have wasted badly.

Mr. Barker does not use combined heater/thermostats, because of the waste in replacing the whole unit, should one part fail. He thinks that it is easier to set up suitable combinations, as required. He uses an outside thermostat for each tank, as his dealer thinks that these are more economical in the long run. His favourite fish are Discus. His four blue Heckels attract the interest of all his non-fishkeeping friends. Regarding human baby food, used for the feeding of baby fish, Mr. Barker has kept a community tank fed entirely on “Farlene,” for six months. During this time baby guppies grew up and produced their own young, and young tiger barbs, black widows and zebra danios grew to maturity. A pair of angels grew so large that they had to be given away, to a friend, and they later spawned. The tank was filtered with a submerged corner filter, the fish were not overfed,

and about a quarter of the tank's water was changed at intervals. A friend of Mr. Barker's tried the same food, but his community tank became very foul overnight, and killed off most of his fish.

* * *

Our next letter comes from Mr. R. C. Mills, of Perivale, Middlesex. His favourite filters are the two in the 'Hykro' range. He finds, that with a good air pump, they give a rapid water turnover. He obtains his aquarium rocks from the Cornish coast, and from N. Wales. He also likes wood as an aquarium decoration. Tree wood is used in furnished aquaria, the branches being inverted to give the impression of submerged roots. The wood must be dead, and dry right through before use. Mr. Mills used a piece of recently pruned privet hedge in *The Aquarist* show, last year, and obtained the cloudiest tank in the shortest time. He has found that the wood does not need sealing, providing that it has been dead long enough, and that it has been given a good soaking. Regarding the breeding of angels, Mr. Mills suggests that readers refer to his article: "Angel Antics," in the August '69 *Aquarist*.

Mr. Mills has often used greenhouse tanks for raising livebearers, danios, etc., and plants, during the summer months, and he has an old sink of *Vallisneria* which lasts the whole year round—ice and all! He finds that the unheated greenhouse tanks soon go bright green, but the fish seem to thrive in them, and the algae is a good first food for the egg-layers. After the plants are moved indoors to a heated tank, he finds that their growth is very vigorous. For baby fish, he used the normal foods—"Biol," "Miracle," "Tetramin," "Liquifry," all with success, and he has also used "Farex," "Fariene" and "Bemax." Ground-up rabbit or trout pellets also make good foods for baby fish. Mr. Mills thinks that air-operated aquarium cleaners stand or fall on the gauge of the material from which their bags are composed. He finds the first vacuum around to be the best, with a gradual dropping off in performance—indicating that the bag is becoming clogged, or that the water is causing the material to swell, altering the mesh of the material. He now uses old nylon stockings but, if the mesh is too fine, they soon clog up, and if too wide, the mulm escapes. He states that the delivery tube should be kept above water level, to avoid back siphoning when the air is cut off, and finds that better operation is obtained if this tube is kept as high as possible. He informs us that this point is made, along with other uses of air in the aquarium, in an excellent chapter in "Electricity in the Aquarium," by E. Warburton—a very good book on a normally ignored aquatic subject, he thinks.

* * *

Mr. P. Brown, of Wellington, Salop, has been able to grow *Vallis* very well in water with a p.H. 7.4 and

D.H. 4°. He does not use any under-gravel medium; he found that peat made no difference. Recently, however, he has lost quite a number of his plants. All the plants in two of his tanks were starting their summer growth, and sending out new runners. Within a week, all the parent plants were dead. The new plants are still all right, and sending out new runners, but of the parents, only a small, brown stump, and a few roots, are left. He thinks that some disease may be the cause but does not know why the runners were not affected. All the other plants in the tank are doing well, and only last year's *Vallis* are diseased. Mr. Brown would like to know if any other readers have had similar experiences, or if they can shed any light on his problem. He finds his combined heater/stat. very useful for many purposes, and would not be without it. He has only one, the reason being the cost. He also thinks it a disadvantage that the heater and stat. cannot be put at opposite ends of the tank, and that the range of wattages in the combination are limited.

None of Mr. Brown's tanks are earthed because no one seems to know whether or not they should be earthed. If an appliance has an earth, when bought, he uses it; if not he omits adding one. Mr. Brown cannot say what his favourite cichlid is as he likes so many. At present he has angels, white convicts, Kribensis, Mozambique mouth-breeders, Oscars, firemouths—and a couple of others, the names of which he cannot remember. He thinks that cichlids have some sort of personality, and if he sees a cichlid which he likes, he will buy it and set up a tank for it. As we can gather, he has a large number of cichlids! Over the years he has used many commercial fry foods. The two which he likes best are "Miracle" freeze dried fry food, in the handy puffer pack—especially useful when he is away from home, and "Liquifry," which he thinks most people know, and find very good.

* * *

The home-town of Mr. J. P. Nash is Bristol and he thinks that the majority of aquarium plants will readily propagate if they receive lighting of the correct intensity and type, and if they have a suitable rooting compost. He feels that the secondary factors, although they must be considered, are variable in nature and require less attention, e.g., water depth, chemistry and temperature. Mr. Nash has a keen interest in the beautiful genus *Cryptocoryne*, and has 23 different species at the time of writing—all growing as submerged aquatics, but having been started off as young "seedlings" grown as bog plants, and transferred to the aquarium. He has found the following conditions to be most suitable:—lighting, 30 watt "GroLux" in standard reflector for a 36 in. × 15 in. × 15 in., plus 2 × 15 watt tungsten bulbs, sited at the rear of the reflector, for 16 hours daily; 4-8 in. of

lime-free gravel, layered (from the surface) 1 in. gravel, $\frac{1}{2}$ in. of 75% aquarium peat/25% clay, 2 in. gravel, $\frac{1}{2}$ in. peat/clay mixture, remainder gravel—all gravel $\frac{1}{2}$ in. grade; water depth 12 in. approx., from gravel to surface; water p.H. 6.8-7.0, D.H. 12—plus the droppings from the fish in the tank; water temperature—gravel surface 70°F, water surface 82°F—average 78°F. Also growing in the tank, along with the 80 Cryptos. are 12 *Aponogeton crispus*, 12 *A.natans*, 12 *A.undulatus* and 36 *Vallis spiralis*. The Aponos. are grown mainly to shade the Cryptos., and bloom regularly, about 20 young Apono. hybrids having been moved to other aquaria. The Vallis flower, but have not yet set viable seeds—although vegetative reproduction has occurred.

There are few algae in the tank, and a power filter operates for 12 hours per day, 25% of the water being changed every 10 days (previously every three days, until the invaluable advice of Mr. J. Hems was taken). The plants are fed regularly with clay pellets at the roots, and a weekly liquid plant fertilizer added. Like myself, Mr. Nash likes "jungle" conditions in his tanks. Mr. Nash suggests the following points for discussion in next month's W.I.Y.O.:—More space in *The Aquarist* to be devoted to plant topics, and that more photographs of furnished aquaria—such as those at Chester Zoo—be included in *The Aquarist*. What do you think?

Finally, a letter from my home land, N. Ireland. It comes from Mr. T. Mitchell, of Bangor, County Down, and I'm really pleased to have one from Ulster; it has many keen aquarists, but they seem to be lazy as regards writing to us with their opinions. What about it chaps? Mr. Mitchell uses "Liquifry" No. 1

for his egglayer babies, and No. 2 for his livebearer babies, for the first two days after birth, and his fry do very well on it, but he finds that if too much is used, it is inclined to sit on the base of the breeding trap or tank. After this he uses "Tetramin" baby food, of the appropriate grade, and he likes it but finds that it forms an oiliness on the surface of the water. He thinks that it may be due to its high fat content and wonders if other readers have met with this happening.

I was interested to receive a copy of "Toras Topics," the newsletter of the Torbay Aquarist Society. Judging by all the interesting news and articles in their newsletter, they must be a very progressive society. Knowing how much work goes into the production of a school magazine, I can appreciate that the editor of "Toras Topics," Mr. Mike Poole, must "burn the midnight oil" very often, to turn out the excellent newsletter each month. I especially liked the effective, un-cluttered cover, designed by member Mr. Noel Gray. Do many other societies produce such useful publications?

Well, that's the lot for this month. For the next issue, let's have your opinions on those problems given above, plus: (a) How do you deal with the algae problem in your tanks, if any? (b) What have been your experiences with photographing fish or aquaria? (You might care to forward some of your efforts). (c) Do you keep any extraordinary or rare fish? If so, what have been your experiences? (d) Are freeze dried foods as good as their live equivalent? (e) What would be your design for your ideal aquarium filter? (f) Do you consider charcoal to be of any great benefit in aquarium filters? (g) Have you grown any uncommon aquarium plants and, if so, with what success?

NEWS ITEM

Hounslow and West London F.G.A. shock

MEMBERS OF THE HOUNSLOW & D.A.S. Committee were shocked to learn yesterday that fire had gutted their venue, at The Youth Centre Annexe, at Clifton Road, Isleworth, which they share with the West London F.G.A. section, and other clubs and societies, who are members of Hounslow Community Association.

Hounslow and the West London F.G.A. were lucky in as much that they were able to rescue their

possessions almost undamaged by the fire. Six members of Hounslow D.A.S. toiled till midnight removing staging and tanks, this was a risky business as the building's structure is unsound and likely to collapse.

At present the societies have no knowledge of where they will be holding their meetings in future. It will probably mean several different venues during the coming months.

FROM A NATURALIST'S NOTEBOOK

By Eric Hardy

OUR WATERSIDES GROW several rare docks, like the Irish *Rumex hibernicus* at Benmullet in Mayo, and purplish-stemmed Patient Dock, *R. patientia*, near Minehead. Few are so attractive as the yellow flowers crowding the stems of golden dock, *R. maritimus*. Despite its name, this is an inland marsh plant and though recorded only in England in the standard British *Flora*, a friend recently showed me great quantities he has found in Wales flourishing and seeding freely by the sunken marshy pool below Borra's Farm, near Gresford in the Wrexham area.

This compensates for the demise of the rare, tall bog-sedge, *Carex paupercula*, discovered in 1800 at nearby Vicarage Moss. This is not only a northern plant, as states the *Pocket Guide to Wild Flowers*, for though now gone from Denbighshire it grows on Trawsfynydd moors in Merioneth. In the same old ice-hollows near Gresford, alien mink now haunt the anglers' lake called Tommy's Pool, where we found their droppings marked with fish-scales as well as mammal fur.

Flintshire is the only Welsh county for which Clapham, Tutin and Warberg's *Flora of the British Isles* records water-soldier; but it grows in two or three of these Denbighshire lakes and pools, up to the yachting lake.

Most pond-hunters are familiar with the way certain aquatic plants flourish or die down rapidly. A. and S. Petter of Ahmadu Bello University, Zaria, Nigeria, recently discovered a virus, spread by greenfly in the wet season, to cause the sudden die-back of the green floating waterweed *Pistia stratiotes* whose normally rapidly reproducing offshoots are infesting West African lakes, like that below the Kainji Dam on the River Niger. The infected weed becomes brittle and yellow. A similar die-back in *Salvinia auriculata* which infests Kariba Lake is associated with a saprophytic *Altenaria* and a parasitic *Spicariopsis*, which cause physiological degeneration; then the plants become liable to secondary fungus.

Water-gardens and water-lilies are included in Fison's new 450-page *Guide to Gardens* by Mea Allan (Leslie Frewin 25s.), a comprehensive, motorists' summary-guide to most of the big gardens open to

the public in Britain. These include the aquatic garden of marsh-plants and water-lilies at Kew, Longstock Park, near Salisbury, with its water-lilies, as well as those at Hall Place and Penshurst Place, near Tunbridge Wells, and over 3,000 of them at Burnby Hall (Harrogate).

Recently doing some fieldwork in West Wales, I visited some of the bog reserves in Cardiganshire. At the Dovey estuary I found Borth Bog full of sundews and marsh-andromeda flowering among the cotton-grass. Ivy-leaved water-crowfoot smothered the surface of its dykes. The great red bog by the Teifi at Tregaron held several clumps of royal fern, probably its best stronghold in Wales. In Cheshire, the pink water-violet (*Hottotia palustris*), which isn't a violet but is a member of the primrose family, has rapidly declined in post-war years. Though declared extinct in the Wirral peninsula it still grows near Willaston, and lingers in west Cheshire. Again this year it nearly choked a field-pond, about 50 by 60 yards, in area, between Woodford and Handforth, near Wilmslow. It is also declining in the acid, peaty mossland dykes and trenches of south-west Lancashire, from Rufford and Formby Moss to Ince Blundell and Hightown, once its stronghold.

Marine aquaria are usually more difficult to maintain than cold freshwater aquatics, and breeding in them is rare. Prawns for instance may be kept for a few weeks after a seaside holiday, but the Japanese prawn, *Penaeus japonicus*, has been cultured from its egg-stage to maturity. Prawns have long been raised commercially in captivity in Indonesia, Singapore, India, the Philippines (using *P. monodon*) and Japan. Any open rearing pools are soon invaded by predatory crabs as was the sea-loch culture of fish in Scotland in recent years, unless screened. The American freshwater shrimp, *Palaemonetes paludosus*, is more convenient.

Most of the commercial prawn-farms used to collect young wild stock to rear in tidal pools. Dr. Motosaka Fujinaga reared them from egg to maturity in 6 to 10 months at Takamatsu. His experiments started from the chance discovery of white, foam-like spawn one July morning in his prawn pools in 1933. Under his microscope their eggs were perfectly round.

They hatched in 13 to 14 hours at 25°C. His first experiment got only one egg to the post-larval stage out of masses. Until he found the mating time, between midnight and 3 a.m., and made a pounded shellfish-food for the fry, he didn't get much further.

American biologists have since reared penaeid shrimps from eggs deposited in their laboratory at the Mexican Gulf. Captured females spawn during the first or second night of captivity, so technically they did not breed them. Large amounts of phytoplankton have to be grown to feed the larval shrimps which are

1/100th to 1/5th inch long. Later brine-shrimps (*Artemia*) are used to feed them. After about 1/4 inch size, they are reared on a prepared diet of ground fish and shellfish, mixed with commercially prepared livestock food instead of fertilizing their ponds to speed up a natural growth of phytoplankton. A new 590-page illustrated bulletin on *Western Atlantic Shrimps of the Genus Penaeus*, by Isabel Farfante, Government zoologist, which the U.S. Bureau of Commercial Fisheries has just sent to me, should interest specialists in this subject.

PRODUCT REVIEWS

"TROFISH" FREEZE-DRIED TUBIFEX WORMS are marketed by Trower & Co. Ltd., Tremadoc Road, London, S.W.4.

I always like to receive a new aquarium product for reviewing, especially if it is British in origin. I received my sample of "Trofish" worms from Mr. P. J. Golding, *The Aquarist's Advertisement Manager*. As there was no trade leaflet enclosed, I do not know the retail price of the food, but the plastic container shows the weight of the contents to be 10 grams. The analysis of the food is: protein 54%, fat 2%, fibre 1%, ash 8% and moisture 4%. The food is recommended for tropical fish, goldfish and marine fish, and the worms do not make the water cloudy or slimy. The worms are compressed into cubes of about 1/4 in. x 1/4 in., and these may be fed to the fish by pressing a wad of worms on to the aquarium glass.

I found my fish to be keen on the worms—especially the larger fish—but for smaller fish I found that the worms were more acceptable if a cube was broken down into smaller pieces. This latter point is one which could be considered by a manufacturer of many kinds of food—especially freeze-dried foods and flake foods, as these would often be handier for the aquarist if they were available in several graded sizes of particles.

B.W.

"TOSCA FLAKE FOOD" is prepared by Fish-E-Quip Ltd., Shrewton Road, London, S.W.17, and retails at 4s. 6d. per drum. The weight of the contents is not stated on the container.

This is a balanced flake food which will not cloud the aquarium water. The flakes are mixed in colour, and are of a good average size for general feeding. The approximate analysis is: protein 46 per cent, carbohydrate and fibre 33 per cent, mineral 8 per cent and fats 6 per cent. My fish ate the food greedily, and it was easily crushed into a finer form for the feeding of smaller fish. I reviewed some of the other foods in this range in an earlier issue. B.W.

PHILLIPS MAXIFLAKES are a new food by the above firm. This food is for the hand feeding of larger fish, and it retails at 7s. 2d. for a large 1 1/2 oz. tin. The food also contains "Saprolegnil" to protect against fungus infection.

These flakes, of mixed colours, are the largest which I have yet seen. They are a nutritious staple food for all fish, and are as nourishing as living food. The ingredients and analysis are as for Phillips Flaked Food, and the food is fed by being held in the fingers as the fish eat it. This large sized flake food should be ideal for those who keep larger fish, but it can also be easily crushed between the finger and thumb. My middle sized tropicals were very keen on the crushed flakes but I do not have any large fish which respond to hand feeding with any food. B.W.

"JUMBO JET" SIPHON PUMP is made in Japan, and is distributed by Colley Nockolds Ltd., 126 Spa Road, London, S.E.16, price 30s. 0d.

This is an all purpose siphon pump, made from high grade polythene. It is oil, acid, alkali and cold proof, making it suitable for most liquids. It is for domestic, farm and marine use, and is useful for draining garden ponds, etc. The hose is 7 1/2 ft. long, and is made of corrugated plastic which prevents it from kinking. The hand pump, to start the siphon, has an on/off nozzle. This is set to "on" and the plastic bulb is squeezed until the liquid starts to flow. When switched to "off", the siphon action is stopped.

The "Jumbo Jet" is supplied in an attractive plastic carrying bag, with a fastener. B.W.

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OUR READERS WRITE

A Successful Move

A few months ago my carefully reared collection of assorted fish suffered a great setback—I had to empty the tanks and distribute the fish to friends because we were moving from South Wales to Germany. My parents weren't too happy at my suggestion that I could take my fish with me, but, insistence on my part eventually won them over and they agreed to my transporting tanks, etc., with the rest of the household goods. I decided to take the best fish out of the collection and this meant about a dozen fish consisting of Platies, Guppies and Swords. Out of two tanks, one of which is 24 in. × 12 in. × 12 in. and the second only 18 in. × 9 in. × 9 in., I decided to carry with me the smallest and send the bigger one with the furniture. A few days before moving I emptied the big tank and at the same time arranged for friends to collect those fish which I didn't want. The remainder I put into the little tank. This tank contained no gravel or plants now. All the gravel and rocks were placed with the big tank and the plants were carefully put into long flat bacon boxes which were partly filled with water and sealed.

A few hours before leaving our old house, I placed the fish into six polythene bags, with two or three fish to a bag, according to size. The water was taken from the tank, at a temperature of 85°F. I blew the bags up with air from the pump and then sealed the tops with rubber bands. The six bags were then placed into the tank and insulated with newspaper. The tank, heaters, pump and the bacon boxes with plants were then packed into a large carrier box, also well insulated with foam rubber and canvas.

The journey took approx. 20 hours and the polythene bags were opened only once, on the cross-Channel ferry, for a short time to let in fresh air and check temp. which was at 72°F. The outside temperature was at freezing when leaving England, and minus 10°C (it was in December) when in Germany. On arrival at the new home I quickly set up the little tank and filled it with warm tap water (heated to the temperature in the polythene bags) to the halfway mark. The temperature in the bags was now only 63°F.

Using the water from the bags as well to fill up the rest of the tank I released some pale looking but alive fish into the tank. Slowly I brought the water temperature up to 80°F again after installing the heater and thermostat. The fish recovered quickly and the next day I set up the tank properly, using the gravel and plants which I had taken with me. A week later the big tank arrived, was set up properly. The "emigrants" are now (May) still alive and happy with some new German companions.

I wonder how many other aquarists have moved house and have taken their hobby with them?

DETLEF PUNGS (age 14), 407 Rhevdt-Rhld,
Dusseldorfer Str.78, Germany.

Are Snakes Losing Their Shyness?

On a sunny afternoon not many weeks back, my husband took up his usual position on a deckchair by our small pond. When I heard a startled cry from him that there was a snake in the pond, I thought that he was dreaming or that he had indulged too freely at the "local" before lunch.

We have a lot of "Hornwort" in the pond and that looks very much like a snake's head bobbing up and down, but suddenly to my horror a snake did rear its head out of the water, it stayed up just long enough to give me a very sinister look. I feared that it was eating my goldfish as two had recently disappeared, but there was nothing we could do about it, and no means that I knew of getting it out of the pond.

I guessed it would not want to stay in the water when once the sun had gone down, and as I was not sure which way it would go, I took up a position in the kitchen. Sure enough as the warmth of the sun edged away from the pond, the snake slowly emerged. It was much fatter than I had thought and about 3 to 4 ft. long. It slithered over the whole length of the lawn to the bushes at the end, but by the time I cared to follow it had disappeared.

An official at the Zoo Aquarium assured me that it was a grass snake and quite harmless. It could have eaten my goldfish but mostly feeds on frogs and newts.

MRS. D. POPE, Oaktree House,
Grantley Close, Shalford, Guildford, Surrey.

Anent Piranhas

MR. HEMS'S ARTICLE on piranhas (April 1970 issue) could perhaps stand some comment. I question that the reader who wrote that his piranhas favoured a prepared flake food over red meat or goldfish really had piranhas. There are a number of genera more or less closely similar to *Serrasalmus* in appearance which are either omnivorous or vegetarian in diet. Some of these could be mistaken for *Serrasalmus* rather easily. Dr. T. R. Roberts of Harvard has recently discovered (and will soon publish on the fact) that one close relative of the piranhas feeds principally or wholly on skin and scales of other fishes, which it rasps off with its sharp teeth.

Mr. Hems is right in saying (following Alan Fletcher) that some species of *Serrasalmus* are less ferocious than others. I pointed this out quite clearly in my "Monograph on the Piranha" ("The Aquarium Journal" for Feb. and Mar., 1949). I can add four other facts about the dangerous species: 1. In some places they seem always to be dangerous, while in others they have never been known to attack a man in the water. 2. In some places they are dangerous only at certain seasons. 3. Because at least some of the piranhas are migratory, dangerous species are absent at certain places at certain times. 4. As to whether a certain species is dangerous to man at a particular moment, a great deal depends on the man, his understanding of piranha behaviour, and his actions in the water.

I have stood in Amazonian water of 2 feet depth on a sandbank amidst a shoal of excited piranhas that were engaged in attacking and chopping to pieces a group of *Ctenopoma* and other characids which I was attempting to collect. I was not attacked and did not expect to be. I simply stood there quietly watching the carnage and the pieces of *Ctenopoma*, which the piranhas were chopping into halves or thirds at every snap. But I am quite sure that if I had wriggled a bare toe above the sand just then it would have been bitten.

Just below the Pirapora rapids of the Rio São Francisco, in the month of September, at the time of low water, I tried to collect the largest and putatively the most dangerous of all piranhas. I failed, and the local market fishermen told me that the big piranhas were absent and arrived from downriver only when the rains of the wet season began to swell the Francisco. Incidentally, this species reaches 24 inches (well over half a meter) in total length. Even the smaller *S. nattereri* of the Amazon, Guayana and Plata systems occasionally reaches 15 inches or more.

Yes, there have been regulations established banning the keeping or importation of piranhas in certain states of the U.S.A., but over here we are not quite as naive as Mr. Hems seems to believe. I have had something to do with drawing up some of these regulations. It has not dawned on Mr. Hems, I

think, that *Serrasalmus nattereri* inhabits not only tropical waters in the Amazon but also relatively cool waters of the temperate zone in Uruguay and Argentina, and that some waters in the U.S.A.—especially in southern California, Florida and Hawaii—are fairly subtropical in temperature. At least two Amazonian species, *Astronotus ocellatus* and a *Plecotomus* (so far not identified), as well as the tropical Indian *Clarias batrachus*, have already been established for some years in Florida waters. Also *Belonesox belizanus* and perhaps some other tropical species. All have been a result of the inevitable overflowing or breaking down of ponds on tropical aquarium fish farms during heavy rains or hurricanes. No, Mr. Hems, we are not naive about piranhas. Incidentally, the name *Rooseveltiella* can no longer be used, due to being preoccupied in zoology.

G. S. MYERS,

Stanford University, California.

2250 Amherst St.,
Palo Alto, Calif. 94306,
U.S.A.

Jack Hems Replies to G. S. Myers

JACK HEMS WRITES: Most aquarists know that a few, perhaps several, characids that look like piranhas will eat dried food. But the fact that at least one species of *Serrasalmus* 'feeds principally or wholly on skin and scales' does seem to suggest that all piranhas do not share the same tastes in food. Not long ago, in a dealer's shop, I watched what I guessed to be young *S. hollandi* but which the dealer told me he had bought under the name of *S. nattereri*, feeding on flake food. It is, I think, up to interested aquarists and dealers to observe carefully the foods that young (small) piranhas are seen to eat while in their care and report on their findings to the aquarium press.

The ways of fishes are unpredictable and long before the experts started telling us that some piranhas are less ferocious than others and behave differently in different places, the distinguished traveller and author, Peter Fleming, recorded his personal experiences with piranhas in his enchanting book *Brazilian Adventure* (Cape, 1933). 'All day we had waded among them . . . We derived what comfort we could from the belief that we were exposing a fallacy; we were debunking the piranha. We remember all we had read, all that we had been told, about the rapacity, the vindictiveness of these fish . . . But they never attacked us; these tigerish creatures might have been poultry for all the harm we took from walking among them.' Peter Fleming continues: 'I cannot explain their policy of non-aggression. There is no doubt that, although we never had any trouble with piranhas on the Araguaya, they were a very real danger there. The Carajas treated them with respect and made us treat them with respect too. Their ferocity, and their power, by

attacking in large numbers, to disable men and animals, are established facts: not legends.'

I am ready to believe that lots of Americans are far from naive. It was never my intention to suggest that they were. But I have read so much in one of America's most influential and widely circulated aquarium magazines on how the restrictive legislation has been framed and operated in different states that it is no wonder I wrote as I did. I ask you, Dr. Myers, to refer to the issues of *The Aquarium* magazine for December 1967, February 1968, January 1969 and February 1969. I have read, for instance, that some of the experts in the employ of the fish and game departments of some states are not as expert as we would wish. In fact, it is recorded in *The Aquarium* of December 1967 that an employee of the California Department of Fish and Game, engaged in preparing a paper on piranhas, requested information on these fish from the magazine and admitted to a complete lack of knowledge of the amount of cold piranhas could stand. In the same issue, readers are told that a certain state fish and game department paid a prominent ichthyologist \$50 to give it some information on what a piranha looked like. Of course legislation is needed in certain states, but not of the sort that is open to ridicule. (Seemingly there has been a proliferation of bills demanding the outlawing of fishes that could be as much danger to the population of certain areas of the U.S. as polar bears would be to the inhabitants of the Sahara.)

Siamese Fighters at Tube Products

THESE ARE NOT the pugilistic kind but a species of tropical fish donated by members of the newly formed Aquarist Society at Tube Products Ltd. to stock an aquarium which its members have made and installed in the new lounge of their sports and social club in Birmingham Road, Oldbury.

One member, the society's show secretary, Jack Sheldon, a mill fitter in the welding department at Popes Lane, travelled some 200 miles round Wales, during his weekend, collecting the right kind of slate and rock to create the landscape effect in the tank. Measuring 5ft. x 18 in. x 12 in., the aquarium contains 1½ cwt. of gravel, 1½ cwt. of slate and rock, various plants and, together with 80 gallons of water, weighs 15 cwt. It is heated by three 120 watt heaters and a pump supplies, through two air stones, the oxygen in the water.

The aquarium contains twenty-five tropical fish at the moment, but the society plans to increase this quantity. Produced in their own time, the aquarium and its contents have cost only £10, whereas it would have cost the club £200 to purchase a comparable one.

Photo shows members of Tube Products' Aquarist Society with Mr. Sheldon topleft.



Tadpoles and Goldfish

Recently, I introduced a pair of Common Toads into my garden pond. Only days later, I found that they had spawned. When the spawn hatched, the tadpoles were at once attacked by the goldfish, but, being those of a toad, they were immediately rejected. Soon the fish learned to ignore the tadpoles, but the latter began to try to feed on the ectoparasites on the fishes' scales. At first this appeared to irritate the fish, but they were soon accepting the tadpoles, much like sharks accept the Pilot-Fish, and could be seen basking in the shallows, with tadpoles swarming all over them.

At present, goldfish and tadpoles are living in perfect harmony, and the tadpoles are disposing of vast amounts of *algae*.

S. BIRKIN.

Inaccurate Hydrometers

WOULD YOU DO a very real service to the marine fishkeeping hobby by publishing a warning that there are a large number of hydrometers being sold to hobbyists which are giving inaccurate readings to an alarming degree?

In the course of investigating customers' marine fishkeeping problems (both traders and hobbyists alike) it has been found that readings on some of these instruments are as much as 10 degrees out showing the density of the sea water to be 1.020 when in fact the true reading is 1.030! The results of such an error have been pretty grim.

One particular type of hydrometer manufactured in the U.S.A. features prominently in this disgusting business, but others of British and German manufacture have also been encountered. Part of the trouble comes about through a number of hydrometers which are calibrated to be correctly read at temperatures other than the normal tropical aquarium reading, being

Continued on next page

THE WATER HAWTHORN

By Jack Hems

Aponogeton distachyus, popularly called the water hawthorn, is one of the loveliest plants to introduce into a garden pond. The floating leaves, of a rich green sometimes suffused with purple, or brown, are narrowly oblong and average about five inches long by about an inch across. They are borne on slender stems that adapt themselves to the depth of the water. Although three feet is not too deep, fifteen to eighteen inches is better.

The stems rise from a tuberous rootstock that grows fastest in a compost of old loam or well-rotted turves' soil enriched with a pinch or two of bonemeal. A sunny position is advised.

The plant has a flowering season extending from May to October: in mild weather well into December.



The flowers are snow-white, packed on a Y-shaped stem, with jet-black anthers. They ride at the surface like small boats. The erudite Mrs. Perry tells us (*Water Gardens*, Penguin Books, 1962) that the flowers are eaten in South Africa, from where the plant was brought to England (Kew) towards the end of the eighteenth century. By the end of the nineteenth century it had become established in ornamental lakes as far north as Edinburgh. Propagation is by seed and division of a well-grown tuber.

Report on New Flake Food for coldwater fishes

By A. Boarder

FOLLOWING THE GREAT success of the Tropical flake food which Spratt's Patent Ltd. introduced a short time ago, the firm has now produced and marketed a flake food for coldwater fishes. I have had the opportunity of testing this food and find that it is an excellent product. I am not going to repeat all the ingredients in the food as these can be read by anyone from the packet. What I have done is to give the food a serious test by using seven young fantail goldfish in an indoor tank. I have been using the flake food exclusively for these fish for many weeks now and the water has remained crystal clear. The fish have kept in excellent health and their red colour has been enhanced. In a test of this kind I do not use any live food nor any other type of food whatsoever. In this

way it is possible to assess the value of the food and the fact as to whether the state of the water is adversely affected will also be apparent.

This flake-food floats on the surface and when it is offered to the fish they immediately swim to the surface and take it avidly, none ever reaching the bottom. With many dried foods the fish will take in a small amount and then spit it out, but this food is taken and swallowed without any being rejected. As the food is dehydrated it is so very concentrated that only a little is needed to feed the fish and keep them in tip-top condition. I have no fault to find with this food and feel sure that it will become very popular with all coldwater fishkeepers.

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used and read as correct at these temperatures. However, a good many are not even correct at the temperatures for which they are said to be calibrated.

My supplier of marine fish, Earl Kennedy, recommends a density of 1.020 which is what I normally maintain, but a good many authorities and books recommend a density of 1.025 which means by using

one of these faulty hydrometers and adopting the recommendation of a higher density, the aquarium can be running with a water density of a reading as high as 1.035, and although a certain number of fish will tolerate this high density and live all right in it, the majority of species will not—particularly the more delicate and expensive types!

Please bring this situation to the notice of the hobbyist.

OUR EXPERTS' ANSWERS TO YOUR QUERIES



READERS' SERVICE

All queries **MUST** be accompanied by a stamped addressed envelope.

Letters should be addressed to Readers' Service, The Aquarist & Pondkeeper, The Butts, Brentford, Middlesex.

TROPICAL QUERIES

By Jack Hems

How does one sex *Rasbora heteromorpha*?

The female of this species is fuller in the body than the male and her reds and golds are less intense at all times.

Will pieces of lead in the aquarium kill tropical fish?

Most freshwater tropicals are not harmed by a very small quantity of lead in the aquarium. All the same, the practice of anchoring every plant introduced into an aquarium with a lead collar is not a good one; for a build-up of lead in a small body of water could well have the effect of shortening the life of fish. It is said that a concentration of more than 0.3 parts of lead per million parts of water is sufficient to cause muscular paralysis and worse in human beings.

My *nitella* and *egeria* plants have what looks like a deposit of white powder all over the stems and foliage. Is this a sign of disease?

Your plants are showing signs of excessive calcium in the water. The *nitella*-type of plant can take a lot, but the elodeas are sometimes killed by too much lime.

I have tried to hatch brine shrimp eggs without much success. The eggs are placed in jar of salty water standing on top of my tropical aquarium. Where am I going wrong?

Perhaps your brine solution is not strong enough. Use about four to five tablespoonfuls of sea-salt to

the gallon and maintain a temperature of at least 78°F (26°C).

A fellow aquarist who has gone to live in another part of the country gave me a pair of fish called dwarf rainbow cichlids. Please give me some information about this species.

First of all the proper name of the dwarf rainbow cichlid is *Pelmatochromis kribensis*. Usually the female is the brighter coloured of the two. When in breeding condition her bloated abdominal region turns a glowing red. The male has a lot of violet and pearly hues showing on the sides and, sometimes, a very noticeable eye-spot in the upper portion of the caudal fin. Any food is eaten. Peaceful except when spawning or courting. The male attains about 3 in., the female about 2½ in. The dwarf rainbow cichlid hails from the Congo.

I cannot get any plants to grow in my tank. The tank is a regular glass and steel framed 24 in. by 12 in. by 12 in. situated in an alcove some distance from a window. It is lit by a 30 watt strip light switched on for most of the day. Your comments, please.

Clearly your answer is to give your tank a brighter light. An ordinary 30 watt strip light is no help at all, but a 40 watt warm white fluorescent light would grow almost any plant sold by a dealer. Among the plants I recommend are *Cryptocoryne affinis*, *Aponogeton crispus*—as a centrepiece—*Hygrophila*, Java moss, and *Sagittaria subulata*.

In some local ponds there are quite a few different species of potamogeton growing in the shallows. Would any of these pond weeds continue to grow if I introduced them into my aquarium?

Generally speaking the answer is no, but the fine-leaved potamogeton called *P. pectinatus* can usually be acclimatized to warm water. But it is no use introducing this plant into a tank stocked with heavy-bodied boisterous fish: they'd only break it to pieces. What it needs is as little disturbance as possible, clear water, and a strong top light.



The Great Diving Beetle seen resting underwater on a water snail. Such an unwelcome visitor should be netted and removed. It will bite portions from adult fish leaving wounds to become disease-infected.

I have read time and time again that *Trichogaster leeri* is peaceful and most suited to community life, yet my trio are always fighting. Can you explain this, please?

Perhaps you have not owned your gouramis for a very long time, for it only when they are moved by love that they make rushes at one another (though it is usually the male that does all the rushing) or other fishes that get in the way. When they are not courting, displaying or protecting the bubble nest they are well-behaved fish.

I would like to know the scientific name and natural home of the golden ear?

The scientific name of the golden ear is *Fundulus chrysotus*. It is widespread in the fresh and brackish waters of South Carolina and Florida.

What is a least killifish?

The least killifish is a popular name given to *Heterandria formosa*, better known over here as the mosquito fish, by some American writers.

COLDWATER QUERIES

By A. Boarder

I have a conservatory which gets a fair amount of sunshine. Could I have a glass fibre pool and keep fishes and plants in it or would it get too warm?

The conservatory would be a very good place for a

pool, especially if it was surrounded by rocks and Alpine plants. You could keep the types of fancy goldfish which are rather too delicate for the outdoor pond during winter. You may find that the fishes and plants will grow apace with the warm conditions and so do not over-stock with either of them.

Would *Pseudotropheus zebra* be a suitable species to introduce into a community tank?

I doubt it; from all accounts this cichlid is pugnacious. Furthermore, like all the cichlids from the great inland lakes of Africa, *P.zebra* needs rather special conditions: for example, alkaline water, rocks rather than plants, and plenty of swimming space.

My small son netted a beetle from a local pond and introduced it into our tropical aquarium. It is brown on the back with some lighter markings and, as far as I can make out, has four strong but feathery-looking legs and what looks like pincers at the front. It seems very happy in its new home and I should like to know the proper name of it.

Take my advice and give this beetle a large jar or small tank to itself or return it to its original waters; for what you have is, I think, the great diving beetle (*Dytiscus marginalis*). If you leave it where it is it will certainly do harm to your fish.

I have kept fantails and moors for some time and now I have bought four new fish, but they have died within 24 hours. Can you explain this?

The goldfish should not have died within 24 hours unless there was something radically wrong with them. The fact that you had already kept other fish inclines me to the belief that the fish must have been ailing when you bought them. So many fish are imported from warm countries that when they are placed in cold water they soon become ill and die. Also some dealers try to keep too many fishes in their tanks and so use heavy aeration. If the fish then go into water which may not be as well oxygenated it is almost certain that they will not thrive. Some imported fish are kept without food in transit and almost starved. They are then in a weak condition and anything different in the water or its temperature may soon upset them.

I have bought a pair of Cambridge blue shubunkins, 4-5 inches long, for my pond. Is it possible to breed from them this year?

The fish are large enough to breed and as long as you have a true pair they should breed. By a true pair I mean a male and female fish. Some people call a pair of fish, any two fish but they may not always be a sexed pair. If the water in your pond remains pure and well oxygenated there is no reason why the fish should not breed.

I have a pond 15 by 6 by 3 feet joined to a smaller one about 6 by 3 by 2 feet. How many fish can I keep? I want to have Orandas, lion-heads, veiltails and fantails, etc., and would like to know if I can also keep Rudd, Higo carp and Koi carp with them?

Your pond could hold two dozen fish but I do not think that your choice will be a successful one. As you live in Westmorland you will get plenty of cold weather in the winters and some of the fish you mention will not take kindly to such cold conditions. Any fish with flowing finnage such as veiltails, orandas and veiltail moors will be likely to contract fin-rot disease during the cold weather. The Rudd would be all right and possibly the Higo but the Koi carp might not survive as they may have been bred under very warm conditions and could not become acclimatised to your temperatures.

Will you please enlighten me on what to do with my goldfish in a tank while I am on holiday for a fortnight as I am very attached to them and would not like to lose them?

Feed as usual before going away giving not a scrap extra. Do not get anyone to feed them while you are away. See that the water is pure before leaving, turn off any light over the tank, shade from strong light and try to see that the room in which they are kept is as cool as possible; leave the door of the room open if sunshine enters.

I have a large pond with a good selection of goldfish which have started to breed. I have been having a lot of trouble with frogs and toads in my pond. Are they harmful to the fish?

At this time of the year the frogs and toads will not harm the fish. The toads will have left the pond until next spring as soon as they had spawned. Most of the frogs will also have left but there are usually one or two which remain about the pond all the summer and occasionally dive in during hot weather. These creatures do not normally harm goldfish but sometimes a spare male frog can grasp a sluggish fish and could kill it if it was not removed. I have never found either feed under the water. Their tadpoles can be a blessing and a nuisance. Fish will eat frog tadpoles but not toad tadpoles once they get to about half grown. If too many remained uneaten in the pond they could harm fish, especially any fish which was heavy with spawn, such as a short-bodied fish of the fantail type. These fish swim slowly and if a number of tadpoles got on to one, they would eat off all the mucus covering and the fish could die.

I am about to clean out a small garden pond and as there are a number of leeches in it I would like to know what to put the plants in to disinfect them.

Leeches are fairly tough creatures and are rather difficult to kill. I think that if you put the plants in a solution of T.C.P. or Dettol for a short time the leeches would drop off or be killed. Do not leave the plants in the solution for more than a couple of minutes. The strength can be a teaspoonful to a gallon of water.

A few months ago I noticed my goldfish in a tank were rubbing themselves along the bottom of the tank and had small white spots on them. I diagnosed gill flukes and treated them for this. Now some of them have black marks on them. What caused this?

I suspect that your fish were suffering from white spot disease, not gill flukes. The black marks on the fish are possible places which were damaged. When new growth is made this is often black but usually changes to the red or orange in time.

I have built a fish-house and was advised to allow for plenty of light. I now find that the water in the tanks gets very green with Algae and I cannot see the fish. What can I do about it?

Excess light can always be shaded out with blinds. You can cover the tanks with duck weed which will cut out a lot of the light. Also plenty of growing water plants will tend to keep down the green Algae. However, it is the light which causes the green Algae

to grow and if no light reached the water then the Algae would never grow. Experiment with shading and you should soon get the water right.

I have a tank in which I have kept goldfish for over three years. I recently bought 3 tench, 2 catfish and one moor. All were added singly, but the tench lasted three days, the catfish one day and the moor six hours. Why was this?

As you had kept goldfish for three years in the tank there was obviously nothing wrong with the water conditions. The fish died either because they were not healthy when you bought them, the conditions were very different from those in the dealer's shop or the tank became overcrowded. Fish do not just die for no reason and the actual cause of the death of your fish might be traced by a few investigations. Did you over-stock the tank? If so the newer fishes would be the first to feel the lack of oxygen. If the fish had been used to strong aeration at the shop and you had none this could also affect the fish adversely. Check up on the size of the tank and the sizes of your fish. You should not have more than an inch of fish, body length, to each 24 square inches of surface area of water.

I have a golden orfe about 15 inches long and would like to know how to convey it to shows. I have used a 24 by 12 by 12 in. tank up to now but the water picks up quite a momentum when the tank is travelling in the boot of my car. What can I use?

There is nothing to worry over if the water in the carrying tank becomes disturbed. This is a good point as the orfe is a fish which must have a well-oxygenated water at all times. The movement of the water will assist in its reoxygenation. Most fishes nowadays are carried in plastic bags in cardboard



boxes, but your method should be quite safe. Remember to enquire of any show secretary where you wish to exhibit your fish as to the size of tanks available and whether there is a limit to the size of the fish exhibits.

I wish to make a fairly large pool in the garden using Butyl lining. However I am troubled by moles in the garden and wonder if there is anything I can do to prevent the possible damage to the lining by moles?

The moles will only work where there are likely to be garden worms. If you apply a plentiful supply of worm killer to the ground before laying the sheeting, this should deter the moles. Although moles have very strong claws I do not think that they would attack the lining. You could deter them by keeping the soil around the pond very wet as the moles do not like to work in wet ground.

PRODUCT REVIEW

FREEZE DRIED SHRIMP, Freeze Dried Tubifex and Freeze Dried Tubifex & Shrimp Tablets, are made by Cryogenic Suspensions Ltd., 30 Brookside Walk, Radcliffe, Lancs.

This is a new range of freeze dried foods which are fished, processed and packed in Great Britain. The foods are completely pure and contain no additives, fish glue, sugar or starch, etc. The shrimp appears to be whole shrimp—including shells—ground into a fine grain size, after freeze drying. The plastic tub holds 15 grams. The tubifex tub contains 10 grams, in the now familiar small cube form. The tablets are composed of both freeze dried shrimp and tubifex, and are about the size of a 6d. piece. Each tablet is

0.35 grams. I do not know the prices of these foods, as yet.

My fish were quite keen on these foods, especially the tableted combination. I found that the shrimp sank very quickly, before the fish had time to eat very much. The tablets also sank quickly but were soon found by the fish. The tubifex, after it had soaked for a short time, also sank fairly quickly. The tablet food is especially suitable for smaller fish, and the other two foods for all types of fish. A friend's goldfish were not as keen on the foods as were my tropicals. No analyses of the foods were given on the containers.

B.W.



from AQUARISTS' SOCIETIES

Monthly reports from Secretaries of aquarists' societies for inclusion on this page should reach the Editor by the 5th of the month preceding the month of publication.

THE Open Show of the Bristol Tropical Fish Club proved to be as successful as last year with all available tanks being used. The results were as follows: Siamese Fighting Fish: 1, Mrs. C. C. King; 2, Miss C. Holland; 3 and 4, D. J. Bateman. Labyrinth: 1, B. A. Harding; 2, B. Barnshaw; 3, J. Wheeler; 4, L. Littleton. Barbs: 1, L. Littleton; 2 and 3, B. A. Harding; 4, G. Furber. Hemmi and Hyphe: 1, R. K. Day; 2, C. Butcher; 3, R. Harvey; 4, R. Watts. A.O.V. Characins: 1 and 2, R. A. Chapman; 3, B. Barnshaw; 4, R. C. Hyett. Angelfish: 1 and 3, J. Bull; 2, R. Harvey; 4, M. Drosney. Dwarf Cichlids: 1, C. Butcher; 2, H. Musialik; 3, R. Harvey. A.O.V. Cichlids: 1 and 2, R. Watts; 3, F. Brown; 4, R. Lawrence. Corydoras: 1, L. Littleton; 2, M. Taylor; 3, J. Wheeler; 4, F. Brown. A.O.V. Catfish: 1, F. Brown; 2, D. Wainman; 3, S. Green; 4, M. Scott. A.V. Danios: 1 and 3, G. Furber; 2, K. Titcomb; 4, R. Oldland. A.V. Sharks and Loaches: 1, L. Littleton; 2, G. Furber; 3, R. K. Day; 4, V. Davies. A.O.V. Tropical Fish: 1, G. Furber; 2, A. N. Other; 3, G. R. Dyer; 4, H. Musialik. Mollies: 1, M. A. Lerway; 2, Mrs. J. Purnford; 3, B. A. Harding; 4, T. J. Braekin. Swordtails: 1, M. Taylor; 2, M. A. Lerway; 3, R. Watts; 4, B. A. Harding. Breeders Egg-layers: 1, R. Watts; 2 and 4, H. Musialik; 3, J. Wheeler. Plants: 1, G. Furber; 2, H. Musialik; 3 and 4, R. K. Day. Breeders Livebearers: 1, H. Musialik; 2, J. Wheeler; 3, B. A. Harding; 4, W. Ashwood. Guppies Longtail: 1 and 2, J. Wheeler; 3, D. Chick; 4, M. Taylor. Guppies Short-tail: 1, 2 and 3, J. Wheeler. Guppies Female: 1, J. Wheeler; 2, Mrs. M. A. White; 3 and 4, J. Wheeler. A.V. Sexed Pairs: 1, B. Barnshaw; 2, R. Watts; 3, H. Musialik; 4, C. Butcher. A.V. Livebearer (Junior): 1, D. Purnford; 2, S. Woolston; 3, C. Holland; 4, L. Kimber. Killifish: 1, R. A. Chapman; 2, F. Brown; 3, B. Barnshaw and J. Norris. A.V. Egg-layers (Juvenile): 1, D. Lear; 2, A. Marks; 3, S. Holland; 4, P. Carwright. Furnished Aquaria: 1, L. Littleton; 2, Mrs. M. E. Holland; 3, G. Furber. Best Fish in the Show: Guppy Longtail: J. Wheeler. Most points in the Show: J. Wheeler.

MEMBERS at the Leamington and District A.S. June meeting enjoyed a lecture by Mr. Twistleton assisted by Mr. Blackwell. Their lecture consisted of a talk and slides of the world's reptiles and amphibians. They began their talk by explaining the main difference between reptiles and amphibians, and went on to show slides of Newts, Toads, and Frogs, some of which are recorded to have lived for at least 37 years. They continued their talk by moving on to the subject of Skinks, Lizards and Snakes, and concluded by showing live exhibits of Lizards and Snakes. Table Show results: Two classes. Egg-layer (Pairs): 1, E. Clarke; 2, P. Taggart; 3 and 4, P. Underwood. Livebearer (Pairs): 1, P. Taggart; 2 and 3, F. Underwood; 4, W. Guntherpe.

THERE was a disappointing turnout of members of the Bradford and District A.S. at the main June meeting, probably due to the World Cup television programme. D. Shields from Halifax gave a fine talk on "Furnished Aquaria." As a prize winner in the National Furnished Aquaria Exhibition held in Bradford, he naturally concentrated on competitive setting-up. In this respect, he advised entrants in a

furnished aquaria class to have one eye on their tank and one eye on the judge. It was wise to remember previous winning designs in this respect. The tips he gave regarding choice of rocks, plants and fish were mainly basic ones, as everyone has different ideas on what constitutes beauty. The object, after all, is to produce a realistic and attractive aquascape. Fishwise, Mr. Shields preferred a single species which showed itself in the open areas. The main class in the monthly Table Show was Cichlids: Results: 1 and 3, A. Firth; 2, M. Kozicki. A.O.V.: 1, 2 and 3, P. Chorley.

AT the monthly meeting of the Southampton A.S. there was a cartoon quiz, with members and guests trying to discover the names of tropical fish from numerous illustrated cards. The winner was Mrs. J. Vincent. A new competition in which members had to try to forecast the judges' decision on various specimens of fish was a success and was won by M. Calvert, one of the junior members. The Table Show, for Catfish and Loach, was judged by G. McCann, of Shirley, Southampton and the results were: Novice: 1 and 2, G. Houston; 3, S. Hillman. Advanced: 1 and 2, D. Jones; 3, E. Hearn.

THERE was a good entry of nearly 300 for the Open Show of the Bishop Auckland A.S. and the results were as follows: Best Fish in Show: Mr. and Mrs. Atwell (Peterlee). Best Individual Effort: Mr. and Mrs. Atwell (Peterlee). Furnished Jar: 1, A. Duncanson (Priory); 2, J. Robertson, Jr. (Mount Pleasant); 3, A. Bailey (Sunderland). Guppy: 1, Mr. and Mrs. Atwell (Peterlee); 2, Mr. Greenacre (Mount Pleasant); 3, G. Thickbroom (Castleford). Mollies: 1, Mr. Bebbington (Peterlee); 2, L. Willis (Hartlepool); 3, J. A. Whiteley (Aireborough). A.O.V. Livebearers: 1, Mr. Roberts (Peterlee); 2, Mr. Soothern (Peterlee); 3, Mr. Orman (Stockton). Large Cichlids: 1, J. D. Watson (Hartlepool); 2, Mr. Bebbington (Peterlee); 3, Mr. Atherton (Mount Pleasant). Dwarf Cichlids: 1, J. A. Whiteley (Aireborough); 2, A. Dwyer (Aireborough); 3, Mr. Chamberlain (Hartlepool). Small Characins: 1, J. Simpson (Peterlee); 2, Mr. and Mrs. Low (Cleveland); 3, A. Duncanson (Priory). Large Characins: 1, A. Duncanson (Priory); 2, F. Taylor (Bishop Auckland); 3, Mr. Greenacre (Mount Pleasant). Small Fighters: 1, Mr. and Mrs. Clark (Ind.); 2, Mr. Roberts (Peterlee); 3, Mrs. Leighton (Houghton-le-Spring). A.O.V. Labyrinth: 1, T. P. Prie (Priory); 2, J. Patterson and L. Turner (Stockton); 3, K. Dods (Bishop Auckland). Rasbora and Danio: 1, Mr. and Mrs. Atwell (Peterlee); 2 and 3, G. Lee (Stockton). E.L.T.C.: 1, Mr. Haley (Cleveland); 2, J. E. Ayre (Bishop Auckland); 3, R. A. Walker (Ind.). Small Barbs: 1, J. A. Whiteley (Aireborough); 2, Mr. and Mrs. Atwell (Peterlee); 3, C. E. Enright (Houghton-le-Spring). Large Barbs: 1, C. Simpson (Peterlee); 2, R. A. Walker (Ind.); 3, D. Ambrass (Mount Pleasant). Breeding Pairs (E.L.): 1, J. D. Watson (Hartlepool); 2, R. A. Walker (Ind.); 3, D. Ambrass (Mount Pleasant). Breeding Pairs (L.B.): 1, A. Duncanson (Priory); 2, Mr. Greenacre (Mount Pleasant); 3, J. A. Whiteley (Aireborough). Breeders Class (H.L.): 1, Mr. Soothern (Peterlee); 2, Mr. Dwyer (Aireborough); 3, J. A. Whiteley (Aireborough). Breeders Class (L.B.): 1, F. Pulman (Stockton); 2, Mr. Greenacre

(Mount Pleasant); 3, C. A. Enright (Houghton-le-Spring). Corydoras: 1 and 2, Mr. and Mrs. Atwell (Peterlee); 3, W. Hollis (Peterlee). Sharks and Labros: 1, A. Stephens (Stockton); 2, Miss M. Turnbull (Ind.); 3, Mr. Rutherford (Ind.). A.O.V. Catfish and Loach: 1, Mr. and Mrs. Low (Cleveland); 2, J. A. Whiteley (Aireborough); 3, N. Watson (Hartlepool). A.O.V. Tropical: 1, Mr. and Mrs. Low (Cleveland); 2, Miss L. Carter (Cleveland); 3, J. Patterson and L. Turner (Stockton). Junior Section: 1 and 2, Master T. Barkworth (N. Aycliffe); 3, Miss S. Dixon (Bishop Auckland). Gold Water Section: 1, G. Thickbroom (Castleford); 2, R. Elliott (Bishop Auckland); 3, Miss T. Liddle (Peterlee).

THE Society Pond Competition of the Nottingham and District A.S. will be held on Sunday, the 23rd August, and the Home Aquarium Competition on the evenings of the 19th and 20th October. The annual show has been cancelled owing to venue difficulties.

MEMBERS of Lymington A.S. have erected a show stand at the Leisure and Pleasure Exhibition held at Lancaster Road Juniors School at Morecambe. Many kinds of fish are shown in the fourteen tanks, ranging from coldwater fancy goldfish, through tropical freshwater specimens, to coldwater marines from Morecambe Bay. By far the most popular has been the marine tank, with its shrimps, crabs, starfish and anemones. Also featured on the stand are a collection of cups and prizes won by Society members.

THE Open Show results of the Loughborough and District A.S. were as follows: Anabantids: 1, Mr. Anderson (Leicester Fishkeepers); 2 and 4, D. Sewell (Sherwood A.S.); 3, Mr. Spencer (Independent). Barbs: 1 and 3, Mr. Wilks (Haden); 2, K. J. Moore (Leicester A.S.); 4, Mr. Wood (Leicester Fishkeepers). Cichlids: 1, Edkins Pagett (Bedworth); 2, Mr. Makinson (Sherwood); 3, Mr. Sewell (Sherwood); 4, Mr. Walker (Loughborough). Danios, Rasbora, W.C.M.M.: 1 and 2, R. Clark (Sherwood); 3, Mr. Jordan (Leicester Fishkeepers); 4, Mr. Robinson (Northampton). Corydoras: 1, D. Birbeck (Sherwood); 2, D. Sewell (Sherwood); 3 and 4, S. Buchanan (Sherwood). Labros: 1, Mr. Willets (Haden); 2, Mr. Selby (N.D.A.S.); 3, Mr. Plackett (Northampton); 4, Mr. Harlowe (Derby Regent). A.O.V. Livebearers: 1, 2 and 3, J. Igoe (Sherwood); 4, R. Clark (Sherwood). Class M. Breeders (Livebearers): 1 and 2, Mr. Gibson (Huddersfield); 3, Mr. Sewell (Sherwood). Breeders (Egg-layers): 1, Mr. Anderson (Leicester Fishkeepers); 2, Mr. Jackson (Dukeries); 3, Mr. Walker (Loughborough); 4, Mr. Sewell (Sherwood). A.O.V. Tropical: 1, Mr. Clark (Sherwood); 2, Mr. Robinson (Northampton); 3, Mr. Parry (Loughborough). A.O.V. Catfish and Loaches: 1, Mr. Roberts (L.A.P.S.); 2, Mr. Jackson (Dukeries); 3, Mr. Hubert (Derby Regent); 4, Mr. Parry (Loughborough). Guppies: 1, 2 and 4, S. Buchanan (Sherwood); Characins: 1, Mr. Willets (Haden); 2, H. Eyre (Workop); 3, D. Sewell (Sherwood); 4, Mr. Robinson (Northampton). Livebearer (Pairs): 1, Mr. Igoe (Sherwood); 2 and 3, S. Buchanan (Sherwood); 4, R. Shakespeare (Bedworth). Egg-layer (Pairs): 1, Mr. Igoe (Sherwood); 2, R. Shakespeare (Bedworth); 3, Mr. Hires (Independent); 4, Mr. Eyre (Workop). Killifish: 1, Mr. Blackburn (Sherwood); 2, R. Shakespeare (Bedworth); 3, Mr. Anderson; 4, Mr. Jordan (Leicester Fishkeepers). A.V. Coldwater: 1, C. C. Carwright (Leicester); 2, 3 and 4, Mr. Makinson (Sherwood). Best in Show: Mr. Wilks (Haden) (Bisonatus Barb).

THE Guest Speaker at the June meeting of the Gloucester A.S. was Barry James (Cheltenham Aquatics). His subject was "Furnishing and Equipping Tropical Aquaria," and he illustrated his talk with various items of rock-work, plants, gravel. The talk was enthusiastically received by the members and an invitation was extended to Mr. James to visit the Club again in the near future.

Members of the Society and their friends organised an outing to Bournemouth recently with the intention of visiting the local aquarists' open show but unfortunately were unable to find the venue. Anyone interested in joining the Society are cordially invited to attend the meetings which are held on the first Thursday of the month at St. James Parish Hall, Upton Street, Gloucester, or alternatively to contact the Secretary for further details at 54 Tredworth Road, Gloucester.

THE "Mersey Beacon," the monthly publication of the Merseyside A.S. contains details of a lecture by G. Jennings. His subject was Marine Fishkeeping and was also illustrated with some excellent slides. The magazine also contains some presentations to be taken by the aquarist going on holiday. The secretary is R. Moorcroft, 24 Frankly Road, Liverpool, LA 7HX.

A SLIDE show was given by Mr. Ellick at the June meeting of the Yate and District A.S. The subject was fishes he has kept. It was also announced at this meeting that Major Coddington of Dodington Hall had agreed to become the Patron-in-Chief of the Society and it is hoped that this will be the beginning of a long and happy association. The results of the Table Show were as follows: Mollies: 1, M. Emery; 2, J. Ryemill; 3, R. A. Bennett. Guppies: 1, R. Adams; 2 and 3, C. Webb.

RECENTLY the East Midlands Section of the Federation of Guppy Breeder Societies were based at the Spring Assembly of the F.G.B.S., which was held at the Eyles Mottell Community Centre in Leicester. Although the attendance was quite small, and the number of fish on show was below average, a very enjoyable time was had by all. Results: Pintails: 1, C. Cleave. Scarfial: 1, A. Baker (Silver Pin); 2 and 3, P. Walker. Original Veiltail: 1, A. Baker (Silver Pin); 2 and 3, H. Gregory. Bottom Swords: 1 and 3, P. Walker; 2, M. Scott. Double Swords: 1, M. Shoobraid; 2, B. Walker. Dorsals: 1, T. Pilz; 2, M. Shoobraid. Lyrenals: 1, R. Cox; 2, J. Cleave. Long Dorsal Veils: 1, T. Pilz. Short Dorsal Veils: 1, A. Baker; 2, T. Pilz. Delta Tail: 1, T. Pilz (Silver Pin); 2, P. Walker. Superb Females: 1, 2, 3 and 4, H. Easterbrook. Grey Females: 1, P. Walker. Gold Females: 1, C. Pike. Wedgetail Females: 1, H. Gregory. Breeders Males: 1, W. Prince; 2, B. Walker. Breeders Females: 1, J. Carter; 2, B. Walker. Top Swords: 1 and 2, P. Walker. Best Breeders Team: W. Prince. Best Fish in Show: A. Baker (Scarfial). Best Opposite Sex: H. Gregory (Wedgetail). Inter-Section Shield: Won by East Midlands Section.

MEMBERS of the Yeovil and District A.S. recently volunteered to redecorate their meeting room at Park Lodge Youth Centre. R. Gorn, the Secretary, organised the working parties and it was completed with the aid of the ladies who supplied coffee. The June meeting consisted of a quiz, tropical and coldwater plants and tropical and coldwater breeders. The judges were T. Perry (Plants), S. Langdon (Coldwater), and N. Stainer (Tropical). Results: Quiz: 1, M. Hulbert; 2, D. Pham. Tropical Plants: (Cookson Cup): 1, A. Rendell; 2, M. Hulbert; 3, P. Sealey; 4, N. Lange. Coldwater Plants (Cookson Cup): V. Collins (only entry). Tropical (Breeders): 1, P. Sealey; 2 and 4, P. Gayford; 3, A. Rendell. Coldwater (Breeders): 1 and 3, S. Langdon; 2, V. Collins.

THE East London Aquarists and Pond-keepers Association once again wish to extend their thanks for a most entertaining evening given by Bernard Pys. The slide show and talk given on Tropical Plants was enjoyed by all members. A social evening was also enjoyed by over 100 members at the Angel Hotel and I am sure all who were present would like to express the thanks to J. Ross for a very enjoyable and very well organised evening.

THE Stroud and District A.S. are holding their first open convention at the Mid-Gloucestershire Technical College, Stroud, on

Sunday, 27th September, at 2.30 p.m. The lecturers are D. Cohen of Birmingham University who will give an illustrated talk on the genetics of breeding fish, and Dr. Belamy of Cardiff University who will talk on the behaviour patterns of breeding fish with particular reference to Piranhas. This will also be illustrated. Tea will be available after which there will be a question time and film show. Details of films will be given later. Next to the College there is a park with tennis courts, putting green and an open-air swimming pool which is open from 2 p.m. to 8 p.m. on Sunday, with adults' and children's pools. All enquiries to Miss J. Smith, Secretary, Prince of Wales, Cashes Green, Stroud, Glos.

THE Oldham and District A.S. are holding their annual Open Show on Sunday, 20th September, in the Music Room, Werneth Park, Oldham. Bending commences 12.30 p.m. until 2.15 p.m. Judging on P.N.A.S. Standards. This is also an A.M.D.A.S. Show. The park is situated on the A.62 Manchester Oldham Road, and contains a fine natural history museum, also excellent amenities for children, and good parking facilities.

THE results of the Hyde A.S. Open Show were as follows:—Novice: A.V. Livebearer: 1, A. Jackson (Independent); 2, J. P. Gee (Belle Vue); 3, Master Bradley (Belle Vue). A.V. Barbs: 1 and 3, R. Andrew (Hyde); 2, M. Hirst (Loyne). A.V. Characins: 1 and 3, Mr. Norris (Loyne); 2, C. Pennor (Hyde). A.V. Anabantid: 1, M. Jackson (Independent). A.V. Carp and Minnows: 1, S. Smith (Merseyside, Section Winner); 2, J. P. Gee (Belle Vue); 3, H. Harrop (Osram). Breeders: Livebearers: 1, Mr. and Mrs. Cobb (Belle Vue, Section Winner); 2, Mr. Sewell (Sherwood); 3, Mr. Bradley (Belle Vue). Jugglers: 1, Mr. Shackleton (Belle Vue); 2, Mr. Sewell (Sherwood). Livebearers: Guppies: 1, R. Thomkinson (Glossop); 2, R. Barnaby (Belle Vue); 3, S. Buchanan (Sherwood). Platies: 1, G. Waite (Ashton); 2, R. Thomkinson (Glossop); 3, Mr. and Mrs. Cobb (Belle Vue). Swordtails: 1, D. Godbehere (Stockbridge); 2, Mr. and Mrs. Heap (Belle Vue); 3, Mr. Haslam (Loyne). Mollies: 1, Mr. Igoe (Sherwood, Section Winner); 2 and 3, Mr. and Mrs. Grimshaw (Sunnybrow). A.O.V. Livebearers: 1, Mr. and Mrs. Heap (Belle Vue). Anabantids: Siamese Fighters: 1, W. Nowell (Hyde); 2, B. Wright (Hyde); 3, Mr. Shackleton (Belle Vue). A.O.V. Anabantid: 1, Mr. Sewell (Sherwood, Section Winner); 2, J. Bowker (Independent); 3, D. Godbehere (Stockbridge). Cichlids: Dwarf Cichlids: 1, M. Tonge (Oldham); 2, R. Davies (Belle Vue); 3, Mr. Beasley (Belle Vue). Angelfish: 1 and 2, Mr. Sewell (Sherwood); 3, P. and R. Standon (Loyne). A.O.V. Cichlids: 1, P. and R. Standon (Loyne, Section Winner); 2, J. Bowker (Independent); 3, Mr. and Mrs. Cobb (Belle Vue). Barbs: Small Barbs: 1, J. B. Dawson (Osram, Section Winner); 2, Master Kay (Top Ten); 3, D. Godbehere (Stockbridge). A.O.V. Barbs: 1, Mr. Abell (Sunnybrow); 2, Mr. and Mrs. Grimshaw (Sunnybrow); 3, Mr. Faulkner (Merseyside). Characins: Small Characins: 1, Mr. Birchwood (Oldham); 2, M. Tonge (Oldham); 3, B. Wright (Hyde). A.O.V. Characins: 1, M. B. Cass (Macclesfield, Section Winner); 2, Mr. Sewell (Sherwood); 3, Mr. Haslam (Loyne). Killifish: 1, 2 and 3, Mr. Lothhouse (Huddersfield, Section Winner). Carps and Minnows: Sharks and Flying Foxes: 1, D. and R. Standon (Loyne); 2, P. Mullis (Merseyside); 3, Mr. and Mrs. Cobb (Belle Vue). Rasbora, Danio and Minnow: 1, Mr. Tonge (Oldham, Section Winner); 2, R. A. Johnson (Ashton); 3, D. and R. Standon (Loyne). Catfish and Loach: 1 and 2, R. Davies (Belle Vue); 3, J. B. Dawson (Osram). A.O.V. Catfish: 1, Mr. Hodgkinson (Gorton and Openshaw, Section Winner); 2, A. Gleave (Stratford); 3, S. Buchanan (Sherwood). Loaches: 1, W. Smith (Merseyside); 2, S. Smith (Merseyside); 3, Mr. Hodgkinson (Gorton and Openshaw). A.O.V.: 1, Mr. Tonge (Oldham, Section Winner); 2, P. Mullis (Merseyside); 3, D. and R. Standon (Loyne). Paras: Livebearers: 1, R.

Thomkinson (Glossop); 2, R. A. Johnson (Ashton); 3, D. Godbehere (Stockbridge). Jugglers: 1, Mr. and Mrs. Heap (Belle Vue, Section Winner); 2, Mr. Haslam (Loyne); 3, S. Robinson (Sunnybrow). Coldwater, Common Goldfish: 1 and 2, Master A. Kay (Top Ten). A.O.V. Coldwater: 1, Mr. and Mrs. Müller (Belle Vue, Section Winner). Minifish: 1, Mr. and Mrs. Cobb (Belle Vue, Section Winner); 2, Mr. and Mrs. Heap (Belle Vue); 3, Master Cobb (Belle Vue). Mazine: 1, D. Haddock (Hyde, Section Winner); 2, M. Tonge (Oldham). Best in Show: 1, S. Smith (Merseyside); 2, Mr. and Mrs. Heap (Belle Vue); 3, Mr. and Mrs. Cobb (Belle Vue).

DUE to the sudden resignation of the Weymouth and District A.S. secretary a change of club officers was necessary. D. Roger agreed to take on the vacant position of secretary for an interim period and was duly elected. J. Turner was then appointed chairman of the Club and P. Carter and Mr. Coddell were elected to the committee. The Table Show was for Guppies and the placings were Female Guppy Class: 1 and 2, Mr. Jones; 3, Mr. Squibb. Male Guppies Class: 1, Mr. Jones; 2, Mr. Medway; 3, Mr. Orton.

MEMBERSHIP continues to increase in the Rhondda A.S. and over thirty members and visitors attended the June meeting, when the guest speaker was Graham Cox of Seaquariums Ltd. Not only did Mr. Cox give an interesting and informative lecture, but he brought a new outlook to the act of keeping Marines. The Committee and Members wish to thank Mr. Cox and B. Williams of the Tropical Fish Centre, Pontypridd, who helped to make his visit possible.

AT the last meeting of the Eastern Counties Section of the Federation of Guppy Breeder Societies the majority of the time was spent discussing and finalising details for the Section's Annual Show. It was decided that the Show be held on Saturday, 8th August, at West Ham College for Further Education in Stratford, and benching is to be from 9 a.m. to 2 p.m. Full details of venue and directions thereto can be obtained from the Secretary, Mrs. L. Myers, 40 Charlford Road, Canning Town, E.16. Telephone 478 2919. There will be full classes for members and non-members with trophies for the first in each class. Entries will be accepted in any square-sided container and it will cost 1s. per entry. Refreshments will be available in the Hall.

MEMBERS of the Coventry Pool & Aquarium Society decided at the June meeting on the layout for the Society's tropical furnished aquaria entry at the Midland Open Show in August. Many useful tips were brought to light which could very well be used in setting up aquaria at home.

The table show attracted thirty-two entries and this year a number of classes are being made in which only junior members may participate which should help juniors to gain more successes although there are a few juniors who have fish good enough to win in the senior classes. Results:—Barbs (under 3 in.): 1, D. Easingwood; 2 and 3, B. and P. Hirst; 4, B. Easingwood. A.V. Catfish: 1 and 4, E. Sheehy; 2, T. Scott; 3, P. Dennis. A.V. Coldwater: 1, B. Bromfield; 2 and 3, T. Manning; 4, I. Wilkins. Junior—A.V. Characins: 1, 2, 3 and 4, B. Hirst.

THE International Guppy Show was held at the end of May at the Gieba Farm Community Centre, Stockford, Birmingham.

THE SAFE CURE FOR WHITE SPOT IS  **Hillside Aquatics London N12**

Guppies from as far away as Singapore and California, U.S.A., were flown into British airports during the week and rushed up to the home of Malcolm Dellingspole. Entries from the Continent followed quickly and forty-five minutes after the scheduled closing time for benching, this massive array of Guppies had reached the staggering total of 848 entries, comprising 1,231 fish. In the Short Deesal Class, 89 entries were benched and the judge was Brian Hawkins. He placed the truly magnificent specimen, benched by Messrs. Jones and Vinal of the Edmonton Section first and this fish then went on to receive the "Best in the Show" Award.

The Calgary Trophy awarded to the section gaining the most points, went to the Edmonton Section with 110 points. The response from all sections, from M.C. in the north to all the sections in the London area and the south and Birmingham in the Midlands shows how the F.G.A. has grown over the past decade. The Fancy Guppy Association has sections in Manchester, Birmingham, London, on the South Coast, in Scotland and across the seas to Belfast.

Apologies are extended to those visitors who travelled quite some distance on Saturday to see the Show. This was an unfortunate misunderstanding.

Anybody who is interested in Breeding Guppies and would like to compete against the top breeders of the country, will be made very welcome at any Section Meeting. Details may be obtained from the F.G.A. Secretary, F. Campbell, 57 Cardigan Drive, Bury, Lancs.

A GENERAL quiz was held at the June meeting of the **Bishops Cleeve A.S.** between the junior members. The standard of the questions were found to be very high. The coming table show was for "Egglaying Tooth Carp" and the winners were as follows:—Junior Section: 1, P. Tattersfield; 2 and 3, L. Gamblen. Senior Section: 1 and 3, K. R. Burton; 2, N. W. Dooley.

THE June meeting of the **Carshalton and District A.S.** had a lower attendance than previous meetings. It is hoped that this was due to holidays. H. Towell judged the table show and also answered questions on fish breeding. The highlight of the meeting was a slide show entitled "The Box Walker Show," accompanied by a tape-recorded commentary. While the tape was not of a high standard, the slides covering a whole range of fish were excellent. The show lasting about an hour was well received by those present. The table show classes A.O.S. Egglayers and Anabantids were poorly supported. The results were:—A.O.S. Egglayers and Anabantids: 1, R. Horsley, 2, C. Lamb; 3, Jean Horsley. Anabantids: 1, E. Horsley, and John Dixon was first in the junior class.

FIVE new members were welcomed by the **Mid-Sussex A.S.** at their monthly meeting in June. The vice-chairman, D. Soper, announced that unfortunately the judge for next month's Table Show will be unable to attend, so this has been put back to the 15th October and the furnished show tank or jar has been brought forward to the July meeting.

The table show of A.V. Sexed Pairs, Egglayers and Livebearers was judged by P. C. Tomkins who awarded the prizes as follows: Egglayers: 1, C. Corbin; 2, 3 and 4, J. Walker; 5, D. Soper. Livebearers: 1, C. West; 2, S. Caulderbank; 3, J. Walker; 4, D. Soper.

A talk on the care and breeding of barbs was given by C. West, the Society's treasurer. He explained that as male barbs were generally more colourful than females it was preferable to keep at least three barbs together, one female and two males, which resulted in the males competing to attract the female and in doing so showing their true colours. Being egglayers, barbs are a challenge to breed but with proper care and attention it is quite possible. Providing the young are fed on plenty of live food they should grow into healthy adult fish.

As R. Smith will be unable to continue as show secretary for the remainder of the year, J. Walker has been elected from the existing

committee members as show secretary and N. Bridle was asked to fill the committee vacancy. The Society recently provided a Tropical Fish Display at the Carnival of Youth in Haywards Heath, which proved to be of interest to the general public. Any further information on the Society may be obtained from the Secretary, J. Reeve, 36 Rumbolds Lane, Haywards Heath, 3702 (evenings only).

TWO members of the **Harlow A.S.** recently won premier awards at the Fancy Guppy Association international show at Birmingham. D. Curry won the Masters Breeders Trophy for the third consecutive year, and H. Vinal the best fish in the Show. This was the third time in four years and quite an achievement with 800 entries and a total of 1,209 fish with entries from North America, Scandinavia, Singapore and the Continent. In honour of this magnificent success, D. Curry has been made honorary life member of the Harlow A.S.

THERE was a good attendance at the May meeting of the **G.K.N. A.S.** at which the table show was for Fighters, Anabantids, Anabantids (Juniors) and A.O.V. (Juniors). The judge mentioned that the standards of the fish were very good, and once again he was pleased to see junior members taking part. Winning members were F. Botton, J. Taylor; Junior members, A. Lowy, P. Heene.

The main item of the evening was a lecture given by N. Godes, of Marine Aquaria, Willenhall. He gave everyone a complete insight into how to prepare for, and keep Marines, and it is noticeable how many members are now interested, even to setting up.

THE election of officers at the annual general meeting of the **Hemel Hempstead A.S.** was conducted by R. Skipper on 11th June, when the following officers were elected: Chairman, E. Lawley; vice-chairman, A. Dibley; secretary, P. Trenwith; assistant-secretary, T. Craddock; treasurer, G. Whiby; assistant-treasurer and librarian, M. Whiby; show secretary, A. Tuff; assistant-show secretary, S. Collins; junior secretary, G. Trenwith; catering secretary, C. Gardner; press secretary, J. Collins; auditors, T. Gray and R. Pearson. Presentations: Shield for most points gained in table show: 1, T. Craddock; 2, A. Dibley; 3, L. Barnfield. Fish of the Year: 1, S. Collins; 2, D. Whiby; 3, A. Dibley. Junior Purshed Aquaria: 1, I. Sommes; 2, J. Whiby; 3, C. Gray. There is a change of meeting quarters, the new venue being the Lecture Hall, Adeyfield Secondary School, Longlands, Hemel Hempstead.

A VERY successful show was held by the **Cambridge and District A.S.** in June. There were some eighty fish entries and Mr. Ott won the best fish of the Show cup with a giant gowami. The Challenge Shield for the open furnished aquaria competition was won by Mid-Herts A.S., second being Cambridge and third Bedford.

THE **West London F.G.A.** were extremely pleased to see such a large number of members from the other London Sections at their June meeting. This resulted in an enjoyable afternoon and a show which had 99 entries. Some really wonderful fish were on show and these reflected the hard work that their owners had put into them. Anyone wishing to know more about Guppies are invited to the Brentford Youth Centre on any third Sunday in the month, starting at 3 p.m. The particulars are as follows: Brentford Youth Centre, Haldy Acre, Brentford, Middlesex. If this geographically is not suitable, information regarding other sections at New Cross, Edmonton and Radlett may be obtained from K. P. Ilmes, secretary, West London Fancy Guppy Association, 24 Sunview Avenue, Peasehaven, Sussex. These sections meet on the fourth, first and second Sundays in the month as listed.

THE officers elected when **Stockton-on-Tees A.S.** held their annual general meeting at their new headquarters, The Tillery Inn, Maritime

Road, Stockton, were as follow: Chairman, D. Keighly; secretary, G. Buck, 22 Danby Grove, Thornaby-on-Tees, Tel. 65284; press officer, F. Pulman, The Bungalow, Newsham Grange, Aislaby, Eaglescliffe; Teeside; show secretary, W. Bowman, 2 Seston Close, Fairfield, Stockton; treasurer, L. Osman. The Committee is Mr. and Mrs. Dixon, Mr. and Mrs. Clennet and Mr. Hartley.

The Mellors Trophy was won by F. Pulman for the most successful exhibitor for the half year, the Cameron Trophy for Champion of Champions was won by G. Lee, second and fourth being F. Pulman and third, L. Osman. Meetings are held every first and fourth Monday in the month, and old and new members, novice or expert, will be given a hearty welcome.

THE **Grimsby & Cleethorpes A.S.** now hold two meetings each month at the Newby Centre, Wrethby Woods entrance, Grimsby. For the June meetings, members were entertained with a film show—Animals, Toronto Zoo, Tropicals, and the chairman's own film. For the Table Show meeting, there was a slide lecture by the American Killifish Association. These types of shows are proving very popular, and more have been booked for future meetings. The Table Show results were as follows: Pairs Melies: 1 and 2, C. Easton; 3, R. Jennings. A.V. Not Listed: 1, 2 and 3, R. Crossy. Killifish: 1, C. Easton; 2, M. Jeremy; 3, D. Peddie. New members will find a warm welcome at the above address and willing helpers for newcomers to the hobby.

THE **Hull A.S.** members went to York Society in an away match, with the forlorn hope of gaining a victory in the Ingemills Cup competition. Support for the Hull club was poor and only twenty members made the trip—by coach. The Club pays a subsidy towards the cost of the coach, and gives further encouragement by running a free raffle for really worthwhile prizes on the basis of one ticket for each fish entered. The committee are really disappointed over this lack of support on away matches and would be pleased to hear from any other society who have solved this problem. Two teams, one from Hull, one from York, gave some nearly all correct answers to a quiz which was run by B. Leadley of York Society, the result being a hard-earned thirteen points to each team. Results as follows:—Livebearers: 1, G. Hargreaves (York); 2 and 3, T. Douglas (Hull). Barbs: 1, H. S. Allison (York); 2, Mrs. B. Busch (Hull); 3, M. Allison (York). Characins: 1, A. S. Allison (York); 2, E. Leadley (York); 3, R. Buksh (Hull). Rasbora: 1, T. Douglas (Hull); 2, V. B. Hargreaves (York); 3, Mrs. Busch (York). Fighters: 1, P. Walker (York). Anabantids: 1, A. Douglas (Hull); 2, K. Watson (York); 3, R. Andreang (Hull). Cichlids: 1, R. Neal (York); 2, P. Carey (York); 3, T. Douglas (Hull). Gats: 1, A. S. Allison (York); 2, P. Carey (York); 3, R. Buksh (Hull). Tooth-Carps: 1, V. B. Hargreaves (York). A.O.V.: 1, D. Hockley (York); 2, V. B. Hargreaves (York); 3, P. Carey (York). Breeders Livebearers: 1, Mr. Stevenson (York). Breeders Egglayer: 1, A. S. Allison (York). Best in Show: D. Hockley (York). Final result: York 50 pts., Hull 15 pts.

THE **Llantwit Major A.S.** held its Tropical Fish Show in June when there were 320 exhibits, four of which were furnished aquariums. The results were: 1, Mrs. G. Vinicombe; 2, Mrs. J. Edwards; 3, S. Ireland. Winners of the fish classes were as follows:—Barbs: 1, P. Brown; 2, A. Lewis; 3, C. Perry. Characins: 1 and 3, A. Lewis; 2, Mrs. Purnford. Hem, Hyph and Chelidon: 1, R. Hoare; 2, H. Jones; 3, Mr. Butcher. Cichlids: 1, P. Payer; 2, Mr. Treadgold; 3, R. S. Wigg. Angels: 1, H. Jones; 2 and 3, R. W. Hill. Apis Petri and Nana: 1, E. Brown; 2, Mr. Hesketh; 3, Mr. Butcher. Labrythns: 1, C. Pass; 2, R. Hoare; 3, C. Penny. Fighters: 1, Mrs. King; 2, D. Bateman; 3, Mr. and Mrs. Harding. Egglaying Toothcarps: 1, R. W. Hill; 2, N. Llawdlyn; 3, Mrs. King. Tropical Catfish: 1, Mr. Treadgold; 2, F. Brown; 3, R.

Wilkie, Breeders Livebearers: 1, R. Wilkie; 2, R. W. Hill; 3, R. Player. Best Guppy was won by R. & S. Hoare. Best Fish in the Show was won by A. Lewis with a Cardinal. Judges in attendance were Dr. Cole, Birmingham; J. Wheeler, Trowbridge; C. Lewis, Newport and B. Clarke, Bristol.

THE June monthly meeting of the **New Forest A.S.** included a talk by Bert Coombes of Bournemouth. His subject was "The Goldfish and its Descendants," and members were given descriptions of the Common Goldfish, Shubunkin, Fantail, Veiltail, Lionhead and Comet. The mention of the word Shubunkin gave rise to a discussion on the merits and otherwise of the new classification.

The results of the evening's table show were as follows:—Guppies: 1, D. Bennett; 2, D. Tuckwell; 3, B. Higginson; 4, L. Menhennet. Shubunkin: 1 and 2, D. Lutz; 3, M. Lee; 4, R. Travers; Special, L. Menhennet. Bristol-type Shubunkin: 1 and 2, A. Williamson.

THE last few weeks have been an interesting and active period for the **Hastings and St. Leonards A.S.** On 31st May a coach party of 37 members visited The Aquafleet Pet Centre, Northfleet, where members were made welcome and were able to purchase some of the more unusual species. From there they went to Bran Hatchery, Swanscombe, where they were able to see fishkeeping from the commercial side. On 12th June J. Chandler, a biologist with Sussex River Authority, gave a talk on "Life in the Pond" and also answered many questions from the coldwater fish fanciers. On 17th June a party of 20 members visited the Zoogeomium on Hastings Pier where the members saw a varied collection of fish and plants and on the 26th June J. V. Morrice gave an enlightening talk on "Mollies" with emphasis on breeding.

The Table Show for 12th June was for Male Guppies. Results being: 1, A. McCormick; 2, P. Harbord; 3, G. Chalcraft. The Table Show for 26th June was for Mollies, the results being: 1, Master A. Reed; 2, Master C. Mescham; 3, Master B. Reed.

RECENT speakers at **Ealing and District A.S.** have been R. Armstrong talking on Killies and L. Jordan talking on Cichlids. D. Armstrong came laden with many show jars of various species and one pair of fish certainly bore out his comments upon them by spawning in the jar as he spoke! L. Jordan was no less entertaining with his motor bike and sidecar story and hand-painted maps. Both these speakers were invited to the Club through the strengthening ties between Ealing and Bracknell A.S.; however, it has not been only a one-way traffic—C. Ankin has given a talk to Bracknell on diseases, and another member will be giving a talk to Bracknell next month when it is hoped to stage a match between the two clubs.

Ealing had a busy month for in addition to supporting the Fishkeeping Exhibition at Alexandra Palace they staged a display at Ealing Town Hall during the Annual Arts & Crafts Exhibition Week. There is no respite for members who stay at home either for this month the Home Furnished Aquaria Competition is being judged. The Club's second Open Show has been fixed for the 4th October, and schedules will be available in the near future.

ACTIVITIES of the **Guildford and District Aquarist Club** during June consisted of a lively evening with a quiz, and another evening devoted to a daphnia hunt which proved to be extremely profitable.

A TALK by P. Stothard on the breeding and collecting of live foods was the main item at the June meeting of the **Harrogate and District A.S.** This was a very good and informative talk and was thoroughly enjoyed by all. Three new members also joined. New members are always welcome and meetings are held every second Tuesday of the month at the Conservative Rooms, Park View, Harrogate.

THE results of the challenge match between **Horsforth A.S.** and **Castleford A.S.** were as follows: A.C. Livebearer: 1, Mr. and Mrs. Cohen; 2, Mr. Cooling; 3, I. Heptinstall. Cichlids: 1, Mrs. Helm; 2, C. Asquith; 3, I. Heptinstall. Barbs: 1 and 2, Mr. and Mrs. Cohen; 2, I. Heptinstall. Characins: 1 and 2, G. Thickbroom; 3, Mrs. Brooks. Juniors: 1 and 2, G. Thickbroom; 3, I. Heptinstall. A.O.V.: 1 and 2, I. Heptinstall; 3, Miss Helm. Pairs: 1, Mrs. Helm; 2, C. Corra; 3, Mr. and Mrs. Cohen. Breeders: 1, 2 and 3, Mr. and Mrs. Cohen. Catfish and Loach: 1, Mr. and Mrs. Gates; 2, Mr. and Mrs. Cohen; 3, I. Heptinstall. Anabantids: 1, Mr. and Mrs. Cohen; 2, Mr. and Mrs. Gates; 3, G. Thickbroom. Fighters: 1, D. Sharp; 2, Mr. and Mrs. Gates; 3, Mr. and Mrs. Cohen. Goldwater: 1 and 2, C. Asquith; 3, G. Thickbroom. Best in Show went to D. Sharp with a Red Fighter. The winning society was Castleford with 62 pts. against Horsforth with 10 pts.

A CLUB quiz was arranged for the members who attended the June meeting of the **Tonbridge & District A.S.** A selection of questions on the subject of Tropical Freshwater Fish and Plants were arranged for the two teams which were formed and good results were obtained by both teams. Results of the Table Show were: Corydoras Cats: 1 and 2, I. Mathieson; 3, Mrs. I. Bellingham. A.O.V. Cats: 1, R. Baker; 2 and 3, J. Bellingham. Floating Plants: 1, I. Mathieson; 2, Mrs. D. Mathieson.

MEMBERS of the **Basingstoke A.S.** heard a talk by Dr. J. N. Carrington at their last meeting. His subject was "Modern Fishkeeping Techniques" and he included a variety of his company's latest products to illustrate his lecture. Among these products was an ultra-violet light which has been developed to the aquarist's advantage as a means of killing both bacteria and disease, and no doubt aquarists will be seeing more of this method in future fishkeeping. The evening's Table Show results were:—Novice: 1, N. Stead; 2, R. Weston; 3, S. Russell. A.O.V. Tropicals: 1, A. Baker; 2, G. Clewer; 3, M. Strange. Loaches: 1, M. Gough; 2, H. Gough; 3, A. Marshall.

THE City of **Salford A.S.** Open Show will be held at the Lancasterian Hall, Swinton, on the 30th August. The Society is open for new members, and visitors are always welcome. Meetings are held on alternate Tuesdays, and activities include film shows, outings, fish shows, etc. Further details may be had from Hon. Secretary, Mrs. S. McGorkin, 59 Devonshire Street, Higher Houghton, Salford, M7 0BE.

THE last meeting of **Vauxhall Motors A.S.** had as the main item a slide and tape show on Cichlids. This dealt with all aspects of the fishes from breeding to showing. The Table Show was for A.V. Tropical and the best fish in the Club. The results were: 1, Mr. Jeffs (Thick-lipped Gourami); 2, B. Burgess (Bronze Catfish); 3, J. Biggs (Saltin); 4, D. Calver (Linatus). The judge was Mr. Randall of the Betchley Club.

THE **Northwick & District A.S.** held their second Open Show at the end of June and this year's entries were 100 up on last year, the total being 269. Eighteen Societies entered against six last year. Results: Best Fish in Show: Mr. and Mrs. M. Miller (Belle Vue). Best Livebearer: Mr. and Mrs. C. Grimshaw (Sunnybrow). Best Fish by Member, Nadar: H. W. Bowman (Northwich). Northwich Member gaining most points: H. W. Bowman (Northwich). Society gaining most points: Belle Vue A.S. Livebearers Section: Mr. and Mrs. C. Grimshaw (Sunnybrow). Guppies: 1, L. Bradley (Northwich); 2, Mr. and Mrs. A. Wild (Salford); 3, Mr. and Mrs. Hogarth (Salford). Sword-tails: 1, Mrs. C. Kaye (Top Ten); 2, N. R. Gibson (Huddersfield); 3, Mr. and Mrs. Cobb (Belle Vue). Mollies: 1, Mr. and Mrs. Grimshaw (Sunnybrow); 2, R. and I. Antonio (Northwich); 3, Mr. Prichard (Wrexham).

Platies: 1, Mr. and Mrs. Cobb (Belle Vue); 2, H. Bowman (Northwich); 3, P. Thompson (Wrexham). Barbs Section: F. Ledger (Top Ten). Barbs (up to 3 in.): 1, F. Ledger (Top Ten); 2, Mr. and Mrs. A. Wild (Salford); 3, R. and A. Johnson (Ashton). Barbs (over 3 in.): 1, Mr. and Mrs. Grimshaw (Sunnybrow); 2, J. Obell (Sunnybrow); 3, R. and I. Antonio (Northwich). Characins Section: F. Oliver (Wrexham). Characins (small): 1, F. Oliver (Wrexham); 2, Mr. Prichard (Wrexham); 3, Mr. and Mrs. Hogarth (Salford). Characins (large): 1, H. Bowman (Northwich); 2, R. Adamson (Northwich); 3, R. Ankers (North Staffs). Anabantids Section: Mrs. J. Shackleton (Belle Vue). Fighters and A.O.V. Anabantids: 1, Mrs. J. Shackleton (Belle Vue); 2, A. Lomas (Merseyside); 3, H. Bowman (Northwich). Cichlids Section: A. Lomas (Merseyside). Angels: 1, B. Pearson (Northwich); 2, F. Oliver (Wrexham); 3, C. and K. Davies (Northwich). Cichlids (dwarf): 1, F. Oliver (Wrexham); 2, N. R. Gibson (Huddersfield); 3, F. Ledger (Top Ten). Cichlids (large): 1, A. Lomas (Merseyside); 2, Mr. Prichard (Wrexham); 3, Mr. Lease (Stone). Carps and Minnows Section: R. and A. Johnson (Ashton). Danios: 1, H. Bowman (Northwich); 2, Mr. and Mrs. Hogarth (Salford); 3, Mr. and Mrs. Cobb (Belle Vue). Rasboras: 1, R. and A. Johnson (Ashton); 2, L. Thorne (Northwich). Sharks and Flying Foxes: 1, R. Mayer (North Staffs); 2, Mr. Lease (Stone); 3, H. Buckley (Northwich). Catfish and Loach Section: R. Davies (Belle Vue). Catfish (small): 1 and 2, R. Davies (Belle Vue); 3, R. Basing (Sunnybrow). Catfish (large): 1 and 2, R. and I. Antonio (Northwich); 3, J. Faulkner (Merseyside). Loach: 1, P. Shackleton (Belle Vue); 2, J. Faulkner (Merseyside); 3, Mr. and Mrs. Hogarth (Salford). A.O.V. Tropical Section: Mr. and Mrs. Heap (Belle Vue). A.O.V. Tropical 1 and 2, Mr. and Mrs. Heap (Belle Vue); 3, K. Ankers (North Staffs). Tooth Carps: 1, S. Smith (Merseyside); 2, F. Ledger (Top Ten); 3, K. Ankers (North Staffs). Pairs Section: Mr. and Mrs. Heap (Belle Vue). Pairs (Livebearers): 1, Mr. and Mrs. Hogarth (Salford); 2, J. Brierley (Belle Vue); 3, R. and A. Johnson (Ashton). Pairs (Egglayers): 1, Mr. and Mrs. Heap (Belle Vue); 2, L. Thorne (Northwich); 3, Mr. and Mrs. Cobb (Belle Vue). Breeders Section: Mr. and Mrs. Hogarth (Salford). Breeders (Livebearers): 1, N. R. Gibson (Huddersfield); 2, R. Danielson (Huddersfield); 3, Mr. and Mrs. Cobb (Belle Vue). Breeders (Egglayers): 1, Mr. and Mrs. Hogarth (Salford); 2, Mrs. J. Shackleton (Belle Vue); 3, H. Bewick (Warrington). Coldwater Section: Mr. and Mrs. Miller (Belle Vue). A.O.V. Coldwater: 1, Mr. and Mrs. Miller (Belle Vue); 2 and 3, L. Bradley (Northwich). Junior Section: Master T. Dean (Hillemere Port). Junior (Egglayer): Master T. Dean (Hillemere Port); 2, Miss A. Davies (Belle Vue); 3, P. Dawson (Oldham). Juniors (Livebearers): 1, S. Smith (Merseyside); 2, G. Brierley (Belle Vue); 3, J. Brierley (Belle Vue).

IN May the **Cardiff A.S.** were entertained by Mrs. Player who gave a very interesting talk on the "Breeding of Guppies," afterwards there were lengthy discussions on the subject. There was also the Knock-out Competition won by Mr. and Mrs. Blyden, second being Colin Harding and third Gordon Churchill. The shield won is to be held for one year.

The results of the Open Show were as follows: Male Guppies: 1, C. Hurn; 2, J. Edwards; 3, A. Ward; 4, Mrs. Player. Female Guppies: 1 and 3, Mrs. Player; 2, Mr. and Mrs. Blyden; 4, Mr. and Mrs. C. Harding.

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Mollies: 1, Mr. and Mrs. Williams; 2, E. Brooks; 3, C. Huen; 4, B. Harding. Swords: 1, B. Snell; 2, C. Penny; 3, D. Noble; 4, D. Warrance. A.O.V. Livebearers: 1, R. Hoare; 2, B. Snell; 3, J. Powell; 4, D. Warrance. Fighters: 1, S. Scudamore; 2, Mr. and Mrs. Balydon; 3, Mr. and Mrs. Harding; 4, D. Warrance. Labyrinth: 1, B. Gorwill; 2, B. Harding; 3, D. Warrance; 4, G. Carter. Barbs (under 3 in.): 1 and 4, G. Churchill; 2 and 3, D. Warrance. A.O.V. Barbs: 1, B. Gorwill; 2, D. Warrance; 3, B. Harding; 4, Mr. and Mrs. C. Harding. H. & H. Characins: 1, H. Jones; 2, Mr. and Mrs. Harding; 3, R. Wilkie; 4, B. Waller. A.O.V. Characins: 1, J. Turner; 2, E. Brooks; 3 and 4, R. Hoare. Cichlids: 1, P. Player; 2, J. Turner; 3, B. Gorwill; 4, B. Snell. Dwarf Cichlids: 1, T. Hatton; 2, Mr. Brown; 3, W. J. Allen; 4, Mrs. Overland. Angels: 1, H. Humphreys; 2, P. Sargent. Corydoras: 1, G. Carter; 2, Mr. Squibb; 3, P. Jenkins; 4, J. Powell. A.O.V. Catfish: 1 and 3, J. Turner; 2, B. Gorwill; 4, W. J. Allen. Rasboras, Danios and Minnows: 1 and 3, R. W. Hill; 2, D. Warrance; 4, D. Noble. Loaches/Botias: 1, R. W. Hill; 2, D. Noble; 3, Mr. and Mrs. Balydon; 4, R. Hoare. Egg-laying Toochcarps: 1, G. Carter; 2, 3 and 4, G. Churchill. A.O.V. Egg-layers: 1, T. Hatton; 2 and 3, P. Player; 4, R. Hoare. Breeders (Egg-layers): 1 and 2, B. Gorwill; 3 and 4, G. Churchill. Breeders (Livebearers): 1, R. Wilkie; 2, R. W. Hill; 3, D. Noble; 4, P. Player. Sexed Pairs: 1 and 4, R. Wilkie; 2, B. Snell; 3, D. Warrance. Furnished Jars: 1, J. Turner; 2, T. Phillips; 3, P. Burley; 4, R. Chard. Juniors (Egg-layers): 1 and 4, M. Wilkie; 2, A. Ward; 3, H. Jones. Junior Livebearers: 1 and 3, M. Wilkie; 2, D. Player; 4, C. Brooks. Best Fish in Show: P. Player (Blue Acara). Most points in show: G. Gorwill. Highest pointed Fish for a Cardiff member was Master Martin Wilkie who received the James Callaghan Cup to be held for one year.

THE Coventry Pool & A.S. show attracted 511 fish exhibitors and about 600 people. The best fish in the show was a Velifera Molly owned by Mr. and Mrs. Carter of Bedworth Society. The Society with the most entries and also the most points was Bedworth. The individual with the most points was R. Trippas of M.T.A. Twenty clubs were represented at the show coming from all over the Midlands and London. The lecture by Mr. Roy Skipper on Discus fish was very enjoyable and the slides were really magnificent.

The following were the results: Male Veiltail Guppy: 1, D. Cannon, Nuneaton; 2, Mr. and Mrs. Cox, Nuneaton; 3, Mr. and Mrs. Carter, Bedworth; 4, Attwood and Williams, Robery. A.O.V. Male Guppy: 1, Mr. Hathaway, Bedworth; 2, F. Mason, Northampton; 3, T. Scott, Coventry; 4, Mr. and Mrs. Cox, Nuneaton. A.V. Female Guppy: 1, Mr. Morrell, Derby; 2, F. Underwood, Leamington; 3, Mr. and Mrs. Carter, Bedworth; 4, R. Trippas, M.T.A. Mollies: 1, Mr. and Mrs. Carter, Bedworth; 2, R. Tedds, Bedworth; 3, M. Bates, Haydon; 4, Edkins and Padgen, Bedworth. A.O.V. Livebearers: 1, N. Furness, Longbridge; 2, J. Grant, Coventry; 3, R. Trippas, M.T.A.; 4, Mr. Smith, Danios and W.C.M.M.; 1, Miss Chew, T.P.A.S.; 2, A. Dawes, Wednesbury; 3, Edkins and Padgen, Bedworth; 4, Mr. Gibbs, Bedworth. Rasboras: 1, N. Furness, Longbridge; 2, Mr. Hardy, Bedworth; 3, G. H. Roberts; 4, Mrs. S. Leigh, Nuneaton. Barbs (small): 1, A. Massey, Wednesbury; 2, D. G. Wood, Leicester Fish Keepers; 3, Mrs. P. Roberts; 4, R. Trippas, M.T.A. Barbs (large): 1, R. Trippas, M.T.A.;

2, G. Cartwright, Leicester A.S.; 3, E. Sheehy, Coventry; 4, Mr. Wilkes, Haydon. Dwarf Cichlids: 1, Mr. Westmacott, Binks-Bullows; 2, A. W. Spencer, Atherstone; 3, Mrs. P. Roberts; 4, Mr. and Mrs. Pratt, Bedworth. A.V. Angel Fish: 1, J. A. Tinker; 2, G. H. Roberts; 3, F. Underwood, Leamington; 4, D. Eastwood, Coventry. A.O.V. Cichlids: 1, Mr. Dean, T.K.A.G.; 2 and 4, Edkins and Padgen, Bedworth; 3, R. Tedds, Bedworth. Characins (small): 1 and 4, Mr. Wilkes, Haydon; 2, M. Bates, Haydon; 3, T. Lockman, Coventry. Characins (large): 1, R. Tedds, Bedworth; 2 and 4, Attwood and Williams, Robery; 3, D. Wood, Loughborough. Killifish: 1, T. Lockman, Coventry; 2, G. Wandie, Wednesbury; 3, R. Shakespeare, Bedworth; 4, Mr. Dean, T.K.A.G. Fighting Fish: 1 and 4, J. Fellows, M.A.P.S.; 2, J. H. Jordan, Leicester Fish Keepers; 3, K. Allen, Binks-Bullows. A.O.V. Anabantids: 1, Mr. Wilkes, Haydon; 2, Mrs. V. S. Haines, Nuneaton; 3, L. Hooper, T.P.A.S.; 4, Mr. and Mrs. Bunting, Nuneaton. Corydoras and Brochis Cats: 1, G. Turner, Binks-Bullows; 2 and 3, J. Fellows, M.A.P.S.; 4, Attwood and Williams, Robery. A.O.V. Catfish: 1, J. Reeves, Wednesbury; 2, A. Robinson, Northampton; 3, Mr. Gibbs, Bedworth; 4, E. Sheehy, Coventry. Loaches: 1, G. H. Roberts; 2, Mr. and Mrs. Ascott, Nuneaton; 3, L. W. Spencer, Atherstone; 4, T. Scott, Coventry. Pairs (livebearers): 1, 2 and 3, R. Trippas, M.T.A.; 4, K. Jones, Nuneaton. Pairs (egg-layers): 1, R. Shakespeare, Bedworth; 2, G. Turner, Binks-Bullows; 3, A. Dawes, Wednesbury; 4, D. Chamberlain, Leicester Fish Keepers. Breeders (livebearers): 1, K. Jones, Nuneaton; 2, Mr. and Mrs. Cox, Nuneaton; 3 and 4, D. Cannon, Nuneaton. Breeders (egg-layers): 1, Edkins and Padgen, Bedworth; 2, Mr. Anderson, Leicester Fish Keepers; 3 and 4, Mr. and Mrs. Cox, Nuneaton. Labros and Sharks: 1, D. J. Smith, Leicester Fish Keepers; 2, Mr. Gibbs, Bedworth; 3, K. Allen, Binks-Bullows; 4, F. Underwood, Leamington. A.O.V. Tropical: 1, Mr. and Mrs. Cox, Nuneaton; 2, T. Parry, Loughborough; 3, G. Ross; 4, S. Bloxham, Nuneaton. Shubunkins: 1, 2 and 4, B. Bromfield, Coventry; 3, Mr. and Mrs. Balcombe, Bedworth. Common Goldfish: 1 and 2, M. Shillow; 3, E. A. Wilkie, Coventry; 4, B. Bromfield, Coventry. A.O.V. Fancy Goldfish: 1, Mrs. S. Leigh, Nuneaton; 2, R. Shakespeare, Bedworth; 3, C. Pratt, Bedworth. British Native Coldwater: 1 and 2, R. Tedds, Bedworth; 3, D. Beard; 4, B. Bromfield, Coventry. A.O.V. Coldwater: 1, Mrs. V. S. Haines, Nuneaton.

ENTRIES at the second Open Show of the **Boston A.S.** were exactly double those of last year. There were 948 exhibitors and hundreds of visitors. Winner of the Aquarist Gold Pin, Best Fish in show trophy and best tropical fish award was J. Wright of Alfreton A.S. But his club found strong competition for the top society honours from the week-old Sherwood A.S. from Nottingham. The Best Coldwater Fish Trophy was won by M. J. Saunders, of Spalding. Full results were: Guppies: 1 and 3, G. Buchanan (Sherwood); 2, M. Allsopp (Alfreton). Mollies: 1 and 2, J. Igoe (Sherwood); 3, G. Buchanan (Sweetwater); 1, H. Bunnage (Lincoln); 2, S. Gerrard (Alfreton); 3, Mr. Tite (Kettering). Platies: 1, H. Kuhn (Lincoln); 2, S. Clark (Sherwood); 3, Mrs. M. Colam (Peterborough). Small Barbs: 1 and 2, J. Wright (Alfreton); 3, S. Gerrard. Large Barbs: 1, E. Parker (Grimsby); 2, K. Evans (Grimsby); 3, I. Precar (Grimsby). Small Characins: 1, 2 and 3, J. Wright. Large Characins: 1, Mr. Duffin (Boston); 2, D. Sewell (Sherwood); 3, Mr. Tyrrell (Kettering). Killifish: 1, M. Skivington (Alfreton); 2, S. Gerrard; 3, D. Sewell. Minnows and Danios: 1, M. Allsopp; 2, D. Jackson (Dukeries); 3, Mr. Peppier (Grantham). Sharks and Foxes: 1, T. Sands (Boston); 2, H. Bunnage; 3, I. Precar. Rasboras: 1, S. Gerrard; 2, I. Lyall (Skegness); 3, D. Moody (Boston). Dwarf Cichlid: 1, H. Kuhn; 2 and 3, D. Wrage (Alfreton). Large Cichlid: 1, J. Wright; 2, M. Allsopp; 3, D. Sewell. Angels: 1 and 3,

D. Sewell; 2, R. Clarke (Sherwood). Catfish: 1, G. Buchanan; 2, Mr. Tite; 3, D. Sewell. Loaches: 1, D. Jackson; 2, D. Wrage; 3, I. Lyall. Fighters: 1, Mr. Pattison (Grantham); 2, J. Hutchinson (Dukeries); 3, T. W. Dobbs (Lincoln). A.O.V. Anabantids: 1, H. Bunnage; 2, D. Sewell; 3, R. Butler (Peterborough). A.O.V. Tropical: 1, E. C. Smaller (Boston); 2, M. P. Roberson (Grimsby); 3, M. Crick (Kettering). Breeders Egg-layers: 1, J. Igoe; 2 and 3, L. Evans (Grimsby). Breeders Livebearers: 1, H. Kuhn; 2 and 3, S. Paver (Grantham). Pairs Egg-layers: 1, R. Clarke; 2, Mr. Hyde (Lincoln); 3, M. Allsopp. Pairs Livebearers: 1, P. Strange (Kettering); 2, J. Igoe; 3, Mrs. M. Colam. Goldfish and Comets: 1, Mr. Bannister (Boston); 2, M. Smith (Boston); 3, Mr. Prendergast (Boston). Shubunkins and Fancy Goldfish: 1 and 2, Mr. Saunders (Spalding); 3, J. Wright. A.O.V. Coldwater: 1, T. Sands (Boston); 2, Mrs. M. Colam; 3, R. Clarke.

THE results of the annual Open Show of the **Stockton-on-Tees A.S.**, were as follows:—Furnished Aquaria: 1, R. and D. Shanks; 2, L. Osman; 3, J. Smith; 4, A. Brown. Furnished Jars: 1 and 2, J. Orr; 3, C. Phillips; 4, C. Burgess. A.V. Fighter: 1 and 4, J. Orr; 2, P. Pulman; 3, R. and D. Shanks. A.O.V. Labyrinth: 1, D. Keithley; 2, K. Wallow; 3, L. Collins; 4, R. and D. Shank. A.V. Large Cichlid: 1, G. Lee; 2, L. Collins; 3, R. Hay; 4, W. Bowman. A.V. Barb: 1, L. Collins; 2, Mr. and Mrs. Atwell; 3, C. Simpson; 4, E. Turnbull. A.V. Characin: 1, K. Low; 2, J. Williams; 3, R. Hay; 4, L. Osman. A.V. Platy: 1, L. Collins; 2, B. Walls; 3, W. Hollis; 4, E. Hartley. A.V. Sweettail: 1 and 3, L. Osman; 2, L. Collins; 4, J. Orr. A.V. Mollie: 1, B. Walls; 2, E. Turnbull; 3, C. Phillipson; 4, E. Pulman. A.V. Scavenger: 1, K. Low; 2, L. Collins; 3, J. Orr; 4, J. Simpson. A.V. Corydoras: 1, E. Turnbull; 2, Mr. and Mrs. Clennett; 3, P. Pulman; 4, C. Simpson. A.V. Guppy: 1, Mr. and Mrs. Atwell; 2, J. Orr; 3, K. Hickford; 4, P. Collins. A.V. Dwarf Cichlid: 1, Mr. and Mrs. Clennett; 2, R. and D. Shanks; 3, D. Simpson; 4, A. Hill. A.V. Egg L.T. Carp: 1, 3 and 4, W. Carter; 2, W. Hollis. A.V. Rasbora Danio: 1 and 2, G. Lee; 3, E. Hartley; 4, B. Walls. A.O.V. Tropical Fish: 1, Miss L. Carter; 2, K. Low; 3, A. Wales; 4, D. Mulgrew. Breeding Pairs (Egg-layers): 1, Mr. and Mrs. Atwell; 2, Mr. and Mrs. Clennett; 3, C. Phillipson; 4, Mr. and Mrs. Clennett. Breeding Pairs (Livebearers): 1, B. Walls; 2, E. Turnbull; 3, C. Buck; 4, M. Collins. Breeders Class (Egg-layers): 1, L. Collins; 2, F. Pulman; 3, C. Buck; 4, J. Henry. Breeders Class (Livebearers): 1 and 2, C. Buck; 3, E. Turnbull; 4, J. Henry. A.V. Coldwater: 1, 2 and 3, K. Hickford; 4, R. and D. Shanks. Best in Show: Upside Down Cat—shown by K. Low.

THE results of the **Uxbridge A.S.** Open Show when 477 fish were benched in twenty-four classes were as follows: Individual Furnished Aquaria: 1, R. Pender (Uxbridge); 2, S. Mole (Totterham); 3, M. Goss (Riverside). Barbs: 1, P. Grosvenor; 2 and 4, C. Pike; 3, S. Cowell; equal 4th, Mrs. D. Cruickshank. Characins: 1, J. Pollard (Kingston); 2, T. Summers (Uxbridge); 3, S. Cowell (Bethnal Green); 4, J. Irvine (Baling). Cichlids: 1, Mrs. Neithersole (Riverside); 2, R. Bowes (Walthamstow); 3, J. Berryman (Beckenham); 4, R. Sargent (Bitchley). Dwarf Cichlid: 1, R. Brown (Walthamstow); 2, A. Tuffs (Hemel Hempstead); 3, A. Blake (Basingstoke); 4, S. Dale (Hounslow). Labyrinth: 1, F. Kendrick (Preclance); 2, A. Blake (Basingstoke); 3, G. Greenhalf (Kingston); 4, J. Hesley (Baling). Egg-laying Toochcarps: 1, S. Tarrant (Hendon); 2, T. Summers (Uxbridge); 3, S. Tarrant (Hendon); 4, R. Barrett (Kingston). Tropical Catfish: 1, C. Buckland (Riverside); 2 and 3, G. Greenhalf (Kingston); 4, S. Cowell (Bethnal Green). Corydoras-Brochia: 1, S. Mooney (Totterham); 2, L. Neighbour (Uxbridge); 3, C. Pike (High Wycombe); 4, R. Cox (High Wycombe). Rasboras: 1, B. Funnell (Uxbridge); 2, D. Bundy (Bethnal Green); 3, T. Summers (Uxbridge); 4, T. Cruickshank (Baling). Danios-W.C.M.M.: 1, B. Smith (King-

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ston); 2, I. Neighbour (Uxbridge); 3, R. Biggs (Kingston); 4, S. Tarrant (Hendon). Loaches: 1, M. Carter (Bracknell); 2, K. Thomas (Uxbridge); 3, L. Little (Bracknell); 4, J. Healey (Basing). Tropical Egg-layers: 1, C. D. Bunday (Bethnal Green); 2, M. Strange (Basingstoke); 3, Linda Garrad (Runnymede); 4, G. Greenhalf (Kingston). Two pairs of any A.V. Tropical Fish: 1, G. Greenhalf (Kingston); 2, C. Wood (North Kent); 3, B. Mason (Independent); 4, C. Wood (North Kent). Male Guppy: 1, R. Bowes (Walthamstow); 2, S. Cowell (Bethnal Green); 3, R. Maynard (Hendon); 4, M. Goss (Riverside). Swordtails: 1, T. Cruickshank (Basing); 2, R. Cox (High Wycombe); 3, D. Riley; 4, C. Ankin (Haling). Plaice: 1, R. Forder (Uxbridge); 2, Mrs. M. Parker (Uxbridge); 3, L. Little (Bracknell); 4, B. Burke (Riverside). Molly: 1 and 3, Mrs. D. Cruickshank (Uxbridge); 2, B. Smith (Kingston); 4, P. Maskin (Riverside). A.O.S. Livebearer: 1, Mrs. D. Cruickshank (Uxbridge); 2, J. Pellard (Kingston); 3 and 4, J. Stephens (North Kent). Single-Tail Goldfish: 1, 2 and 4, D. Goodbody (Walthamstow); 3, V. Voysey (Salisbury). Twin-Tail Goldfish: 1 and 2, W. Bradford (Uxbridge). Breeders Tropical Egg-layers: 1, R. Cox (High Wycombe); 2, M. Strange (Basingstoke); 3, A. Chandler (Walthamstow); 4, P. Grosvener (Kingston). Breeders Tropical Livebearers: 1, G. Greenhalf (Kingston); 2, L. Little (Bracknell); 3, B. Mason (Independent); 4, L. Little (Bracknell). Plants: 1, R. Forder (Uxbridge); 2, Mrs. L. Thompson (Uxbridge); 3 and 4, J. Stephens (North Kent). The best fish show award and Aquarist Gold Pin went to R. Forder who also won the F.B.A.S. Colindale Plant Trophy. Mrs. D. Cruickshank won the Molly Trophy presented by The Arcade Pet Stores, Uxbridge. The Peter Gieger Barb Cup was again won by P. Grosvener. G. Greenhalf won the Annual Committee Trophy for the best fish over nine inches long, a black shark. Prizes were presented by Miss Margaret Iwer, the Hillingdon Carnival Queen. The Cup for the club with the highest points went to the host club, Uxbridge; second were Kingston and third Walthamstow.

A substantial increase was reported from the Dukeries A.S. for their second Open Show. 331 fish were exhibited by 28 Societies and the Best Fish in Show was judged to be a Blue Fighter, owned by D. Kennedy of Bradford. The remainder of the results were as follows: Swordtails: 1, Miss S. Gerrard, Alfreton; 2, J. Scarril, Selby; 3, D. Parnall, Worksop. Guppies: 1, 2 and 3, S. Buchanan, Rainworth. Mollies: 1, 2 and 3, J. Igoe, Rainworth. Plaice: 1, R. F. Senior, Sheffield; 2, I. Heptinstall, Castleford; 3, Mr. and Mrs. Gates, Castleford. Small Barbs: 1, Mr. and Mrs. Cohen, Castleford; 2, J. Charlesworth, Barnsley; 3, Miss S. Gerrard, Alfreton. Large Barbs: 1, J. Skelton, Ind.; 2, M. Woodley, Dukeries; 3, C. Marsden, Worksop. Small Characins: 1, D. Wragg, Alfreton; 2, Mr. and Mrs. F. Buxton, Barnsley; 3, Miss S. Gerrard, Alfreton. Large Characins: 1, D. Sewell, Rainworth; 2, Mr. and Mrs. Batten, Castleford; 3, G. Thickbroom, Castleford. Toothcarps: 1, B. R. Williams, Four Star; 2, M. A. Crowther, Swillington; 3, D. Sides, Chapelton. Danios, Rosboras, Minnows: 1, D. Jackson, Dukeries; 2, Miss S. Gerrard, Alfreton; 3, R. F. Senior, Sheffield. Sharks and Foxes: 1, A. Hurst, Chapelton; 2, J. Scarril, Selby; 3, P. Ponsonby, Ind. Small Cichlids: 1, B. Eyre, Worksop; 2, M. Woodley, Dukeries; 3, R. F. Senior, Sheffield. Large Cichlids: 1, E. Makinson, Ind.; 2, B. R. Williams, Four Star; 3, M. Allsup, Alfreton. Catfish: 1 and 2, D. Ellis, Ind.; 3, P. Reynolds, Dukeries. Loach: 1, D. Jackson, Dukeries; 2, A. Hurst, Chapelton; 3, D. Wragg, Alfreton. Fighters: 1 and Best Fish in Show, D. Kennedy, Bradford; 2, N. Spencer, Bradford; 3, Mr. and Mrs. Gates, Castleford. A.V. Anabantid: 1, Mr. Bradford, Sheffield; 2, M. Woodley, Dukeries; 3, J. Scarril, Selby. A.O.V.: 1, D. Kennedy, Bradford; 2, T. Dickens, Thorne; 3, P. Reynolds, Dukeries. Pairs (livebearers): 1, J. Igoe, Rainworth; 2, D. Sides, Chapelton;

3, P. Reynolds, Dukeries. Pairs (egg-layers): 1, Mr. and Mrs. Cohen, Castleford; 2, S. B. Furniss, Sheffield; 3, Mr. and Mrs. Buxton, Barnsley. Breeders (livebearers): 1, R. Senior, Sheffield; 2, S. Buchanan, Rainworth; 3, H. Lewison, Thorne. Breeders (egg-layers): 1, Mr. and Mrs. Buxton, Barnsley; 2, J. Igoe, Rainworth; 3, Mr. and Mrs. F. Buxton, Barnsley. Juniors: 1, A. Sharpe, Castleford; 2, D. Aiton, Rotherham; 3, G. Thickbroom, Castleford. A.V. Coldwater: 1, E. Fearnough, Chapelton; 2, G. Thickbroom, Castleford; 3, A. Kinson, Ind.

SECRETARY CHANGES

City of Salford A.S.: Mrs. S. McGoekin, 59 Devonshire Street, Higher Broughton, Salford, M7 0BE.
Weymouth and District A.S.: D. Rogers, 149 Deochester Road, Weymouth.
Llantwit Major A.S.: J. Thomson, 12 Yew Tree Grove, St. Athan, Barry, Glam.
Wrexham Tropical Fish Society: F. Oliver, "Revilo," Eldon Grove, Eless Estate, Rhosyllen, nr. Wrexham, Denbighshire.

NEW SOCIETY

A fairly new society is Sutton Hill and District A.S. Formed last October they have a membership of 24, and are already well organised, having had a slide show and lectures. The meetings are held monthly on the first Friday of the month at the Community Centre, Sutton Hill and new members will be most welcome. The secretary is Mrs. Elsie Smith, 33 Singleton, Sutton Hill, Telford. Tel. Dawley 6082.

OBITUARY

Mr. A. G. Jessopp

As we go to press, we regret to report the death of Mr. A. G. Jessopp, Chairman of the Federation of British Aquatic Societies, who died on the 14th July following a heart attack. He had been in hospital just over two weeks. On behalf of all aquarists we extend our deepest sympathy to his wife and family in their sad loss.

AQUARIST CALENDAR

1st August: Stroud and District A.S. Third Open Show, Mid-Glooucestershire Technical College, Stratford Road, Stroud, Glos. Schedules and information from Show Secretary, P. L. K. Treadgold, 15 King's Road, Rodborough, nr. Stroud.
1st August: Chingford and District A.S. Open Show, New Road Methodist Church Hall, New Road, London, E.4. Schedules from Show Secretary, A. Pannell, 9 Pembar Avenue, London, E.17.
2nd August: Blackpool and Fylde A.S., New Venue, Arnold Boys' School, Lytham Road, Blackpool. Schedules from G. Howard, 56 Stamford Avenue, Blackpool from mid-June.
8-11th August: Portsmouth Open Show. Show Schedules from V. B. Hunt, "Caeglar," 120 London Road, Widley, nr. Portsmouth, Hants.
15th August: Harlow A.S. Open Show, Moot Hall, The Stoop, Harlow. Schedules from P. Murdoch, 21 Brooklane Field, Harlow.
16th August: Bedworth Aquarist and Pool Society Open Show to be held at Nicholas Chamberlain Comp. School, Bulkington Road, Bedworth. Show schedules available from K. Edkins, 72 Lister Street, Attleborough, Notts.
16th August: North Scaff A.S. Second Annual Open Show at Meir Community Centre, Uttoxeter Road, Meir, Stoke-on-Trent. Details from K. Balch, 78 Courway Drive, Stoke-on-Trent, ST1 6DU.
16th August: Leigh A.S. Open Show. Details will be announced later.
16th August: South Derbyshire A.S. Members' furnished aquaria show, At the Railway Inn, Midway Road, Swadlincote, Nr. Burton-on-Trent. Open to the public from 7.00 to 8.00 p.m.

22nd August: Yeovil and District A.S. Open Show at Grass Royal Secondary School, Yeovil. Details from D. M. Phinn, 5 Hill Terrace, Bower Hinton, Martock, Somerset.

23rd August: Scarborough and District A.S. First Open Show, St. Saviours Church Hall, Scarborough. Details from Mrs. E. A. Moore, 44 Dale Edge, Eastfield, Scarborough.

20th August: City of Salford A.S. Open Show, Lancaster Hall, Swinton, Lancs.

25th September: Rhondda A.S. Second Open Show at the Rhondda Transport Club, Porth. Details from P. Jenkins, 22 East Road, Tylers-town, Rhondda.

5th September: Yate and District A.S. Open Show at Christchurch Hall, North Street, Dowend, Bristol. Details available from Show Secretary, C. E. Stokland, 20 Barge Close, Chipping Sodbury, Glos.

6th September: Cleveland A.S. third Open Show. Held in British Legion Hall, West Gate, Guisborough, Yorkshire. Show Secretary, Mrs. Avery, 7 Dorset Road, Guisborough, Yorks.

6th September: Weymouth D.A.S. Open Show, Schedules from Mr. T. Hasten, show secretary, 53 Brownlow Street, Weymouth, Dorset.

6th September: Wellingborough and District A.S. First Open Show, Cooperative Hall, Northampton Road, Wellingborough. Schedules from R. Bentley, 100 Park Road, Wellingborough, Northants.

12th September: Hounslow and District A.S. Open Show at Hounslow Youth Centre, Cecil Road, Hounslow, Middx. Schedules from D. J. Woodward, 34 Uxbridge Road, Hanworth, Middx.

12th September: Harwich and District A.S. Annual Exhibition of Tropical Fishes, Queen's Hotel, High Street, Dovercourt, Essex.

13th September: Basing and District Second Open Show.

13th September: Warrington A.S. Third Annual Open Show, St. Benedict's Y.C., Bell Hall, Orford Lane, Warrington. Usual classes. Show secretary: J. Higham, 42 Hood Lane, Sankey, Warrington. Phone 36939.

13th September: Brighton and Southern A.S. Seventh Annual Open Show, Marmion Centre, Marmion Road, Hove. Schedules available from Mr. R. Browning, 34 Rowan Close, Port Slade, Brighton.

19th September: South Staffs. A.S. First Open Show at Joseph Leckie School, Delves, Walsall. Schedules from G. Parker, 134 Alexandra Road, Walsall, or G. Charwood, 161 West Bromwich Road, Walsall.

19th September: Newport (Mon.) A.S. Open Show, St. Johns Parish Hall, Victoria Avenue, Maesteg. Schedules and details available from G. James, 6 St. Peter's Close, Peterston, Wrexham, Mon.

20th September: Four Star A.S. Second Annual Show. Further details available later.

20th September: Stone A.S. Open Show, Walsen Community Centre, Stone, Staffs. Schedules can be obtained from N. Plant, 18a High Street, Stone, Staffs.

20th September: Oldham and District A.S. Annual Open Show, Music Room, Werneth Park, Oldham. Show Secretary, J. C. S. Williams, 3 Queen Street, Shaw, Lancs.

20th September: Four Star A.S. Second Open Show at the Hensworth High School, Station Road, Hensworth. Details are available from J. Rhodes, Show Secretary, 105 Barnsley Road, Hensworth, Yorks.

26th September: Bracknell A.S. Open Show. 26th September: Riverside A.S. Open Show to be held at St. Etheldredas Church, Fulham Palace Road, Fulham, S.W.6.

27th September: Torbay A.S. Annual Open Show. Venue details later.

27th September: Hucknall and Bulwell A.S. Third Open Show. Bulwell Youth Club, Coventry Road, Bulwell, Notts. Schedules from M. T. Harrington, 5, Greenwood Vale, Hucknall, Notts.

27th September: Torbay A.S. Open Show, Torquay Town Hall, Torquay. Schedules from L. Doubleday, 69a Newton Road, Torquay.

27th September: Northampton and District A.S. Schedules available from B. Edwards, 38 Devecote Road, Road, Northamptonshire.