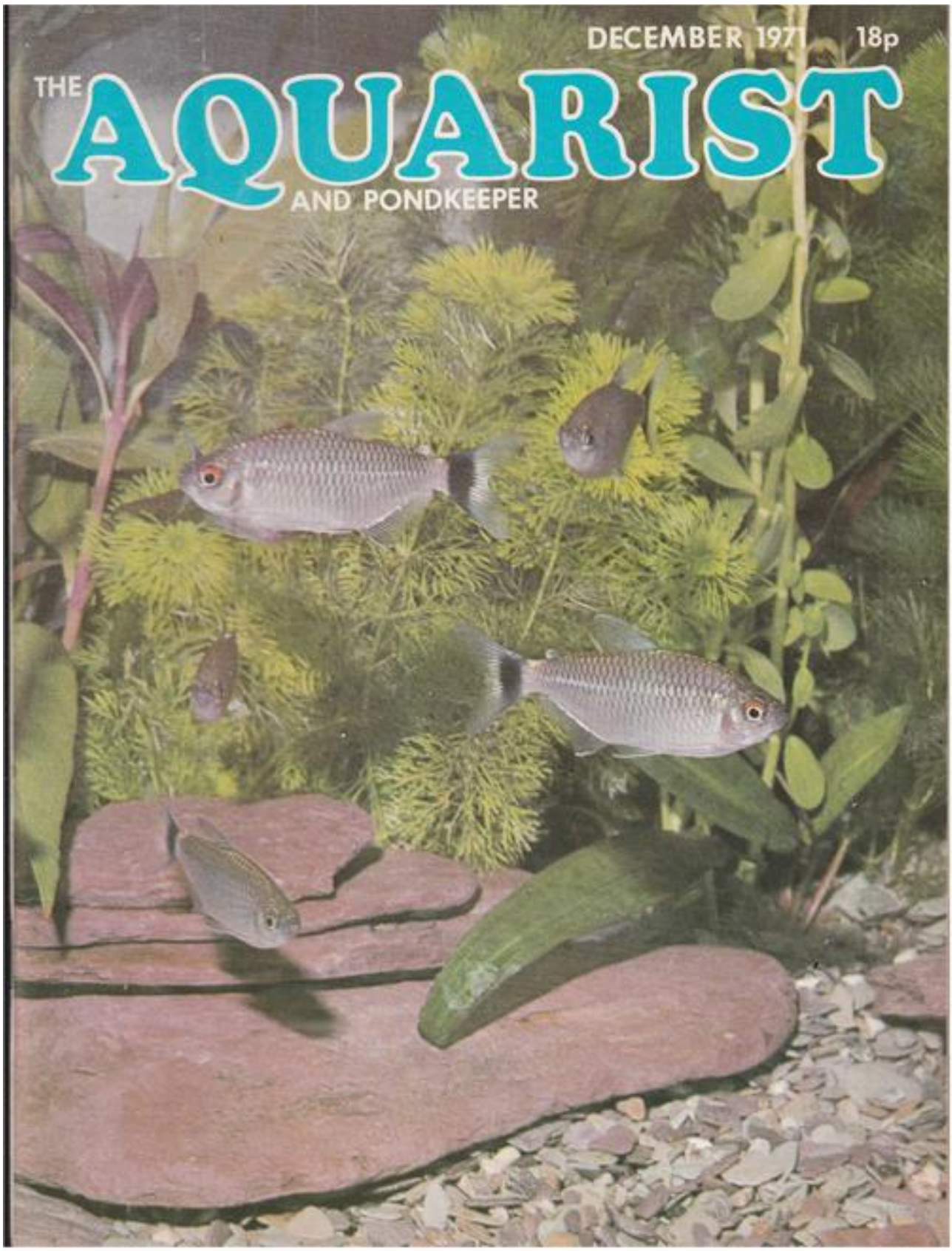
DECEMBER 1971 18p

THE AQUARIST AND PONDKEEPER



THE AQUARIST AND PONDKEEPER

Published Monthly 18p

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Our Cover

Moenkhausia sanctae-filomenae
(see article on page 284)

THE YELLOW-BANDED MOENKHAUSIA

by Jack Hems

THE GENUS *Moenkhausia* is a division of the family *Characidae*. It comprises several species of fishes distributed through most of South America. All are worthy of the attention of the tropical aquarist, but few deserve it better than *Moenkhausia sanctae-filomenae*, popularly called the yellow-banded moenkhausia, a species confined to the Paraguay and Parana river systems. Its size—about 2¾ in. at most—is right for most tropical tanks. And although it is partial to green food, it does not strip a tank of its plants as will some of its congeners. Further, it is quite suited to sharing quarters with other species not too small or too nervous to invite attention. Another point in its favour is that it swims actively in all levels of the water.

The general colour is olive-green to brown on the back, shading to leaden silver on the sides, and silvery white on the belly. The large scales have dark edges. The space between the adipose and rear-end of the anal fin is filled with yellow to gold. Beyond this is a black area that extends halfway to the bifurcation of the caudal fin. The prevailing colour of the fins is grey. The dorsal, anal and ventral fins have white on the edges. The iris of the eye is red above and gold below. In well-grown fish of about the same age, the female is the larger and fuller-bodied of the two.

The yellow-banded moenkhausia thrives best on a diet rich in live food and suitable substitutes for live food as, for example, lean red meat, but readily takes all dried foods. It is a hearty eater and food should be offered to it more than twice a day. Its fondness for green food can be catered for by introducing chopped lettuce or some duckweed into the aquarium every so often. A temperature of 75°F (24°C) is perfectly satisfactory, that is, for general maintenance, with a rise of a few degrees (°F) for breeding.

There is nothing very difficult about breeding this species, but it is important that the tank set aside for spawning should be scrupulously clean. It must also be on the large size (at least 24 in. by 12 in. by 12 in.) to allow for the customary spirited chasing. The water should be neutral to soft and inclining to acidity. A depth of seven to eight inches is about right. And both ends should be furnished with bunched sprays of *cabomba* or, say, *myriophyllum* to catch the eggs. A thin carpet of well-washed grit spread over the bottom to prevent distracting reflections from the glass is advised.

If a previously separated and conditioned pair of fish are transferred to the prepared aquarium last thing at night, a gradual rise in temperature and a good natural or artificial top-light the next day point the way to success.

If all goes as planned, some few hundred eggs will be scattered by the female as she is driven about the aquarium and into the plants. As soon as the spawning-act is completed, and sometimes before it is completed, the fish will do their best to eat their eggs. Therefore it is of supreme importance to keep an eye on their behaviour and get them out of the tank as soon as they stop chasing and start nosing in the plants.

At a temperature in the upper seventies or lower eighties (°F) the eggs hatch in about two days. For the next two days the fry hang on the plants or on the sides of the aquarium, after which they become free-swimming and ravenous for food.

The best food for most fry is alive and microscopic. Thus infusorians drip-fed from a culture-jar are first choice. But crumbs of hard-boiled yolk of egg stirred in a little water until it takes on the consistency of a runny mayonnaise is a good substitute for minute live food. Clearly it is not possible to say how many drops of this mixture are needed day by day, but common sense demands that only two or three drops should be given at a time and then not too frequently. Besides egg-yolk in solution, flour-fine dried food can be given. This too must be fed sparingly to guard against fouling the water with the products of decay.

Roughly nine days from free-swimming, the fry should be large enough to take brine shrimps, micro-worms and other tiny live foods such as *daphnia* small enough to pass through a fairly fine wire or nylon sieve. The fry of *M. sanctae-filomenae* are more shiny silver than their parents and make quite a thrilling sight as they move in a school about their tank.

It is interesting to note that although the yellow-banded moenkhausia was described by Steindachner as long ago as 1907, it was not until 1956 that it appeared in the tanks of the dealers.

WHAT IS YOUR OPINION?

by B. Whiteside

Photographs by the Author

LAST MONTH I was pleased to begin with a letter from America. The first letter this month comes from a young reader in Australia. He is fifteen years old Owen Foley, who lives at 29 Lambert Road, Indooroopilly, 4068, Brisbane, Australia, and we can envy him because the temperature there is such that heaters are only needed in tanks in winter. He raises guppies, mollies and swordtails, out of doors, for more than half the year. He has five tanks. Tropical marines such as Moorish idols, blue tangs, angels, damsels, clowns and wrasses can be caught locally in the sea. In the creeks near his home he has caught 23 species of fishes suitable for the aquarium. They include: silver and tiger scats, Australian rainbows, glass fish, green and orange swordtails, and spotted purple gudgeon. There are 14 species of aquarium plants in the creeks, including *Elodea*, *Vallisneria*, *Potamogeton*, *Nitella*, *Myriophyllum*, etc., but Madagascar lace plants, Amazon swords, and similar "exotic" plants, are almost impossible to obtain there. Owen has found that it is impossible to grow *Sagittaria* and *Vallisneria* in the same tank. He uses undergravel filtration in all his tanks, including his marine tank. I hope we'll hear from Owen again.

At the end of this feature, in the October issue, I mentioned taking part in the first round of a radio quiz. The N. Ireland team defeated Scotland in the semi-finals, and we are having an unexpected trip, at the B.B.C.'s expense, to London, later this month, to do a television broadcast of the final. I hope that I'll have time to visit one or two dealers and this time I'll try to bring a few fish home with me on the aircraft.

Mrs. Susan Brewer writes from 36 Highmill, Ware, Herts., to say that she and her new husband have recently set up a community aquarium with the usual fishes. She also has had an axolotl, called Fred, for seven years, which she keeps in an 18 in. tank decorated with rockwork. Fred immediately uproots any cold-water plants which she adds to his tank. Fred is fed on earthworms, minced beef, liver scrapings and the odd piece of lettuce. He also eats freeze-dried tubifex. She asks if any other readers keep an axolotl, as she would very much like to hear from them. Most people look blank when she mentions axolotls. (I don't think they are very common in N. Ireland but I recently saw one in a teachers' college in Belfast. Do any readers have any comments on this creature, please?).

"Although I have never managed to spawn the Buenos Aires tetra, the female of my friend's pair periodically fills up with roe, but no eggs have been sighted. We presume that the parents ate the eggs as no preparations were made to spawn them," begins 16 years old David Morris, of 28 Melville Road, Maidstone, Kent. His friend and he have managed to get *Cabomba*—both red and green—to flower, on occasions. The plants' tanks received 4-5 hours of light from single 60 watt bulbs. The two lads tried taking coloured slides of their tanks but were relatively unsuccessful; however, they then decided to try cine photography and had "fantastic success". Several of their films were shown at school. They have now edited their scenes into one film showing such fishes as oscars, white convict cichlids, guppies, swordtails, etc. David finds his local dealers to be very co-operative, especially his own employer. A new gadget which he would like to see is a filter which does not disturb the water surface—for tanks in which bubble-nesters are breeding. David ends by saying that he and his friend built a fish house for about £5·00. The "house" was lined with polystyrene from a dealer whose supplies of tropical fishes were insulated with it. The extra expense comes when more tanks are added. The lads have had great success with a variety of fishes. David asks if readers have any advice on feeding white piranhas, and if anyone knows where a high protein food, for rearing young fish, could be obtained. The highest he has been able to obtain is 60 per cent protein but he has heard that a higher percentage food is available. (I suggest that you try "Biol", which is supplied by the Liquifry Co. Ltd., of Dorking. It's a dried plankton culture for young fish and has a minimum protein content of 70 per cent).

Mr. T. Massey, 22 Cypress Gardens, Yew Tree Estate, Walsall, Staffs., sent me a further selection of coloured slides to look at, and once again I was impressed with their quality. He agreed with all my comments on his slides in the August issue. He passes on some tips: if using black and white film he does not now use flash as he has found that there is little contrast and that the results are flat. He uses HP4 film which he considers fast enough to take shots using normal tank lighting. He uses flash with coloured film, as it is slower. He says that one should always

use a tripod and cable-release, shoot at night when the room is dark to cut down reflections, have the flash above the tank, at the centre, pointing downwards, and keep the camera pointing down slightly, away from the flash. He uses floating plants to diffuse the light. Like myself, Mr. Massey uses "Windowlene" spray to clean the glass of the tanks. He says that he cannot grow *Cabomba*, never mind get it to flower. I differ slightly from Mr. Massey in that I always use flash to photograph single fish, and I use FP4 film with flash. For photographs of whole aquaria I use a photoflood bulb of 275 watts, HP4 film, and a tripod. The photograph of the aquarium, planted with *Cabomba*, hairgrass, pennywort and Java fern, was photographed on HP4, using a photoflood and tripod. I have not been using colour recently.

I was pleased to see the excellent photographs and the article by my friend, Jim Dunbar. I first met Jim and his wife through this column, and his enthusiasm for aquarium photography revived my former interest in the subject. Jim's advice, and our Editor's, encouraged me to buy myself the equipment necessary to photograph fish in close-up. I hope to visit Jim again, to see more of his coloured slides, whenever conditions in Belfast have settled down.

Mr. G. Davis writes from 45 Hawley Court, London Road, Maidstone, Kent, and he too would like information on the feeding habits and preferences of white Amazon piranhas. Any opinions, please?

Mrs. D. Austin uses black marine gravel and white coral in her marine tank, and she considers that these more than compensate for the lack of plants. She lives at 10 River Road, Barking, Essex, and asks for readers' opinions on the use and value of ozone in marine aquaria.

From 18 Southdown Avenue, Loundsley Green, Chesterfield, Derbyshire, comes an interesting piece of information. Mr. H. Boot tells us that his 48 in. × 15 in. × 12 in. tank is lighted by a 3 ft. warm white tube, daubed with red enamel, and he says that the plants grow "like mad." He has found that *Cabomba* needs soft water.

"I would say that *Tilapia mossambica* is undoubtedly the easiest of egglayers to breed," writes Mr. T. Straight, from "Red Roofs," Ditton Grange Close, Ditton Hill, Surbiton, Surrey. Since 1969 he has bred this fish fifty-three times. He says that sometimes, when the babies emerge from the mother's mouth after eleven days, he uses them for food for other fish, when he does not wish to raise them for selling to his local dealers.

65 Canterbury Road, Redcar TS10 3QG, is the address of Mr. J. Baxter, who sent me some excellent drawings of his design for an aquarium filter and a light hood. Unfortunately I don't have room to reproduce these. The airlift is made from glass tubing and the filter bed out of a plastic food container with holes bored in the bottom. The base of the container is covered with stones such as gravel, and a layer of sand is placed on top—at least ½ in. of sand. After a few days in use, a film of bacterial "goo" will form on top and this and the sand will remove anything harmful from the water. The filter is washed out once per month, and Mr. Baxter says that one will be amazed at the amount of diverse muck which will evince itself.

T. D. Kearsley is 16 years old, and lives at 13 Newman Street, Higham Ferrers, Northants NN9 8JP. He would like to see, on the market, a pH indicator

Aquarium planted with *Cabomba*, hairgrass, pennywort and Java fern

which did not use bromothymol blue, as he finds it difficult to distinguish between some of the colours, and, hence, the pH values. In the realm of fantasy he would like to see a universal cure for all fish diseases. He has never been able to grow *Cabomba* and thinks that the reason was hard water and calcareous gravel. He thinks that soft water is essential. Master Kearsley wishes that pocket money was easier to come by as he would like to try aquarium photography and keep some Lake Malawi cichlids—which he considers to be beautiful and interesting fish. He asks readers for information, in full, on breeding the Jack Dempsey. He is also confused about water hardness and wonders about the values of different scales. (There are a number of scales—e.g., American, English (Clark), French and German (D.H.). These are expressed in degrees, and each degree represents the equivalent of a certain

Red (left) and Green *Cabomba*

amount of calcium carbonate ($CaCO_3$) in a certain volume of water. Such amounts can be expressed as parts per million (p.p.m.). I would suggest that you stick to the German scale in which 1° D.H. equals 17·9 parts per million $CaCO_3$; thus 1° D.H. is approximately equal to 18 p.p.m., which was the figure about which you asked). Master Kearsley ends by saying: "Keep up the good work. As far as I can see, W.Y.O.? seems to do in writing what a good aquarist society should do in words—exchange intelligent thoughts, ideas and experiences."

Mr. G. Jones writes from 97 Hamilton Road, West Norwood, London, S.E.27, in answer to Mr. Massey's question about mortality rates in fishes (September issue). Mr. Jones says that if many fishes are kept in a large, community aquarium, about three feeding rings are necessary to ensure that fishes which are low in the pecking order get enough food. If fishes are dying in smaller tanks, he suggests that poisonous fumes may be the cause. He has never managed to get *Cabomba* to flower; his work is cut out to get it to grow, possibly because he lives in a hard water area. He asks if those who write about growing plants could state if they live in a hard or soft water area, and whether or not they use undergravel filters. (*Cabomba* seems to be a problem plant to many people. I live in a fairly soft water area, never use undergravel filters now, and can grow *Cabomba* plants over 5 ft. long, in an 18 in. tank. I have had green plants produce flowers. The photograph shows a red plant (on the left) and a green one, kindly supplied by the plant specialist, Mr. D. Smith, of Kidderminster. Unfortunately it would take a coloured print to show the differences. Red *Cabomba* seems to grow as easily as green, and adds an attractive contrast to the decorative aquarium's usual green tones). Mr. Jones asks if anyone knows if a yellow strain of fantail is being bred, as he has only seen red and calico varieties. He thinks that many people would like a yellow strain. He wonders why different books give such widely differing numbers of 1½ in. fish which can be kept in an 18 in. × 12 in. × 12 in. tank. He has seen numbers ranging from 18 to 50 and asks which is correct. Do you have any opinions? (I think that it depends a lot upon the conditions of the particular tank's environment, upon the person who is writing the book, and upon the kind of fish or fishes to be kept. Some guppy experts would probably suggest that 5 or 6 fish were enough in such a tank, if they were to grow under ideal conditions. I would risk up to 30 cardinals in such a tank if it were suitably planted and filtered. I think it's a matter of opinion—and management. What's your opinion?).

"Thank you for a very interesting column," writes Mr. D. Clews, of 359 Blackburn Road, West End, Oswaldtwistle, Lancashire. "I consider other people's experiences and opinions far more useful than a lot of 'experts' articles. It was as a direct result of readers' comments that I purchased a Rena Super air pump a few months ago and it has run continuously since then, operating four undergravel filters and three air stones—sometimes more. I am delighted with it."

Another reader begins his letter: "I doubt if this letter will be shown in your column of *The Aquarist*." I think that he's implying that I operate some form of censorship or bias. I can assure him that I don't! I do have to shorten some letters which would, on their own, take up most of this feature, as I like to include as many views as possible in each issue. I am not including his letter in this issue as, unfortunately, I cannot read his signature—although his address is quite clear. This allows me to again ask readers who send their opinions to keep their letters to a reasonable length and to PRINT their name under their signature.

Aquarium planted exclusively with Java fern

I'm quite good at reading bad writing as the context of a sentence usually makes the meaning clear—but signatures are a different matter. Most of us—myself included—are very careless when we sign our name; so please print your name under your signature. Many letters also have no dates on them and this means that I can't keep them in order: so please date your letters. I'll certainly use this reader's letter if he lets me have his name.

Well, that's all we have room for this month—and this year—and that leads me on to wish all readers A Very Merry Christmas and a Happy New Year. My sincerest thanks go to all of you who wrote to me in 1971; without you we could not run this feature. I hope that 1972 will be a prosperous and peaceful year for everyone—especially for my fellow-countrymen.

For 1972 please let me have your opinions on the following: (1) The final photograph shows an aquarium planted entirely with one species of plant, *Microsorium pteropus* (Java fern). Have you had any experiences of keeping aquaria with only one species of plant? If so, please let me have full details. (2) Let me have your experiences with the breeding of the giant danio—*Danio malabaricus*. (3) What is the earliest edition of *The Aquarist* which you have. Let me know, from its advertisements, the prices of some of the commoner fishes and plants, as it would be interesting to know just how much prices have changed in a given period of time. (4) Under which conditions do you successfully grow *Hygrophila polysperma*? (5) Which new feature would you most like to see in an aquarium magazine? I look forward to hearing from both old and new readers.

Aponogeton stachyosporus

by B. Fry

THIS WATER PLANT from Malaya is so thoroughly interesting and beautiful that I feel bound to express my surprise that it is not more generally cultivated as a centre-piece in the decorative tropical aquarium. The leaves are of a brownish to greenish olive, slightly wavy along the edges, and roughly nine inches and more long by some three-quarters of an inch wide, rounded at the tip and, at the other end, tapering away suddenly to a stout stalk that is produced from a tuberous rootstock. Unless *A. stachyosporus* is planted in shallow water, the stalks and leaves stand erect or grow fountain-wise.

A. stachyosporus can be grown quite satisfactorily in ordinary aquarium compost, but a sturdier and more luxuriant growth will be obtained if its roots are sunk in a pot of lime-free grit enriched with some non-fibrous loam or yellow clay. A fairly high intensity and duration of light is advised.

After this aponogeton has rooted well and made good growth arching stems will arise from the crown. These stems bear small fibrous tubers from which leaves sprout and roots grow. When these baby plants have attained a height of about three inches, that is from the tuber to the tip of the leading leaf, they may be detached from the parent plant and potted up or anchored in the bottom compost.

THE BRITISH AQUARISTS' FESTIVAL

—1971—

by A. Boarder

THE ANNUAL EXHIBITION was held at Belle Vue, Manchester, on 9th and 10th October, and as usual proved a huge success. Having written about these shows since 1951, I find it very difficult to choose adequate words to describe the whole scene. Each year it seems that saturation point has been reached with regard to the numbers who attend but this year, especially on the Sunday, there were far more visitors than ever before. It was very difficult to estimate the attendance as although the large hall was packed most of the day, many people has been inside the hall and left to visit the zoo and pleasure grounds. It seemed that as many people were going out as were coming in during the afternoon.

In addition to the usual bar and buffet there were two extra ones in the adjoining hall with plenty of space for all, especially the children who found it a fine playground. It is surprising to what extent the exhibition interests so many people as many had come from overseas and more than ever this year had travelled from Scotland and Ireland. It is apparent that many aquarists make this an annual pilgrimage and one wonders where all the people come from. There is no doubt that one of the main attractions for the visitors is the wonderful display of stands put up by the various Aquarist Societies. Every year these Societies make a grand effort to construct an attractive display. This form of show is so different from the usual type with rows and rows of tanks with a fish or two in. This will attract the true aquarist but is not a very interesting sight for the visitors, be they the families of aquarists or just people with no special bent for fishes.

Many of the stands were most attractive and it must be difficult for the Societies to think up something new each time. Fortunately there is always a few who think up something fresh and this year was no exception. The winning stand constructed by the Northwich and District Aquarist Society was the finest stand I have yet seen at Manchester. This took the form of an Army tank and I have never seen any stand with such a splendid finish. Much thought and work must have gone into the construction. This tank was a fine imitation and was complete with a gun which flashed as if being fired and even the necessary tools were added to complete what I consider to be the finest stand ever exhibited at Belle Vue. The first prize of £50 was well deserved. The second prize went to Southport Aquarist Society, with a replica of a bar, complete with a model barmaid. The miniature tanks in small barrels, etc., added to the attraction of the stand. Third prize was won by Loyne Aquarists Society with a stand depicting many games, such as ludo, snakes and ladders, bingo, draughts, dice and snooker. The fourth prize went to Oldham and District with an attractive stand set out in the form of a jig-saw puzzle with a picture of a furnished tank.

There were several other stands which were well thought out; even a Western scene with a stockade entitled the "Land Stand," showing the after-effects of an Indian attack. Rochdale Society exhibited their fishes on a stand representing a petrol station and Sheffield stand was in the form of a country cottage with a thatched roof. Mount Pleasant Society stand was in the form of an open book and Stretfords took the shape of a large dice.

After all the years this type of exhibition has been

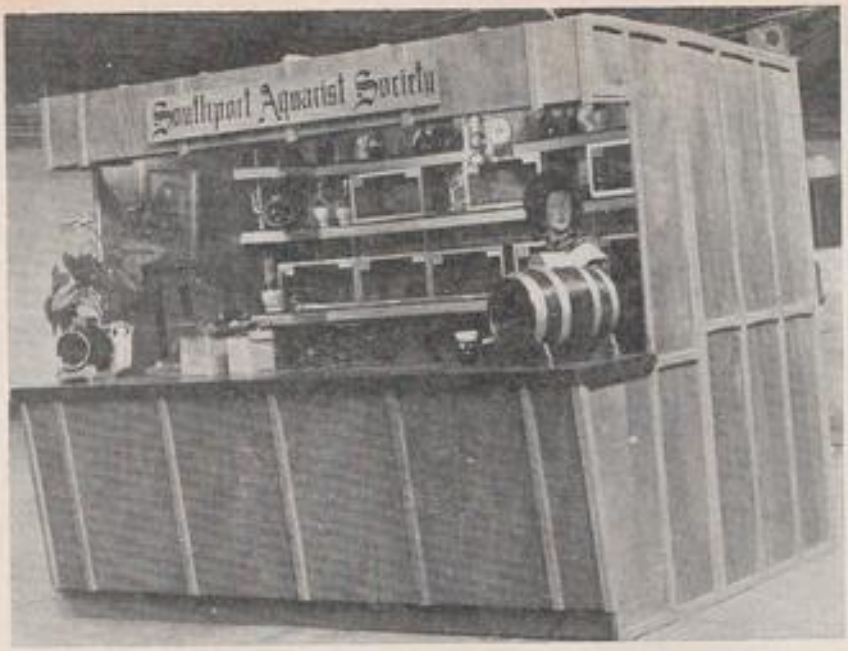
The excellent finish of the winning stand can be seen in this photograph of Northwich & District Aquarist Society's entry

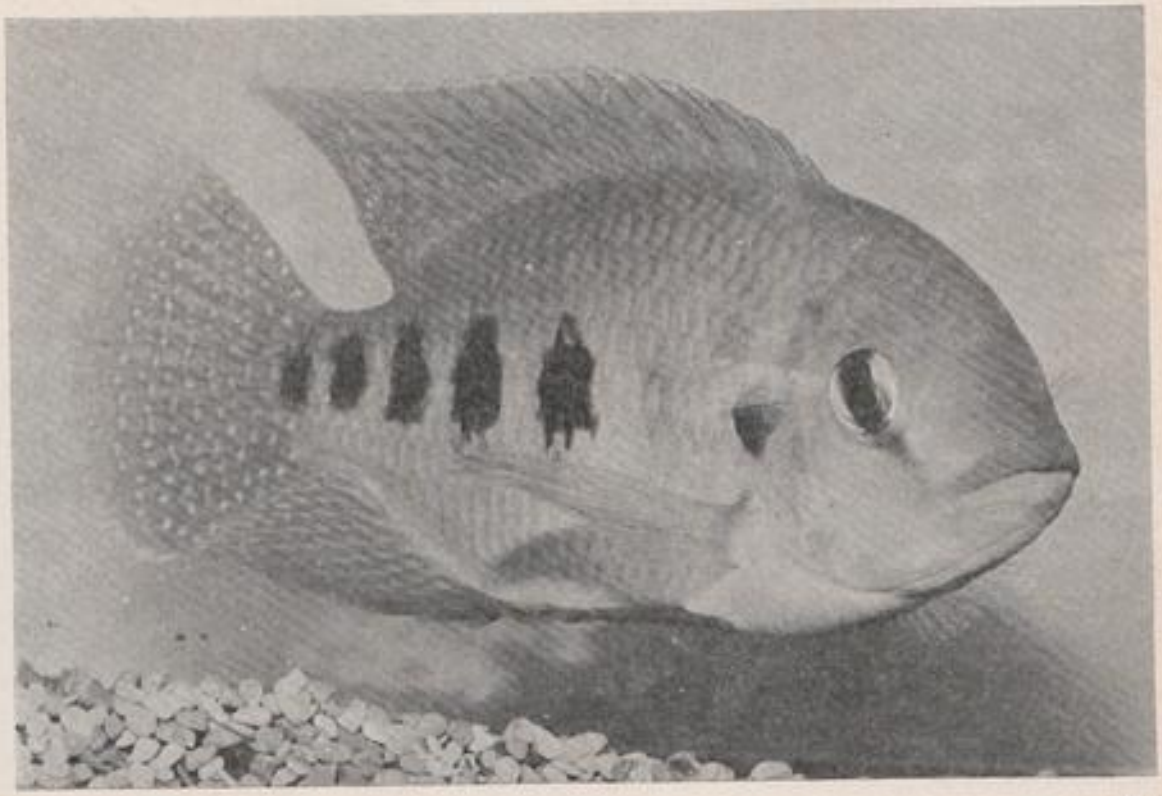
running it must be very difficult for the Societies to think up something original, but when all is said it is only through the hard work of all the exhibiting Societies that this show is such a great success. Although there is plenty to interest the casual visitor, the true aquarists could find many fishes to examine and admire. There were many fine tropicals present on most of the stands but the coldwater section still needs more enthusiasts to bring the numbers of really good fishes up to the standard seen soon after the last war. It was noticeable and gratifying to see the increase in numbers of marines, not only on the dealers' stands, but also exhibited by different Societies. Some of the furnished tanks were very attractive and these are the ones which interest the casual visitors.

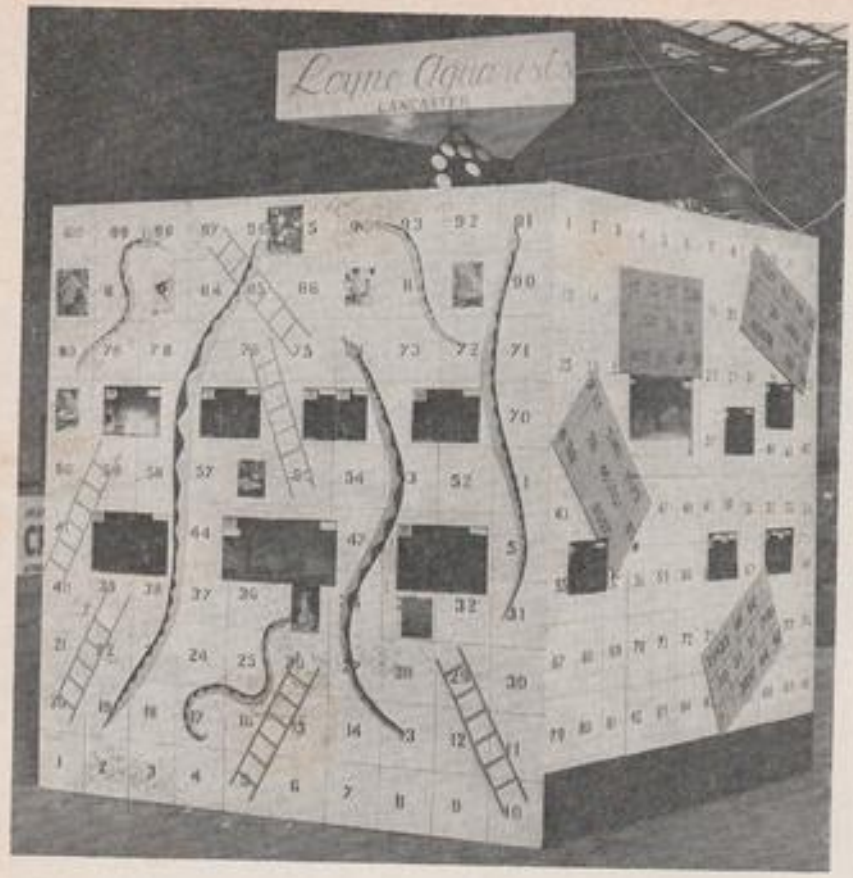
The "Champion of Champions" exhibits were, of course, the centre of attraction and a large crowd was usually to be seen examining them. There were many fine tropical fishes on view but where the were coldwater specimens? Things in this side of the hobby have come to a sad state when among thirty-five exhibits there were only three coldwater fishes; a Sunfish, an Oranda and a fish of the title of a Calico Fantail Goldfish but which looked anything but this to my viewing. When one realises that at a London exhibition in 1950, a class for Fantails attracted thirty-three entries, one wonders what has happened to the coldwater enthusiasts of years ago. The winner in the "Champion-of-Champions" class was a Tinfoil Barb, a fish in fine condition, the second was a Mylossoma and the third a Siamese Tiger; leaving nothing for the coldwater and no small tropical was in the cards.

Once again the dealers surpassed themselves by providing many stands with a vast selection of accessories for the aquarist and also thousands of fishes were for sale. Most of the time the exhibition was open it was difficult to get near to some of these stands and at times buyers were four deep along the front of the display by the dealers. In fact, trade was so brisk all day on Sunday that some dealers were very loath to stop selling at 6 p.m. when the exhibition officially closed. However, others were not so sorry as they had a long way to go after packing up.

I feel sure that the Federation of Northern Aquarium Societies in collaboration with *The Aquarist and Pondkeeper* were well pleased with the attendance and appreciation shown by so many visitors. Arrangements are already taking place for next year's exhibition which will be looked forward to with eagerness by many aquarists.


Southport Aquarist Society



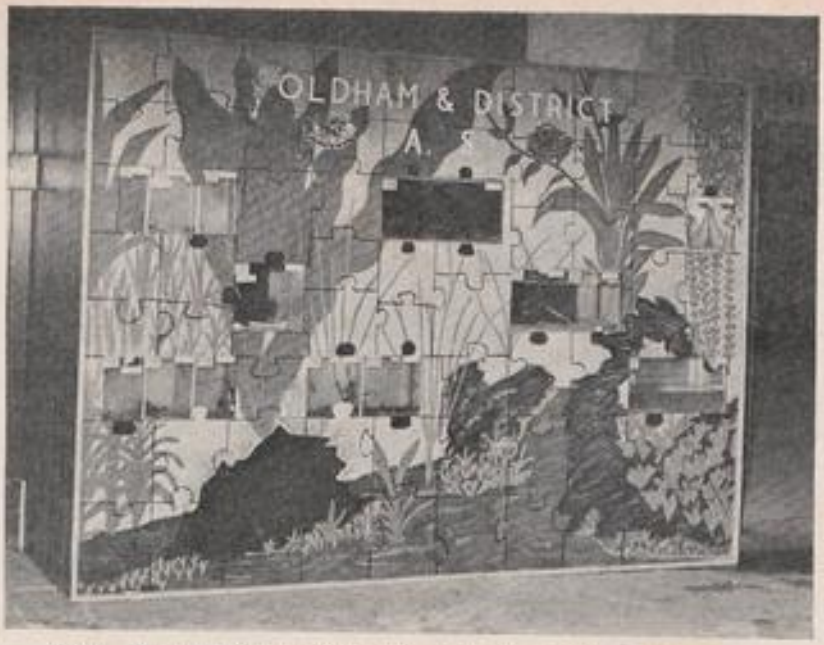


Top left. Second prize-winning stand by Southport Aquarist Society

Left. 'Best fish in the show,' a Five Spot Cichlid (*Hemichromis fasciatus*) owned by Mr. & Mrs. A. Wilkes

Above. Third prize winning stand entered by Loyne Aquarist Society

Right. Dr. Wilkinson presenting cheque for best society stand



Above. Oldham & District Aquarist Society's stand which won fourth prize

Below. Mr. E. Smith being presented with his award for his champion of champions by Dr. J. F. Wilkinson

Below. Dr. J. F. Wilkinson presenting the trophy for the best fish in the show to Mrs. A. Wilkes

CHAMPION OF CHAMPIONS

Competition Results

1st	2nd	3rd
E. SMITH	K. PARKES	E. Dean
Sheffield A.S.	Merseyside	Chester A.S.

RESULTS OF OTHER FESTIVAL COMPETITIONS

Best Fish of the Show: Mr. and Mrs. A. Wilkes (Middleton) 86 pts. Best Tropical Fish: Mr. and Mrs. A. Wilkes (Middleton). Best Coldwater Fish: H. Penhall (Osram) 79 pts. Best Other than Best Fish in Show: 1, K. Parkes (Merseyside) 85 pts.; 2, Mrs. M. Cobb (Belle Vue) 78 pts.; 3, H. Penhall (Osram) 79 pts. Best Society Furnished Aquarium—Tropical: 1, Halifax 74 pts.; 2, Aireborough 73 pts.; 3, Bury 72 pts. Coldwater: 1, Osram 61 pts.; 2, Accrington 58 pts.; 3, Northern Goldfish 54 pts. Best Individual Furnished Aquarium (Tropical): 1, L. Thorne (Northwich) 73 pts.; 2, R. Shanks (Mount Pleasant) 72 pts.; 3, J. Robertson (Mount Pleasant) 71 pts.; Best Individual Coldwater Furnished Aquarium: 1, D. Shields (Halifax) 75 pts.; 2, T. Mills (Bury) 70 pts.; 2, H. Penhall (Osram) 65 pts. Best Aquascape: 1, N. Hadley (Blackpool); 2, J. Thompson (Belle Vue) 74 pts.; 3, H. Penhall (Osram) 71 pts. Novelty Aquascape: 1, J. S. Brearley (Belle Vue) 82 pts.; 2, J. Eyres (Ashton-under-Lyne) 79 pts.; 3, Merseyside 77 pts. Common Goldfish and Comets: 1, H. Penhall (Osram) 79 pts.; 2, W. Ramsden (Northern Goldfish) 76 pts.; 3, Mrs. Mathews (Northern Goldfish) 73 pts. Shubunkins: 1, B. M. Rothwell (Northern Goldfish) 75 pts.; 2, C. H. Whitsey (Accrington) 73 pts.; 3, N. S. Farrall (Northern Goldfish) 71 pts. Moors: 1, B. M. Rothwell (Northern Goldfish) 72 pts.; 2, W. H. Ramsden (Northern Goldfish) 71 pts.; 3, C. H. Whitsey (Accrington) 68 pts. Veiltails: 1, W. H. Ramsden (Northern Goldfish) 74 pts.; 2, C. H. Whitsey (Accrington) 72 pts.; 3, A. Barry (Hyde) 69 pts. A.O.V. Fancy Goldfish, Fantails, Orandas, Lionheads and any "New" Variety: 1, H. Penhall (Osram); 2, S. Hall (Aireborough); 3, N. S. Farrall (Northern Goldfish). Any species of Goldfish other than those above: 1, S. Hall (Aireborough) 74 pts.; 2, C. H. Whitsey (Accrington) 73 pts.; 3, H. Penhall (Osram) 72 pts. Guppy (Single): 1, Mrs. M. Cobb (Belle Vue) 78 pts.; 2, Mr. and Mrs. Ormesher (Sandgrounders) 73 pts.; 3, R. Tomkinson (Glossop) 70 pts. Guppy (Pairs): 1, Mr. Hesketh (Accrington) 76 pts.; 2, J. Peck (Loyne) 72 pts.; 3, D. Glen (Bury) 60 pts. Livebearers: A. Beasley (Bury) 76 pts.; 2, Wood and Nixon (Sunnybrow) 73 pts.; 3, N. R. Gibson (Huddersfield) 71 pts. Livebearers (Pairs): 1, J. Broadhead (Huddersfield) 77 pts.; 2, B. Pearson (Sunnybrow) 75 pts.; 3, Mr. and Mrs. Ormesher (Sandgrounders) 73 pts. Angels (Single Fish): 1, D. Trace (Ashton-under-Lyne) 72 pts.; 2, P. Andow (Stretford) 71 pts.; 3, M. T. Smith (Sheffield) 68 pts. Angels (Pairs): 1, N. R. Gibson (Huddersfield) 72 pts.; 2, E. Muncaster (Mount Pleasant) 66 pts.; 3, M. Barton (Southport) 60 pts. Dwarf Cichlids (Single): 1, Mr. and Mrs. Cooper (Bury) 76 pts.; 2, N. Peterson (Merseyside) 74 pts.; 3, K. Hardie (Stretford) 73 pts. Dwarf Cichlids (Pairs): 1, Mr. and Mrs. Ashton (Middleton) 73 pts.; 2, J. Robertson (Mount Pleasant) 72 pts.; 3, A. Alan (Hyde) 68 pts. Cichlids A.O.V. (Single): 1, Mr. and Mrs. A. Wilkes (Middleton) 86 pts.; 2, D. and R. Standen (Loyne) 76 pts.; 3, P. Kenyon (Belle Vue) 75 pts. Cichlids A.O.V. (Pairs): 1, M. Thompson (Southport) 69 pts.; 2, Mr. and Mrs. Carson (Ashton-under-Lyne) 67 pts. Fighters: 1, P. D. Robinson (Bradford) 74 pts.; 2, Master F. Cobb (Belle Vue) 73 pts.; 3, P. D. Robinson (Bradford) 72 pts. Gouramis A.V. and Paradise (Single): 1, M. T. Smith (Sheffield) 76 pts.; 2, L. Thorne (Northwich) 75 pts.; 3, W. Catterell (Stretford) 73 pts. Gouramis A.V. and Paradise (Pairs): 1, G. W. and A. K. Jackson (Belle Vue) 77 pts.; 2, D. Buckley (Rochdale) 68 pts.; 3, M. Killgallen (Wigan) 65 pts. Barbs (Single): 1, F. Gregory (Oldham) 79 pts.; 2, Abel and Bowling (Sunnybrow) 77 pts.; 3, K. Parkes (Merseyside) 75 pts. Barbs (Pairs): 1, J. A. Whiteley (Aireborough) 77 pts.; 2, F. Gregory (Oldham) 72 pts.; 3, Mr. and Mrs. Grimshaw (Sunnybrow) 70 pts. Characins (Single): 1, K. Parkes (Merseyside) 85 pts.; 2, D. Kennedy (Bradford) 79 pts.; 3, K. Parkes (Merseyside) 76 pts. Characins (Pairs): 1, J. Robertson (Mount Pleasant) 77 pts.; 2, G. W. and A. K. Jackson (Belle Vue) 75 pts.; 3, F. Buxton (Aireborough) 72 pts. Carps or Minnows A.V. (Single): 1, Mr. and Mrs. Ashton (Middleton) 76 pts.; 2, D. Heen (Bury); 3, J. Dawson (Osram). Carps or Minnows A.V. (Pairs): 1, T. Bailey (Northwhich) 68 pts.; 2, A. Gleave (Stretford) 64 pts. Catfishes (Single): 1, R. Taylor (Aireborough) 84 pts.; 2, L. and P. Graham (Loyne) 79 pts.; 3, B. Parkin (Ashton) 76 pts. Catfish (Pairs): 1, H. Buckley (Northwhich) 77 pts.; 2, A. R. Davies (Belle Vue) 74 pts. Egglaying Tooth Carps (Single): 1, L. G. Greenhall (Tadcaster) 78 pts.; 2, J. Burton (Huddersfield) 77 pts.; 3, B. Bowden (British Killifish) 76 pts. Egglaying Toothcarps (Pairs): T. Mathias (B.K.A.); 2, A. Brown (B.K.A.); 3, T. Mathias (B.K.A.). Loach A.V.: 1, E. Seymour (Merseyside) 78 pts.; 2, R. Tomkinson (Glossop) 74 pts.; 3, F. Mulla (Merseyside) 72 pts. A.V. other than classes above: 1, A. Gleave (Stretford) 71 pts.; 2, N. Peterson (Merseyside) 70 pts.; 3, C. Britton (Ashton-under-Lyne) 68 pts. Breeders (Egglayers): 1, R. Tomkinson (Glossop) 80 pts.; 2, F. Buxton (Aireborough) 77 pts.; 3, J. Higgins (Oldham) 75 pts. Breeders (Livebearers): 1, R. Wilkinson (Halifax) 75 pts.; 2, W. and I. Ross (Belle Vue) 70 pts.; 3, N. R. Gibson (Huddersfield) 65 pts. Breeders (Coldwater): 1, N. S. Farrall (Northern Goldfish) 75 pts.; 2, M. Rothwell (Northern Goldfish) 74 pts.; 3, R. L. Howarth (Northern Goldfish) 73 pts. Plants: 1, J. Thompson (Belle Vue); 2, A. Beasley (Bury) 76 pts.; 3, M. D. Berry (Valley) 63 pts. Marine (Furnished Aquaria): 1, E. Pinch (Sandgrounders) 61 pts.; 2, Abel and Bowling (Sunnybrow) 60 pts.; 3, G. Fairclough (Bradford) 55 pts. Marine Fish (Single): 1, Mr. and Mrs. Ormesher (Sandgrounders) 82 pts.; 2, R. Atherton (Mount Pleasant) 78 pts.; 3, D. Chambers (Hyde) 72 pts. Marine Fish (Pairs): 1, R. Atherton (Mount Pleasant) 70 pts. Special Prize to the Exhibitor gaining most awards in the Breeders Sections: R. Tomkinson (Glossop). Society whose members won most points for its four Highest Pointed awards: Belle Vue. Individual Exhibitor gaining most awards: A. Penhall (Osram). Best Society Stands: 1, Northwich; 2, Southport; 3, Loyne; 4, Oldham.

CORK IN THE AQUARIUM

by P. G. Boud

FOR THE AQUARIST who is primarily interested in the decorative aspects of the aquarium rather than breeding or exhibiting fish, the search for suitable materials and objects is an interesting pursuit in itself.

The horrors and gimmicks it is possible to acquire are many and various, ranging from hair-streaming nymphs and sunken treasure boxes to the heights of relative sophistication such as plastic plants which, considered aesthetically, are more appropriate for a stall at Blackpool than for an aquarist tank.

In recommending materials, cognizance has to be taken of people's assumptions as to what constitutes an harmonious, decorative scheme. People's predilections vary so much. For example, this can be seen particularly with the choice of plants. Some maintain that the furnished aquarium is more attractive if the choice of plants is limited to no more than three species; others prefer the effect produced by the mass grouping of one species of plant.

This raises the matter which, for want of a better term, may be referred to as the purist habitat question and the possible reaction to the use of cork. Adherents of the purist point of view deprecate the typical mixed planting and community fish-keeping, and make disparaging remarks about incompatibility and keeping a museum of plants and fishes rather than creating a specific habitat where the aquascape, fish and plant species are representative of one area. These purists would probably object to cork as being artificial when used for aquatic decorative purposes, but let us not be dissuaded by these and press on.

Cork under aquarium conditions has the unique property of appearing almost rock-like, more rock-like than the natural look of rock. This is a considerable advantage over the recent fashion in aquatic circles of using coal. Coal, to the writer, just looks like coal in the aquarium, and observers have remarked rather heavily "I see you're keeping coal in the aquarium now—haven't you anywhere else to keep it? I suppose the coal cellar is full of tanks now instead." Perhaps the affect was due to the inferior nutty type used, as the large, shiny, jet-black lumps of steam-raising coal were unavailable. However, cork is extremely effective from the decorative aspect; with its deep uneven fissures, cracks and rugate forms, together with its warm, reddy-brown tints shading off into black; the appearance is suggestive of worn time-weathered rock—at the fraction of the cost of special decorative rock sets.

Obviously, the difficulty experienced when using submerged cork is its buoyancy, some have given up after it has floated to the surface for the umpteenth time having broken away from the insecure anchoring arrangements. To overcome this, the writer has used two methods, one for the rear vertical arrangements and the other for terracing in front. For rear arrangements, using the cork vertically, the cork is measured and cut to the inside height of the tank, i.e., the distance between the bottom glass and the top frame angle. The gravel is then cleared away from the rear and the cut cork piece is eased in and wedged under the top angle. The gravel is then piled back against the base of the vertical wedged piece of cork. It will be found to remain quite firm without tending to become dislodged. This avoids the need to fasten it to the glass with adhesive, and permits the backing to the aquascene to be changed easily.

For horizontal use, or terracing arrangements, when it is desired to use small pieces of cork in receding tiers, it is obviously necessary to adopt some method of anchoring. To this end, the easiest and least expensive material which is probably already to hand is natural rock. The best way of attaching the cork to the rock is with the adhesive "Araldite." However, to facilitate the choice of what may appear to be a suitable piece of rock, it is advised that the rock and the cork are placed in a plastic bag with the top turned over several times and secured with paper clips to prevent ingress of water. This can be done with rock pieces until a suitable piece having sufficient weight to overcome the buoyancy is found. This may appear to be making heavy weather over apparently quite a simple matter, but this method has the added advantage over tying the rock and cork together with wire and dropping it into a bucket to see if it sinks or floats, in that the cork is kept dry. This is essential for the jointing of the rock to the cork with the Araldite; otherwise it means waiting for the cork to dry out each time after the trial immersion before using the adhesive.

Pieces of rock cut from vertical cork sections used in decorating the rear of the tank can be utilised in constructing small gravel-filled containers which can also be placed at the back of the tank between the vertical cork sections yet in front of rear banks of *Vallisneria*

or *Sagittaria* plants.

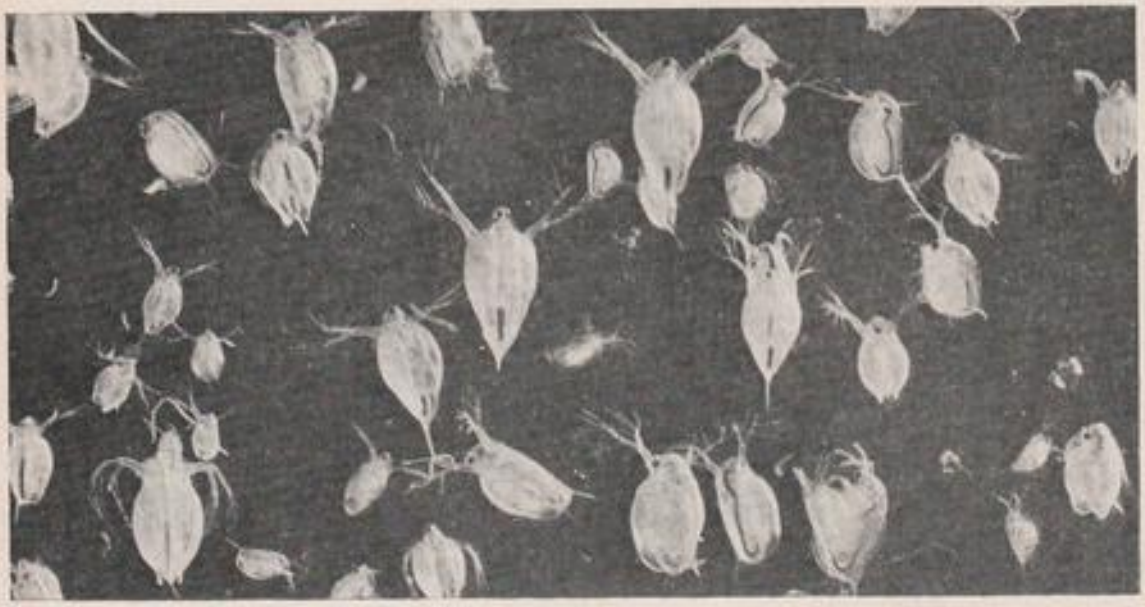
The arrangement is quite effective, but in order to avoid burying plants under three or four inches of gravel (which would inevitably trickle away from both edges of the cork if it is used as cut), it is necessary to construct a segment-shape container. This is simply done by using two flattish pieces of rock; one is stuck to the curved edge of the cork and forms the base, the other is stuck to both edges in a vertical position, forming the back of the container.

After twenty-four hours in a dry atmosphere, the containers can be positioned in the tank. It is advisable to place a small piece of rock between the rear glass and the rock back of the container to allow room for the plants to grow and to avoid the container from pressing the plants against the rear glass.

Alternatively, the container can be planted with hairgrass, dwarf rush (*Acorus pusillus*) or some of the small-growing species of *Echinodorus* or Cryptocorynes.

Maintain the cork in its pristine condition in order to preserve the original effect. The best way of defeating the blue-green filamentous algae to which cork seems particularly prone is by means of a hard, dental-plate cleaning brush with an oblique tuft.

The use of cork is well worthwhile to enhance the aesthetic appearance of community or decorative tanks, at little expense.



Daphnia

by Jack Hems

Daphnia and species of related genera are primitive crustaceans popularly known as water-fleas. They occur in most fresh waters. There are several species of *Daphnia* native to Britain. The largest attains a length of about ½ in. Its formal name is *D. magna*.

As a rule, water-fleas of some sort or another are common in field ponds; for field ponds are almost always rich in free-floating *algae* and other microscopical forms of life (protozoan and bacterial) on which water-fleas feed.

The typical water-flea is roughly egg-shaped, but flattened from side to side. The head is large and bears two movable antennae. Between the antennae, which are used for swimming, is a large eye. The thoracic limbs are equipped with bristles. These bristles gather in and filter the living food before it passes into the mouth. At the bases of the limbs are sac-like processes which function as gills. The body is almost enclosed in a transparent shell or horny coat. This horny coat is renewed periodically. Thus, during the life of a water-flea there are a series of moults.

A pouch or receptacle for storing eggs is located in the hind part of the shell. The eggs are of two kinds: soft-shelled summer eggs and hard-shelled winter eggs. The soft-shelled eggs hatch into female water-fleas which, after they have been released from the pouch, go on to produce, every so often, more soft-shelled eggs. All this is achieved without the intervention of a male. But as the long, warm days give way to

autumn's chill, male water-fleas show up in every brood. These autumn-born male *Daphnia* fertilise the winter eggs which, cast off in a tiny purse called the ephippum, lie dormant until the following spring. Then they hatch into female water-fleas which subsequently repeat the cycle all over again.

Freshly hatched water-fleas are one of the best forcing foods for fry beyond the infusorian stage. And there is no question that large *Daphnia* provide the right sort of nourishment for all the fishes we are likely to keep in the home aquarium. But a word of warning. Every bag of *Daphnia* obtained from a dealer (or collected in the wild) should be held up to the light and closely inspected for leeches and other pests; for all sorts of nasty little creatures live in the water in which daphnids flourish best. Yet it is not too difficult to cultivate *Daphnia* under controlled conditions.

As will be readily realised, the larger the container for breeding the crustaceans the better. An old kitchen sink is large enough to keep a small culture going. It should be in a position where it receives a bright light. Although oxygenating plants are not absolutely necessary, their presence does help to keep the water-fleas healthy.

Slices of raw turnip or overripe fruit or the droppings of poultry or cavies should be introduced into the container every now and again to maintain the supply of microscopical food. Provided the decaying matter is not overdone, the water-fleas will multiply rapidly from about March to September. (Artificial heat to maintain a temperature in the sixties (°F) will keep them going all the year round.) But overdo the decaying matter and the water will lose all its oxygen and the *Daphnia* their lives.

THE DWARF GOURAMI

Written and Illustrated by Billy Whiteside

SINCE I WROTE my last W.Y.O. column, I decided to risk a trip to a Belfast aquarium shop to buy myself a few new fish. Amongst those which took my fancy were two tanks containing the Dwarf Gourami—*Colisa lalia*. One tank contained fully-grown fish, the other fish which were about three-quarters grown. I decided to buy a pair of the younger fish, as they were slightly less expensive, and I get more pleasure from raising a pair of young fish to maturity than from buying and keeping a fully-grown pair.

I chose a male and female fish from the collection of about twenty in the tank; all of them were showing good colours and were in good shape. When I bought the fish I had no thoughts at all of trying to breed them. I only wanted a pair of attractive, smallish fish to place in an unpopulated, but well-planted, 18 in. × 10 in. × 10 in. tank.

It was about five years since I had last kept Gouramies—some of the larger species—and I had never before kept the Dwarf Gourami which, like other members of the Anabantidae including the fighting fish, have a special labyrinth organ by which they can take oxygen directly from the atmosphere, as well as "breathing" normally via their gills, as the majority of fishes do. When I got my chosen pair of fish home I introduced them into their new aquarium, where they settled down immediately and began feeding on flake-food.

The male fish was a really gorgeous specimen, about 1½ in. long, with a flattened, oval body, brilliant orangy-red in colour, with a pattern of greeny-blue splashes and dots. The breast was a silvery-blue colour; the eyes a pale orange on the outer rim, with a vertical black bar and a black pupil. The colours seemed to change in both shade and intensity, depending upon the angle at which the light struck the fish as it swam around the tank. The female was more rounded than the male, and had much less colour over her body. She was rather dull in comparison.

After about two hours in the tank, I was interested to see the male forming a couple of patches of bubbles at the water surface. I felt rather sorry for him, considering that he was practising bubble-nest building for some future date which was, according to my opinion, far off. When I went to switch off the lights that night I noticed that the male was still engaging in his bubble-blowing exploits. At this stage the female was not to be seen and I assumed that, as these peaceful fish are shy by nature, she was just hiding

out of the way amongst the plants. Obviously she knew, better than I, what was ahead.

Next morning I still could not see the female, but noticed that the male had now begun to collect pieces of dead plants' leaves and stems, and was arranging these on the water surface, in a corner of the tank. He was also blowing bubbles which floated up into his obvious bubble-nest. I soon saw him dash off into the plants at the back of the tank and chase the female out into the open. The peaceful, shy male had, by now, turned into a virtual sexual maniac. He dashed round and round the tank after the poor female, prodding her sharply with his snout in the region of her vent. A close examination revealed that she was dropping numbers of eggs during each vicious attack. After each egg-dropping session the male chased her for a few seconds and then returned to the sinking bubble, the egg from which he took into his mouth and quickly added to the nest again, surrounded by a new bubble. He was still not content and kept chasing and prodding the female round the tank until her fins were badly torn. Still more eggs were released and added to the nest over a period of days. Two days after the first eggs had been laid the babies hatched. The fry were absolutely minute and one had to look carefully to see even a few. They clung on to plants' leaves, just beneath the nest. The male would take the occasional one and blow it back into the nest. Two days later several baby fish were seen poised under the 40 watt bulb, over the centre of the tank. On the following day there were many babies in this centre spot under the light. As I was at work each day, I was unable to observe the exploits of the male with the female but the nest did not seem to get any smaller in

Male Dwarf Gourami

eggs. He moved quickly and gathering each egg in turn, took it into his mouth and rushed back to his nest. Here he released the egg, surrounded by a bubble, and it floated up into place in the nest. (The Dwarf Gourami, which originates in India, produces a coating of saliva round each bubble, and this helps prevent the bubble, with its egg, from bursting when it enters the nest.) He usually did not manage to collect all the eggs which the female released and some of these fell to the aquarium floor and got lost in the gravel. As soon as he had added several eggs to the nest, he was off again, after the female, and the process was repeated. There was certainly no tenderness in his advances!

The bubble-nest grew in size until it was about 3½ in. × 2 in. × 1 in. high. When the male was not chasing the female, he was patrolling beneath and around the nest, and was quick to spot any bursting size and more eggs seemed to have been added. The male kept up his patrol under the nest and the female kept well hidden amongst the plants.

I don't think I have ever seen such small baby fish; they were absolutely minute—yet, when the male came near them, under the light, they shot off at a fantastic speed, considering their size. When the first fry became free-swimming I tried to obtain some Liquifry food locally but was unable to get any. Each morning, when I put on the tank lights, there were but a few baby fish visible, but at lunch time there were dozens of babies under the light. I don't know whether these were the same babies, or whether the previous day's ones had died and been replaced by new ones. The babies were so small that I was unable to count them but I would estimate that there would have been at least sixty at any given lunch time.

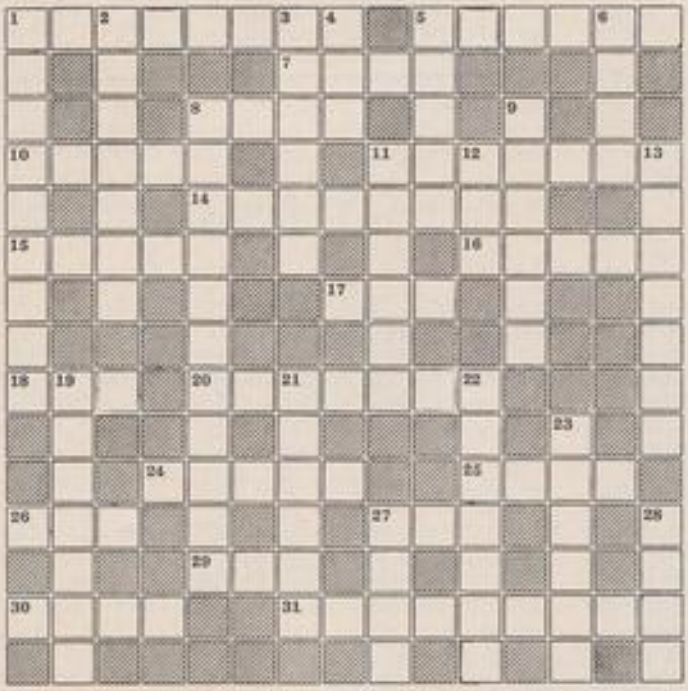
I have been adding appropriate amounts of three

different types of fry food, in the absence of Liquifry and infusoria. The foods I have been using are TetraMin Baby Fish Food for Egglayers, Biol dried plankton culture, and Miracle Fry Treet. Each of the foods, although very fine, still seem to be rather large for the minute babies. As I type this, seven days after I purchased the parents, the male is still guarding his large bubble-nest, the female is still in hiding, and there are about sixty baby fish beneath the light bulb. The books tell me that such small fry are very difficult to raise, and I can quite believe this as they are so tiny. Unfortunately, I had no idea that the fish would spawn, and was not prepared with the most suitable types of food. I don't know, as yet, whether or not any of the babies will survive, but I am just letting things take their own course, and hoping that the Biol food will, by now, be producing, or encouraging the production of infusoria which will be suitable for the babies.

I'm afraid that I cannot claim to have much experience in the breeding of egglayers as I have been more interested in livebearing fishes, and my pair of Dwarf Gouramies just happened to be in breeding condition when I bought them. Obviously the tank into which I placed them was to their liking—temperature 78°F, water about pH 7·0 and D.H. 6°, but I did get my camera out and photographed the male and some of the babies.

One thing has struck me from these experiences and that is the amazing wonder of Nature in that the Dwarf Gourami, with its tiny brain, has such wonderful instincts. I think it fantastic that my small, male fish has the in-built instinct which enables it to build a bubble-nest, and look after its eggs and young in such a professional manner. It also amazes me that the minute fry have the instinct and ability to move so quickly out of the way when their father, a possibly potential enemy to them, comes near when they are free-swimming. I suppose that experiences such as these are the things which make people such as you and me keen aquarists. Several non-aquarists have come to see my Dwarf Gouramies, their nest, and their babies and, like myself, none has failed to be amazed at the sophisticated behaviour of such small fish. I hope that at least some of the young will survive to grow up, as these are really delightful little fish. I'll let you know, in a future edition, what evolves in the next few days and weeks.

The AQUARIST Crossword Compiled by M. W. CLARKE



CLUES ACROSS

1. *Chaetodon axelrodi* (8).
5. Plant known as baby's tears (6).
7. Value of a boundary in cricket (4).
8. Fish to use on a hook? (4).
10. Colour of a bream? (5).
11. Lower body surface (7).
14. The way to keep your fish tank if you think about economics (2, 6).
15. Hooter (5).
16. It lies between China and India (5).
17. Eggs (3).
18. Hit this fish carefully (3).
20. The home of fish in nature (7).
24. Tinca ——, the tench (5).
25. The man's way to have 26 across (4).
26. Sailors looked forward to this daily (3).
27. Child's retreat (3).
29. Breaking even (3).
30. A twenty-eighth of an ounce (4).
31. The fish for the tropical apiarian (6, 3).

CLUES DOWN

1. Used to build castles on the atoll (5, 4).
2. He may be a danio, harlequin or just elegant (7).
3. Many of the *Cyprinodontidae* come from there (6).
4. Large worm (3).
5. When two fish get together they could do so (5).
6. Chrysalis (4).
8. *Artemia salina* (5, 6).
9. Special garb for 5 down (6).
11. Silky disease? (6).
12. Idiotic egg of parasite? (3).
13. The line to take with your fish (7).
19. Try your arm at fighting in this place (7).
21. For the upset stomach or to raise pH (6).
22. Underground passages (7).
23. Its blue we hear (6).
27. Water that rises (4).
28. A plant out of place (4).

Solution on page 309.

OUR READERS WRITE

Yellow Severums

I recently purchased some small Oscars and Jack Dempseys which were introduced to a large tank with some other Cichlids. I have been feeding these fish mainly with a prepared dog meat which was recommended by a successful Cichlid breeder. I have been very pleased with the results as the fish have grown rapidly and are in excellent condition. There is, however, one drawback and that is that the meat tends to cloud the water and after a time the tank becomes very dirty; this is not due to overfeeding but because the meat clouds very quickly when introduced to the tank.

My fish will take any food offered them but I am searching for a food which will give the same nutritious value and protein content as dog-food but which will be clean in use, and would like to hear from readers their suggestions. Perhaps we can also look forward to an article in future editions of *The Aquarist* on breeding and raising these larger fish.

I also have a female Yellow Severum (adult) and have yet to see another of these beautiful fish. It would be interesting to hear from readers who perhaps own Yellow Severums or anyone who has successfully bred this fish. I would also like to hear any information you can give about this particular strain.

PETER J. SMALLMAN.

Gone Away

In the May issue you published a letter from Mr. G. Jennings disclaiming responsibility for the shortcomings of the I.M.S.S.

My letter concerns the Kraken firm—suppliers of Marina products of which Mr. Jennings was also a founder. It is now nearly 12 months since I sent this firm an order for tropical marine fish in response to advertising matter which they posted to me. I had previously done a little business with the firm and an earlier order had required several months and letters of complaint before being filled, but my last order, although promptly acknowledged by a letter signed by Mr. Jennings, has yet to be delivered. My enquiries are unanswered; the last was returned by the Post Office endorsed "closed down". Similarly, the telephone number is "unobtainable".

I invite Mr. Jennings to explain this behaviour and to arrange for his firm to return my remittance as it seems they are incapable of completing the order. I hope my experience will serve as a warning to your readers as to whom they do postal business with.

R. SWINDELLS,
65 Diarmid Road,
Hanford,
Stoke-on-Trent,
ST4 4QL.

Films Required

My club, the Southend, Leigh and District Aquarist Society, is having a job trying to obtain films of any sort in connection with our hobby. Can any readers help us with suggestions, please?

B. Burlton,
1 Fifth Avenue,
Canvey Island,
Essex.

Market for Garden Worms?

With all the warnings given re Tubifex and Daphnia as fish food I wonder why earthworms are not sold in shops?

Surely they would be far safer as food, but to the many flat-bound aquarists a supply is not obtainable as readily as it is to the garden owners. Also, would they not be available throughout the year whilst the others are not?

G. Pittoch,
5 Trevelyan House,
Morpeth Street,
London, E.2.

Season's Greetings

For

Christmas and The New Year

To

All Our Readers

PRODUCT REVIEWS

FANFARE FLAKE AND GRANULAR Fish Food, distributed by Fantasy Pet Products Ltd., 13 Nutley Lane, Reigate, Surrey, RH2 9HR, price 15p per 17 gram drum.

Flake foods have become so popular in the past few years that many of us are inclined to forget that granular foods used to be the only kind available. I suppose there are many young aquarists who have never even used a granular food. Fanfare Flake and Granular Food is a new fish food which contains both flakes and granules.

The food contains a combination of high protein flakes with nutritious granules, to quote from the label on the cardboard carton. The granules sink fairly quickly and are intended for the middle water fishes and bottom feeders; the flakes are for surface feeders. Unfortunately the carton gives little information about the contents; no constituents are given, nor is any analysis.

We are told that fish should be fed little and often—three or four times per day—and only as much as will be eaten in five minutes.

I was pleased to find that neither the flakes nor the granules were very large; they were an ideal size for the normal fishes kept in a community aquarium. I tried the food on a variety of fishes and they all seemed to enjoy it. I thought that the fact that my fish were only used to flake foods would have meant that they would not have bothered with the granules; this was not the case. Both flakes and granules were taken with equal speed and enjoyment.

Although I cannot comment on the food's analysis, I would certainly suggest that you give it a try. It should make a good basic diet for a wide variety of fishes—especially if housed in the same aquarium.

B.W.

KENRAY COMPARTMENT BREEDER, made by Kenray (Patented) Products, 41 Derby Road, Portsmouth, Hants., price 95p for the 11 in. model, and £1·25 for the 14 in. model.

The makers of this new compartment breeder emphasise that it is not a breeding trap. It is intended for the aquarist who wants to extend his fish breeding programme, where tank space or finance is limited. The 11 in. model is to fit an aquarium of up to 12 in. deep, and the 14 in. model for one up to 15 in. deep.

The outfit consists of four clear, plastic panels which are fitted into four clear, corner pillars. One of the panels has a round hole cut in it, about one third of the way up. Into this is fitted a water circulator, consisting of an air-lift and a foam filter pad. An air supply has to be fitted to this. The unit, when erected, is secured by eight elastic bands.

It is placed into the gravel of the aquarium, after a suitable square groove has been scraped; then the gravel is pushed back again round the base. The plastic materials can be cut to a smaller size, if required. The top of the unit should remain about ½ in. above the surface of the water in the aquarium to prevent fish from jumping out or in. The unit can be used for breeding or for isolating sick fish. In the latter case the water circulator is replaced by a "solid" foam pad, and an aerator stone, if required, can be used. In the former case, to protect young fry or spawn, the bottom of the compartment can be thickly planted or covered with glass marbles, until the parents are removed. By cutting the components, or by adding additional units, virtually any size of compartment can be made, or any number linked together to provide a series of breeding compartments within one aquarium. Replacement parts are available.

If you need extra breeding space you might care to try the Kenray Compartment Breeder.

B.W.

K.G. "ALGAE MAGNET" POOL FILTER, made by K.G. Products, 165 and 254 City Road, Fenton, Stoke-on-Trent, price £2·25.

This new product, which is illustrated on page xxxix of the October 1971 issue, is a novel kind of filter for the garden pool. It is about 12 in. tall by 2½ in. broad. It consists of a circular, metal base, into which is inserted a vertical plastic tube with four holes near the bottom. The tube has a fitted air line and aerator stone. There are two foam rings round the vertical tube and these hold the filter medium in position. The filter "medium" consists of a wide bore plastic tube, containing four rows of holes, and fitted with a sleeve of yellow, plastic foam. The pool filter is placed on the base of the pool and connected to an air pump. Any good air pump will operate the filter—with an extended length of air hose.

As I do not have a pond or pool, I was unable to test the product under its intended working conditions; however, I did give it a short test in a shallow aquarium. When an air pump was connected, the filter emitted a foaming stream of water from its outlet—showing that the water was well aerated.

The makers claim that this is a "small, efficient unit to combat green-water, and keep your garden pool clean and fresh. It is easy to install, easy to maintain and costs less than 2p a week to run." They also claim that it aerates as it cleans, and keeps an area free of ice in winter. K.G. Products supply a suitable air pump at £1·20 and mini air hose at 5p per yard. Up to 100 ft. of the latter can be used efficiently.

The K.G. "Algae Magnet" Pool Filter should be of interest to those with a problem garden pool.

B.W.

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

I have a 2 ft. aquarium in which I have a pair of combtails (*Belontia signata*). **Would there be room in this tank for two Siamese tiger fish** (*Datnioides*) **without danger of overcrowding?**

There would be room in your tank for two Siamese tiger fish, but I advise you not to mix *belontia* and *datnioides* together. The combtail is a moody fish with a vicious streak in its nature. It would give datnioides, or any other fish, a bad time in a restricted space.

Datnioides quadrifasciatus

I am quite new to aquarium keeping and feel worried about the health of my fish. You see, the sides of their tank are infested with a multitude of tiny grey-white worms. Are these worms dangerous parasites and, if so, what steps should I take to get rid of them?

In all probability the worms you have noticed are planarians. These turn up in most aquariums but do not make their presence known unless there is too much organic waste on the bottom. Keep the bottom clear of uneaten food and decaying plants and the worms will die down of their own accord. They are not parasitical on fish.

The surface of my aquarium is covered by an oily scum. Can you please give me a reason for this and what to do about it?

In most cases an oily scum on aquarium water is caused by oil seeping out of a putty mixed cement. But it can also be caused by vegetable decay or cooking fumes. If you draw a sheet of newspaper across the surface of the water it will clear it of putty scum. Repeat the process for the next few days to make the cure permanent. A close-fitting glass cover should prove adequate protection against cooking fumes (or excessive tobacco smoke). If, however, artificial aeration is used, switch off the pump until the atmosphere has cleared.

One of my best coloured and most lively barbs has developed a cloudy eye. Would it be best to destroy this fish rather than have it go through life handicapped by partial blindness?

Fish are seldom, if ever, handicapped by the loss of sight in an eye. They are guided to their food by smell and by vibrations in the water. Therefore I do not think it is necessary or kind to destroy an otherwise healthy and handsome looking fish.

What is a coldwater panchax?

The coldwater panchax is an obsolete popular name for *Oryzias latipes*, better known to present-day aquarists as the medaka or Japanese rice fish.

Please give me information on the feeding, type of water, and preferred temperature for a fish called *Laemolyta taeniata.*

L. taeniata is an omnivorous characin that needs a good proportion of live food, or a meaty substitute for live food, in its diet. It thrives best in a well-planted aquarium filled with water on the soft side giving an acid reaction.

I have just bought a pair of Hasselt's Barb (*Osteocheilus hasselti*). **Is this species suitable for a community tank?**

Yes, providing the tank is on the large side, for Hasselt's Barb grows to a length of about 6 in. (up to a foot in the wild), and you do not mind seeing the plants chewed away.

I would welcome any suggestions you can make on a good centre-piece plant for a 24 in. by 12 in. by 12 in. aquarium. I need a plant that will not float its leaves on the surface, that will keep its leaves for months on end, and has stems that stand erect.

Any of the following should meet your requirements: *Aponogeton crispus, Cryptocoryne affinis* or *Echinodorus grisebachii.*

Is the pygmy swordtail a distinct species or is it merely an undersized sport of the common swordtail?

The pygmy swordtail is a distinct species. It is known to science as *Xiphophorus pygmaeus.* No prolongation of the bottom rays of the caudal fin are found in the male.

I should like to have my air pump operating during the hours of darkness and less frequently during the day. Can I buy a special switching apparatus to meet this requirement?

All you need do is to connect you air pump to your thermostat. There will then be plenty of air going into your tank during the hours of darkness (when most rooms cool down) and less air during the day when most homes are adequately heated or at least are warmer than they are after midnight.

I wonder whether you could help me with my problem. A few months ago, I set up an 18 in. by 10 in. by 10 in. tank with oxygenating plants and seventeen fishes including barbs and opaline gouramis. I have lost several of the barbs since July and only yesterday found a platy and two guppies dead on the bottom. Can you tell me what has gone wrong?

I would like to draw your attention to the dangers of overcrowding and the importance of choosing the right sort of fish (for a community tank). No more than about ten fish ranging in size from 1½-2 in. should be introduced into an 18 in. by 10 in. by 10 in. tank. Again, some gouramis throw their weight about when they attain a fair size and in a restricted space will bully and kill off less assertive or delicate species. Most barbs grow rapidly and make increasing demands on oxygen and swimming space. Neon tetras, lemon tetras, guppies, pristella and zebra fish are among the most satisfactory species for a small community tank. To sum up, I think your tank has been overcrowded with a mixture of the wrong sort of fish.

Please give me some information about the

sexing and spawning procedure of the striped headstander.

So far as I can ascertain, the striped headstander (*Anostomus anostomus*) has not bred in the aquarium. If the fish carries any external sexual distinguishing shape or mark aquarists do not know of it.

COLDWATER QUERIES

by Arthur Boarder

I am setting up a 24 in × 12 in. × 12 in. tank for coldwater fish and realise I can only keep eight 2 in. fish, but I want as many as possible of the fancy goldfish varieties, such as Orandas, Veiltails, Fantails, etc. How many should I have and will they fight?

Your tank should not hold more than 12 inches of fish and so six at 2 in. would be enough. This refers to the body-length of the fish. I suggest that you have six fish of an inch body-length and you can have a veiltail, a fantail, a moor, an oranda, a lionhead and a shubunkin. These fish will not fight but they could all breed together; and if any fry survive it will be very unusual as the adults will surely eat the eggs, or, if any escape to hatch out, the fry would then be eaten.

I have two goldfish, a tench and a Koi in tanks and I am hoping to have a garden pond shortly. Can I keep these fishes together in the pond? One goldfish chased the other until it was exhausted, is this because they are a true pair?

You can keep the fishes you mention in a pond together without fear of trouble. I have kept tench with fantail goldfish in a pond for many years and have had no difficulties. It is apparent that your goldfish are a true pair and you may not have been able to recognise any eggs. These are very small and transparent and if you do not know what to look for they can be overlooked quite easily. The tench and Koi could have eaten the eggs even if the parents did not do so.

About a year ago I built a pond with a fibre glass shape, 8 feet by 5 feet by 18 in. I stocked it with 22 goldfish of sizes varying from 2 in. to 5 in. I have lost several of the fish which seemed to lose their energy before dying, but they showed no signs of injury or disease. Why was this?

It is almost certain that when goldfish in a pond die and show no visible signs of injury or disease, they have died through impure water. It may have become polluted by the decaying of uneaten food or the trouble brought on by the waste matter voided by the fish. Many pondkeepers do not realise that when goldfish are fed well they void urine and droppings which can pollute the water if they become too heavy in concentration. When fish are kept in a tank indoors the aquarist will usually change a part of the water each week to help to freshen up the water by removing some of the fouled. Water plants tend to assist in the clearing of much of the waste matter from the fishes. However, I think that you went wrong in the first place by over-stocking the pond with 22 fish. This may have been the recommended number stated by your dealer but remember, he is more concerned with the selling of the fish than what happens afterwards. When goldfish, or any others for that matter, are kept in crowded conditions it is almost certain that some of them will not thrive and the weaker ones soon go to the wall. What often happens is that fish die off until a better balance of fish-to-space is attained. If only pondkeepers would realise that it is far better to keep a few healthy fish in a pond than to try to overstock, fewer fish could be lost.

I have just bought myself a tank, 24 in. × 12 in. × 12 in. and have in it, one goldfish, one tench, one brown headed bull fish, one golden fantail, one black moor, one shubunkin, one veiltail, one golden orfe and two black snails. I have now seen eggs on the glass and would like to know which fish laid them. The eggs are one bunch of 26 eggs and one of 16 eggs, and they are a pale brown colour?

The eggs are from the snails not the fishes. The fish you mention lay eggs in singles like tiny beads of jelly about the size of a pin's head. These normally stick to water plants when laid. Your snails appear to be the Ramshorn type. I do not know the size of the fishes you have stocked your tank with, but I fear that you have over-stocked. The tank should accommodate only 12 in. of body-length of fish and if you have more then the fish will not thrive. It may be possible to keep them alive by using an aerator but it is taking a big risk. I doubt if the Bullhead will survive for long and it is very doubtful if the golden orfe will do so. (Incidentally, there is no need to say *black* moor; it would not be a moor if it was not black.) It is not always easy to tell the sex of the fishes you have. A male tench will show thickened rays of the pelvic fins, and they are spoon-shaped. The other fish may not show any definite signs unless they are in breeding condition. At such times the males may show small white tubercles on the gill plates and sometimes on the front edge of the pectoral fins. If these signs are not present then one has to examine the bodies of the fish. The female fish, if filled with hard roe, will appear distended, especially if viewed from

above. However, with some of the short-bodied varieties you have this is not easy as even the male fish have thick bodies. Once chasing by the male commences you will have no doubt as to their sexes.

I keep approximately sixty goldfish and shubunkins of about 8 in. each in length. I find it very expensive buying food for them. Can you suggest anything else besides packet foods, please?

I sympathise with you as to your problem. The packet of dried food I used to pay 80p for just over a year ago has now gone to £2·70 which, in my opinion, is ridiculous. You can feed your goldfish on dried brown bread, garden worms, scraps of meat, bits of fish, various cat foods, rolled oats, boiled wheat, boiled soya beans and, in fact, almost any food which a human being can eat. Then there are many types of green foods which if boiled will be taken by hungry goldfish. Goldfish are omnivorous and you will find that there are few foods which they will reject and also a mixed variety will assist them to keep in good health. Incidentally, the Trout pellets many pond-keepers use to feed their fishes with have now been trebled in price, and it looks as if someone may have cornered the market.

I have set up a tank for coldwater fish which is 18 in. × 12 in. × 12 in., and would like to keep some veiltails in it. How many can I keep?

The tank is rather small for veiltails and will hold only four two-inch fish. This does not allow much room for growth. The veiltails would be all right in a tank in a living room but it will be safer to enquire when you buy them as to the temperature they have been used to. Some of these fancy goldfish are reared at almost tropical conditions and if so you might have to gradually bring the water down from a warm one if you intend to use no heat later on.

I have a tank 30 in. × 15 in. × 15 in., in which I wish to keep some Comets. How many can I have?

Your tank will hold about fifteen inches of body-length of fish. However, Comets are a fast-swimming fish and although your tank is of a good size, I doubt if Comets would thrive for very long in your tank. These fish are very handsome but require plenty of swimming space. If you prefer them I suggest that you have not more than six two-inch fish. This is the body-length but good Comets have a tail as long as the body and so your fish would be four inches long over-all. Your intention of using 100 plants for the tank appears to me to be far too many. These oxygenating plants grow quite quickly and so they would soon take over most of the swimming space. You should only plant up the back corners fairly well but leave the front half of the tank free of plants. I think that you would do better with some Shubunkins in your tank instead of the Comets, as these are more likely to thrive in your tank for a long time.

FISH FOOD REVIEW

KING BRITISH VIT-A-MIN Every Day Flake tropical fish food, manufactured by King British Aquarium Accessories Co. Ltd., Cannon Mills, Union Road, Bradford, Yorkshire, BD7 3HW. Prices: 12·6 grms. 12p, 25·2 grms. 20p, 57·6 grms. 37p, 450 grms. £2·15, and 900 grms. £4·20.

When one reviews fish foods frequently it becomes increasingly difficult to think of something original to say. When new foods are usually all of a high standard the task is even more difficult. This new food is described as a "breakthrough" by its manufacturers, and not "just another fish food." This food has been produced by a research team headed by Mr. Gordon Holmes, Company Technical Director of King British, and is the result of a number of years' studies into the nutritional requirements of fish.

The food contains mosquito larvae, shrimp meal, soya meal, algae, crab meal, Tubifex, liver, anti-oxydants, whale oil, fish meal, crustaceans and bulk roughage, and the independent analysis is: protein 49 per cent, minerals 10·9 per cent, crude fat 8·7 per cent, moisture 6·5 per cent and crude fibre 1·5 per cent. The flake is, as the advertising literature states, "prepared to a softer texture" (although it does not say compared to what) "thus allowing some of the flakes to sink, enabling fish to feed naturally at all levels, in addition to being more readily acceptable to all varieties, large and small."

Free samples of the new food are being offered, at the time of writing—October—from local dealers, or direct from the manufacturers. The sample is accompanied by some interesting literature which gives details of why fish need certain amino acids, minerals, vitamins, etc. Also included is an analysis report form containing questions which users are invited to answer—in the form of yes/no answers. I am not too sure about the aims of this form.

I liked the texture of this new food and was pleased to see that the sizes of flakes were suitable for a wide range of fishes, including smaller fishes. I tested the food by feeding it to a wide range of fishes in both community aquaria and single species tanks, and found that all fishes seemed to enjoy it—judging by the speed with which it was eaten. Some of the particles sank fairly quickly, to be eaten by middle-water or bottom feeding fishes. The food does not cloud water and fish should be fed at least twice daily. I suggest that you try this food with your fish; if they are like mine, they'll enjoy it.

B.W.

Junior Aquarist

A TRIP TO BRIGHTON AQUARIUM

by Michael D. Rose (aged 15 years)

PRIOR TO my summer holidays in Brighton, I decided to enquire about the public aquarium and dolphinarium there. I was informed that it was extremely good and it therefore became my prime objective to visit. On the fourth morning the wind was blowing furiously and it was raining, so we decided to go to the Aquarium which is situated just opposite the Palace pier.

There are three main parts to the Aquarium; the Dolphinarium, the sea-lion pool and the main hall containing the fish and amphibians. The dolphin display (which takes place every half-hour) was due to start at 11.30, so my parents suggested that we begin to walk up the first side of the main hall until five minutes before the dolphin show was due to begin. The main hall was about 100 yds. long and was dimly lit. The tanks themselves numbering about 35 were either approximately 30 in. × 12 in. × 15 in. or 10 ft. × 4ft × 2ft.

The first tank showed a display of frogman's equipment; next to this there was a beautifully set-out community-tank of the 10 ft. size containing Angels, Red-finned Sharks, Tiger Botia, Cherry, Rosy and Nigger Barbs, Orange Chromides, Harlequins and Scissor Tails. The next tank contained Silver Sharks and the one after this some of the larger cichlids including Brown Acara, Oscars, Severums and Jack Dempseys. These were followed by a tank containing Jewel Fish, various mouthbreeders and two enormous Albino Clarias Catfish.

Following this was a tank containing a single black Piranha; to add effect to this rather bare tank, a single ram's skull had been dropped in.

The next tank contained Koi of various colours which had been recently imported into Brighton direct from Japan. We then entered an alcove in which there were twelve 30 in. tanks containing Red-eared Terrapins, Axotles, Slow worms, Sea horses, native invertebrates, Silver Dollars, Guppies, Blue Acara, Blind Cave Fish, Neons, Glowlights and Elegant Rasboras.

We were then back in the main hall where we were confronted by a huge tank half full of green sea water containing two harbour seals. This struck me as being rather cruel as there was only just enough room for the seals to swim submerged and by no means enough water for them to have a good swim.

There were then two large tanks containing a variety of native marines and invertebrates which included Stingrays, Lobsters, Black Bream and Conger Eels. Directly following this was a tank which was unfortunately terribly overcrowded, with an excellent display of fancy goldfish.

It was now time to move to the Dolphin Pool which measured 80 ft. × 30 ft. × 10 ft. and contained 20,000 gallons of sea water at 72°F. The display itself was excellent and from the comfortable auditorium, it was easy to see the dolphins' antics as they jumped out of the water, retrieved rubber balls and played water-polo at amazing speeds.

After the Dolphin display we walked up the other side of the main hall. The first tanks held Minnows, Sticklebacks, Rudd, Small Koi, Pike (up to nearly 7 lb), Crucian and Mirror Carp, and some huge Koi.

Directly opposite the alcove on the other side there was a turtle pool containing two Loggerhead Turtles which one was able to view both from above and below the water. A tank of small Crucian Carp followed the turtles and after this came three large tanks containing tropical marines.

The first tank contained a Purple-spotted Ray, a Painted Butterfly, Pretty and Green Damsels, a Blue Ribbon Eel, a Cowfish, two Scorpions and an Addis Beauty. The next tank contained Clown Wrasse, a Picasso Trigger and Dominoe, Chromis, Cloudy and Humbug Damsels. The final marine tank contained Sturgeon, an Undulate Trigger and some groupers.

These three tanks were beautifully decorated using corals and shells and were all aerated very well with diffuser stones.

The final three tanks, of which the last was infected with flukes, contained a number of native marines and invertebrates including Grey Mullet, Flatfish, Blennies, Bass, Tub Gurnard, Thornback Rays, Lesser Spotted Dogfish, anenomes and Crabs.

As we passed through the exit hall we saw the sea-lion pool containing Californian Sea-lions.

This concluded a most enjoyable visit to the Brighton Aquarium and Dolphinarium and I recommend anyone who might be in the Brighton and Hove district to visit the Aquarium as it will be an aquarist's time well spent.

EXPERIENCES WITH OSCARS

by T. J. S. Straight

WHEN God created the Oscar, he must have had the aquarist in mind. This fish offers more to him than any other on the market. One finds them in the shops at the inviting length of 1 in., at a cost of 25p or thereabouts. Even at this small size, their black and white markings distinguish them from other fish. Very alive at this age, they rush to the surface of the water, with tails wagging as soon as any food is put in the aquarium. This apparent friendliness caused me to buy my first Oscar about two years ago. Within the space of six months, he had shot up to five inches in length, and had consumed most of the other occupants of the tank, as well as large amounts of tubifex and daphnia. Despite this, I had great affection for my Oscar. One always takes pride in a fish that has developed well under the care and protection one provides. He (or she) had a perfect body with the red markings developing round the gills and tail, which exhibited a prefect ocellus, or eye spot. Unfortunately, my Oscar contracted a disease that covered his eyes with a cloudy film. All treatment failed and the pride of my collection died after a few days of suffering. I buried him along with the hamsters and terrapins in the back garden. After a few days of mourning I started again and bought three baby Oscars, an inch in length.

Since that time, I have gained a lot from my experiences. First, I learnt you cannot keep small Oscars with large Oscars. I tried putting six together varying from two inches in size to six inches, and I paid for it, the largest of the six having the smallest for lunch one day. Next, I discovered that it is a mistake buying an Oscar over seven inches in length. At this size they are not adaptable fish, and the transference to your own tank is usually enough to kill them. Oscars need a lot of space in which to develop, starting at a two foot tank for those under three inches up to a four foot for anything over five inches. At the moment, my six largest Oscars are in a four foot bow-fronted aquarium and are growing at a marvellous pace. A pair need at least a three foot tank, but a four foot would make them more comfortable. Food is probably the most important factor in the life of your specimen. Oscars can and will eat almost anything. Live fish are their favourite choice, and should be fed to them at least three times a week, anything from baby guppies to deformed goldfish being suitable. Otherwise, they can have maggots, mealworms, tubifex, daphnia, horsemeat, dog food, sometimes dried foods and vegetable matter; mainly they are, however, carnivorous, and the aquarist must be wary about other fish he would like to have with his Oscars, since these fish will eat anything that will fit their mouth. Large catfish and cichlids make good companions, although a tankful of Oscars alone, still proves an impressive sight.

Often the ultimate achievement of an aquarist's life is the breeding of a pair of Oscars. This has been achieved in this country on a few occasions, but the main barrier to breeding is space, combined with the problem of feeding a breeding pair. There are differences between male and female, that are obvious at a glance. At five inches in length, a male will have a brighter red ocellus and the body markings will be a vivid red, especially round the stomach area. A female in comparision is drab, with yellow markings as oppposed to the male's red, while the stomach region should remain the normal black colour. As many aquarists know, there is a great deal of difference between having a pair of fish, and their actual breeding. I, myself, have two young Oscars that mouth with each other and dig holes in the gravel, as well as drive off any interfering tank companion, but they have failed to produce any eggs. It is a clever and skilful person who can induce them to spawn. They need privacy and quietness, but too often these conditions are not respected. One day, maybe that miracle will happen and the pair will spawn, and one ambition will be achieved. Temperature must be important in breeding. My Oscars are happiest at 80-82°F, and looked decidely unhappy below 75°F. 86°F would seem to be the average for breeding. My six Oscars are growing well and I hope to be able to record some sort of breeding by the end of the year. I can only wish good luck to Oscar-keepers and hope this article will help.

GOLDEN SWORDTAILS

by Pamela Hansen

In November, 1969 we received four red swortails in exchange for some black *Mollienesia sphenops*. These red swordtails are classified as *Xiphophorus helleri* but in fact the red colour originates from a cross between *X. helleri* and *X. maculatus* or *X. variatus;* the original *helleri* is the green swordtail. Some authorities suggest that the red swordtail cannot have come from hybrid stock since it breeds so prolifically, whereas hybrids are often sterile, but it is generally accepted that it is a hybrid. There are, in fact, eight species of *Xiphophorus* now recognised; moreover, *X. helleri* is divided into four sub-species. All these sub-species are found in pools and swamps along the Eastern coast of Mexico.

By December two of our young red swordtails were dead, but a male and female remained. In January the female gave birth to a brood of 24 young, two of which were an attractive golden colour, while the rest (we failed to note exact figures) were red or green. We were rather taken aback at the appearance of these golden baby fish as we had never come across them in any aquarist shop here in Denmark, and our enquiries failed to locate any dealer who knew anything about them either. However, we saw that they were mentioned in some British dealers' lists, though whether they were the same type as ours we did not know.

We consulted various aquarist authorities. Sterba, in *Freshwater fishes of the world* (1967), states the existence of a "yellow" swordtail, the result of a partly albino mutation, but gives no further information. A colour photo in Axelrod and Vorderwinkler's *Encyclopedia of tropical fishes* (1962) shows a pair of sword tails similar to ours, except that ours are somewhat richer in colour, under the name "albino swordtails". The fish have black, not pink, eyes which indicates that they are, as Sterba states, not wholly albino. Elsewhere in the book there is a black and white photo of "golden albino swordtails" apparently the same as those in the other photo. In the text is mentioned the existence of true albino swordtails with pink eyes and pale yellow bodies, but there is no reference to golden or partly albino swordtails with black eyes. Innes, in his *Exotic Aquarium Fishes* (1968) recognised the existence of the golden swordtail as one of the three main types of *helleri*. He made no mention of albinism but stated that this was the one type of swordtail which had no black edging to the spike; some of our golden swordtails, however, developed this black edging, while some did not. We could not obtain the newer specialist books on swordtails, so this was practically the sum total of our information.

To return to our story. Both of our golden swordtails turned out to be female. The original red female had four further broods:

17.2.70—26 young, three of which were golden, the rest red or green (exact figures not noted).
24.3.70—40 young, five of which were golden.
29.4.70—68 young, nine of which were golden.
16.7.70—112 young, 12 of which were golden, 63 red, 20 green, and two white. (The rest died, colouring undetermined.)

N.B.—A small number of white swordtails regularly appeared, without pink eyes, but these almost invariably turned red on reaching maturity. At the moment we have one white adult female who as yet shows no signs of changing colour, and we will experiment with her in future. We have never had a white male, so have never been able to mate two white.

There were both male and female green swordtails which matured at the age of about two months, and both male and female red swordtails which took about a month longer to mature. There were only female golden swordtails in all broods, and these took from three to six months to mature.

The results of this first cross suggest a ratio of golden to red swordtails of 1:8, the golden and green together giving a ratio of 1:4. This latter is the normal ratio one would expect when a recessive gene is involved,

but more than this we cannot say, as we could find no relevant information in any of those books we consulted. We naturally could not understand why we got golden females only and wonder if it might be due to the gene for golden being a sex-linked recessive gene such as red-green colour blindness or haemophilia in man, in which case we might get golden males only by cross-over; but a closer study of the genetics involved showed that this could not be the case. Moreover, we learnt from two different sources that the golden colour is caused by an autosomal gene called st st which reduces the number of black pigment cells, thus accentuating the golden colour. In any case we displayed these females in an aquarium exhibition where they were the only ones of their kind and we came across no-one who had seen them before. The explanation for this now seems to be that several hobbyists did, in fact, possess fish which produced these goldens now and then, but they lacked either the space or inclination to back-cross them and breed them up for sale and so none turned up in the market.

We made a second cross in September, 1970 between the original red male and three of his golden offspring, with the following result:

5.9.70—a brood of 29, of which 16 were red, seven green, and six golden.

6.9.70—a brood of 24, of which 14 red, three green, and five golden (two died).

2.10.70—a brood of 84, of which 48 red, 18 green, and 18 golden.

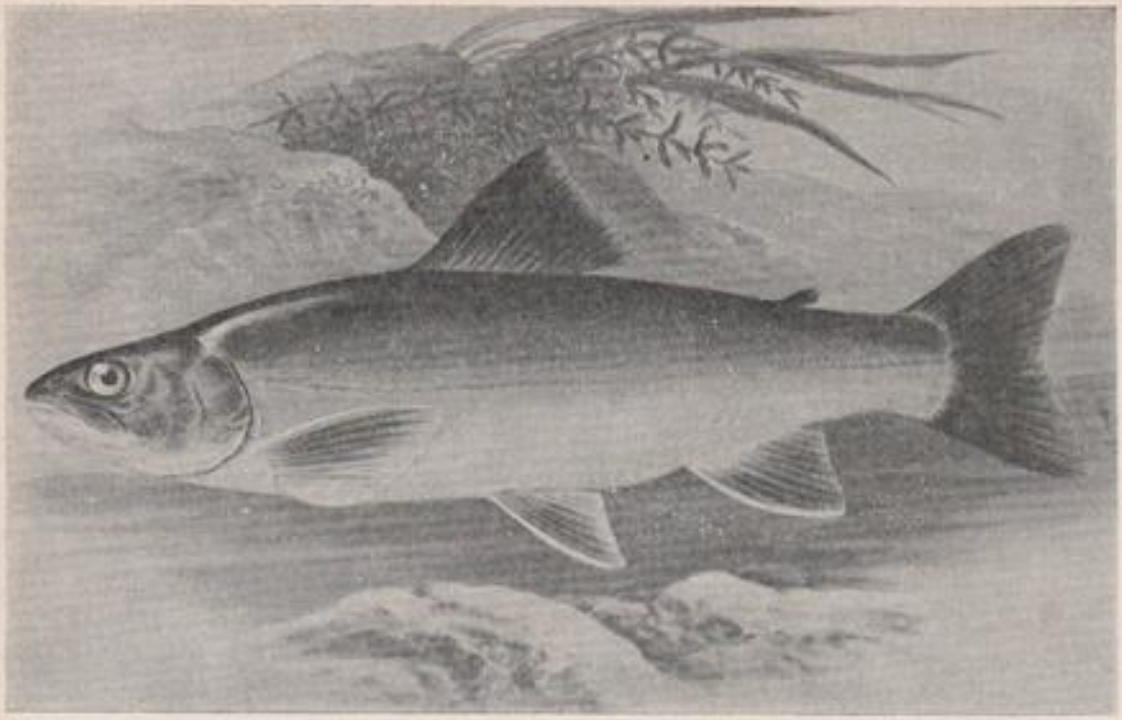
There were both male and female red and green swordtails as expected, whereas we had two golden males and 27 golden females. We mostly sold the red and green swordtails before ascertaining the sex of each fish and so do not have statistics as to the respective number of males and females.

When after three months the first golden male appeared, it was immediately mated with its golden sister, and its mother's golden sisters. A month later the second male turned up. The females were meanwhile dying off like flies; they seemed very prone to disease, and constitutionally weaker than the other swordtails. The results of this third cross were as follows: from the 23rd December to the 11th February we got nine broods, one of which perished completely, and which otherwise ranged in size from a total of two to 41 fish. In some of these broods the total was small but complete; that is, none were seen to die or be born dead, whereas in other broods some died, and these are not included in the count Morevoer, three broods of which eight, six and 33 respectively survived, were born in community tanks. Our two males had by this time succumbed to disease and died, so we were relying on the fact that we would get golden males from the third cross.

In March, 1971 it again became possible for us to obtain living food after a winter with nothing but occasional mosquito larvae, and thereafter there occurred no more deaths and we have had no trouble with them since. In April the first male from the third cross appeared. The final result was 175 golden, red, and green fish, showing that the golden swordtails did not breed true. We lack exact figures for the respective number of golden, red and green, but by July, 1971 we had sold 125 golden swordtails from this lot; and this does not include several we lost when the lights were put out at night, by their jumping out through a small space in the corner of the tank where the filter entered. The ratio was therefore at least 5:2 of golden to red and green swordtails; the ratio of golden and green to red could not be ascertained. The exact number of males and females was again, unfortunately, not noted down but it was approximately half and half, or at least there was no noticeable preponderance of one sex over the other.

As aforementioned, the standard works on tropical fish do not delve into genetics, but we hope to acquire some recent books on swordtails and there perhaps learn something about swordtail genetics which appears to be rather complicated. In the meantime we will continue our experiments, making all possible crosses and noting down all relevant statistics. We have just acquired a lovely red wagtail lyretail female and an attractive pair of black swordtails which we hope will also prove interesting to breed.

Crossword Solution



British Freshwater Fishes

by A. Boarder

THE CHAR

THE CHAR is one of the less known species of fishes in the British Isles for specimens vary so much from one locality to another and as they are mostly deep water fishes they are not met with as frequently as most other species. There are many varied types and according to some authorities there are fifteen distinct species. Others give the number at six, but it appears that these fish have developed along differing lines according to the lakes where they are found. They belong to the Salmonidae Family and it is generally supposed that they once, millions of years ago, went to the sea like salmon and only came to fresh water to spawn, but owing to land eruptions, etc., they became locked in various inland lakes and so developed along individual lines.

If this was the case, and it seems quite probable, it may be that many of the so-called species are only varieties. As many of the types are found in one lake only, there is a strong possibility that originally they all sprang from one species. The varied waters, with their depths and chemical make-up in variance, may have influenced the different forms of this fish so that today each particular lake is the home of one distinct type. The general appearance of the Char is like some Trout, but the teeth formation varies and there are no black spots on this fish. Some types do not grow very large and few are found over three pounds in weight.

There appears to be one thing in common with all kinds, and that is the cold waters where they live. They can be found in the Arctic regions and rarely in any lakes which are not fairly cold. In consequence they are found in England only in the more northern lakes, almost entirely in the Lake District. Some are found in North Wales, Ireland and Scotland. Some of the lakes where they live are at quite high levels

and so are probably much colder than lakes in regions nearer to sea level.

The Char found in the Arctic still have breeding habits similar to those of the Salmon and it seems that it is only since they became land-locked that they have developed along their own individual lines. In some districts the Char is considered food fish and in Northumberland it is thought to be a delicacy and varied recipes are in existence for the preparation of this fish for a fish treat.

Although the Char inhabits the deep waters of lakes it can sometimes be seen in shoals near the surface. The spawning habits vary somewhat as where there are streams or rivers running into a lake the Char may spawn like Salmon, making redds in the gravel. Where there are no such tributaries the Char will spawn at depths in the lake. The eggs are fairly large and not very numerous and take about nine weeks to hatch and the fry have the usual yolk-sac similar to most fishes and live on this for a time. When it is absorbed they take small insect *larvae* and tiny crustaceans. Larger fish eat other small fishes, and crustaceans and molluscs which inhabit the lower regions of the water. Spawning takes place in the winter and so resembles, again, the habits of the salmon.

No general description as to the colour of the Char can be given as the fish vary so much according to their locality. Most of the Char found in Scotland are rather similar to those to be found in Lake Windermere, and are known as Willoughby's Char (*Salvelinus willoughbii*), and they inhabit the deep waters as a rule, spawning in the winter, from November to February. It is said that the smaller fish spawn in shallow water but the older adults do so in deep water. Lonsdale's Char (*Salvelinus lonsdalii*) or the Haweswater Char, is a much smaller type than the former, and rarely exceeds seven inches in length. The Torgoch (*Salvelinus perisii*), is found in two lakes near Llanberis (Snowdonia), and this type grows to about ten inches and spawns in the stream joining the lakes. The Struan Char (*Salvelinus struanensis*), is found in Lake Rannoch in Perthshire, and is a beautiful fish with salmon-coloured spots. The Haddy (*Salvelinus killinensis*) is found in Loch Killin in Inverness-shire, and is a darker coloured type to several others. Another type is found in a loch near Ben Hope, in Sutherlandshire, and is known as the Large-mouthed Char (*Salvelinus maxillaris*), which has a large maxillary bone. Malloch's Char (*Salvelinus mallochii*) inhabits Loch Scourie in Sutherlandshire and has a very short head and many small scales. The Orkney Char (*Salvelinus inframundus*), was formerly found in the Island of Hoy, but now appears to be extinct. The Shetland Char (*Salvelinus gracillimus*), is found in Girlsta, and this is a very elongated type more slender than the other Char.

An Irish Char is found in several lakes in Co. Clare, Co. Donegal, and Co. Kerry, and is called Cole's Char (*Salvelinus colii*), and in some lakes is very similar to those found in Lake Windermere, growing to a foot in some waters whilst only eight inches in the smaller lakes. Gray's Char (*Salvelinus grayi*) is found in Lough Melvin in Fermanagh, and this one grows to about a foot in length and is deeper in the body than the preceding type. Another kind found in Ireland is Trevelyan's Char (*Slavelinus trevelyani*), and resembles the Haweswater Char more than any other. Another from Ireland is Scharff's Char (*Salvelinus scharffi*), a fair sized fish which can grow to three pounds in weight, and is a silvery fish. The Coomasaharn Char (*Salvelinus fimbriatus*), is found in the Lough of that name in Co. Kerry. The Blunt-snouted Irish Char (*Salvelinus obtusus*), is a somewhat smaller fish than the former and is found in Wicklow and Kerry.

From this extensive list of varied Char it can be realised that any description of the Char as a type would be quite misleading and it does appear that this fish among all our British species is the most confusing and one which appears to vary as to its locality so much as to be almost a different species from lake to lake. As an aquarium fish it is not to be recommended as the deep cold water preferred by it would be difficult to obtain and it is said that it would not live at a temperature of above 60° F.

BEGINNER'S LUCK

by Gunther Radek

THE DEALER told me that they were unidentified Cichlids and so I bought three of them for a reasonable price. At home, after studying all my reference books, I came to the conclusion that this trio were nothing more than *Monocirrhus polyacanthus* Heckel!

Their habitat is the smaller streams of the Amazon and their odd habits demonstrate that they are at home in water which is quiet and still.

The English common name of this fish is a tribute to its methods of swimming and its dull coloration. The colour is a dull brown and the fins are transparent. This fish hangs head down in the water and drifts

with the little current in the aquarium just like a dead leaf in autumn. Last, but not least, the body is compressed and that completes the dead-leaf impression. However, when this drifting leaf awakes, it changes with surprising rapidity even jumping several inches from the water with little effort. The pectoral fins, and also the dorsal and anal fin-tips, are nearly transparent and in constant motion. They cause a current of water to flow, but so nicely are their effects balanced, that the fish seems to be absolutely motionless.

The Leaf-fish is carnivorous and feeds on small fish mainly. By its well-regulated movements it can come within a few inches of its prey—and a swift dart and the little fish is swallowed. In proportion to its size, the mouth is very large and can form a quite strong inflowing current. All the hundreds of guppies swallowed disappeared each in one gulp!

One of the trio died for reasons unknown. Maybe it was killed during the activities of the mating pair. Yes, two of them mated within a month after their arrival in my aquarium. At first I had no idea what was going on. I did not see any fighting. Some days after the death of the third inmate one fish was hanging motionless by a leaf of *Sagittaria* in the furthest corner from the other. At the slightest movement of the first fish away from the corner, the second opened its jaws, tried to threaten the other, swam towards it and drove it back. Such unfriendly behaviour has its reason and after little examination of the aquarium, especially where the second fish had taken up its position, I discovered a number of transparent eggs hanging from the underside of the leaf. The eggs seemed to be in constant motion, caused by the current from the fins of the fish stationed nearby.

I did not know that the fish is so rare, so I did not observe them very carefully. I remember it was then the fourth night after spawning when the eggs hatched. The unpleasing behaviour of one parent towards the other partner increased so much that I decided to separate the frightened inmate.

Some of the fish babies were still resting upon the *Sagittaria*-leaf to which the eggs had been attached but the majority of them were in the gravel and sand beneath the "nest." The parent fish left in the tank made not the slightest effort to round up the scattered babies or to care for them in any way. It still stayed by the empty shells. As I was afraid it might regard its own babies as suitable food, I separated it too. Within about 48 hours of hatching the youngsters lost their yolksac and readily accepted small *Daphnia*.

Some days later the parent fish were placed together again. For some days they were drifting around the aquarium and one morning I observed one of them scraping a leaf of the same sort of plant as was used the first time. The fish working at the leaf had changed its coloration and showed a lovely golden-tan colour with some spots of chocolate-brown. The partner stayed nearby and was of the same dead-brown colour as when it arrived. After several hours of scraping the leaf, the fish came together and a number of eggs were laid. This very fish which had been cleaning the leaf was now frightened off and the other took care of the eggs. The fish which was so bright before became dull brown again. Shame on me, but I cannot tell whether it was the male or female as both fish looked exactly alike. In the other members of the family it is the male which selects the site of the nest and which also looks for the eggs. As one of them had a small scar on its mouth, I was able to identify them.

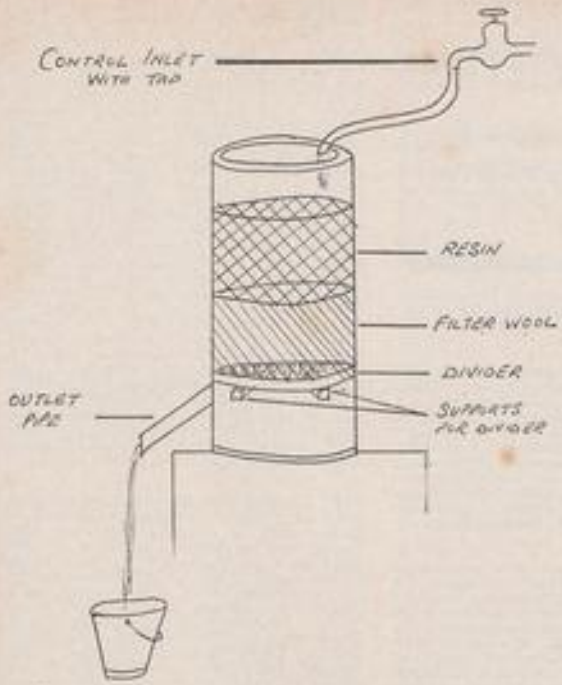
The beginner's luck ended abruptly. Cleaning the room, the housemaid switched off the electric equipment and forgot to put it on again. The other morning the temperatures were down to +10° Centigrade, the fish half alive still. In spite of my hope they all died within a few hours.

Making Soft Water

by K. G. Wakeford

In the September issue of this magazine, Mr. R. H. Cooke wrote an article about the preparation of water for Discus fish. I am a fairly newcomer to fish keeping so I have not ventured to Discus as yet but I have a few pairs of Killifish, some of which need soft acid water. During June and July this year I was experimenting with ways to produce soft water, so when I saw Mr. Cooke's article I read it with great interest. My opinion may differ from his inasmuch as his method of regeneration is a little dangerous. Hydrochloric acid and caustic soda can, as he warns, cause severe burns. The water he produces may be purer than that which I produce but for the fish I have I have found it quite satisfactory. What follows is a rough account of my experiences from about April this year, when I purchased a pair of *Nothobranchius guntheri* until I made my resin container (details of which follow) in August.

When I purchased the *guntheri* I cadged some water from the shop; this was only a small amount and also a source I did not wish to abuse. So I purchased a couple of gallons from Boots, the chemist; this they call purified water. I did not do this very often as the price is very high. I was told by friends at my local club that Permutits would sell me Zeo Carb but only in amounts of 5 lb (not confirmed) at approximately £1 per 1 lb. Also, that this resin could be regenerated with salt. (I am not arguing with Mr. Cooke that the resin he used could have been regenerated with salt.) Anyway, I decided to try Zeo Carb if I could get a small amount at the right price.



If a plastic tap is connected to outlet, the flow can be controlled better. Also, the resin must not be allowed to dry out so the container must be stored full of water. Container must be allowed to almost fill completely and then be tipped back to permit the air trapped under the divider to escape out of the outlet pipe. This is only on the first filling or if replacement of resin becomes necessary.

Another friend knew somebody who could get the resin at 50p per pound for any quantity, but this dried up before I could get some. I had seen in my local shop a pack of de-ionising resin which I purchased at a cost of £1·25 which, as far as the instructions say, is not regenerable. The instructions do state that it should be used in an outside filter and discarded when the water reaches the desired softness. This, as Mr. Cooke stated, was very much against it considering the cost and that fish like a change of water quite often. Having got my resin, the next thing was how did I intend to use it, other than as recommended? So I put about half the pack into a plastic bucket three-quarters full of tap water. Put in an airstone, running fairly fast to stir up the resin as much as possible. After about 24 hours the hardness was down to 30 ppm. (tested with a Scanco Kit). This method was used three times. On the fourth, the hardness only dropped to 70 ppm. so I discarded this water and tried to regenerate my sample with salt. I used ¼-½ lb. of salt in two gallons of water. Put in the airstone and left it to work for 24 hours. After this time I rinsed the resin through three times (6 gallons water), then started the softening process off again. I am glad to say it had worked. Then I thought perhaps this water may contain some quality that will be harmful, so I tried a few experiments.

These were not lengthy or detailed but on the short term everything seems alright. I have not had fish mysteriously die or refuse to spawn or eggs not hatch as a direct result. The only thing was that the method of production was time-consuming, 6 gallons in three days plus a day for regeneration. So I mounted an internal top filter filled with resin inside the bucket. This was better but the flow of water was too slow so I added another air-lift but to no great advantage. About this time, Mr. R. C. Mills, who is a fellow club-member and who had his article published in the August issue of this magazine called "The Perspex Power Filter," suggested I use something like the base of his filter. This I did and aside is a sketch of the finished article. It holds a complete pack of the resin I purchased from which I get approximately 15 gallons of zero ppm. (tested with the Scanco Kit) before regeneration is necessary. This regeneration is also much simpler as about 4 gallons of salt water is prepared and then passed through the system and then rinsed until the taste of salt has gone. The container is then ready to produce soft water again. If the water is passed at a faster or slower speed than I used the ppm. will vary. Also, on the last of the run the ppm. rises; this, as Mr. Cooke found, was the time to regenerate.

Construction details of the container are very simple. Two discs are cut from ¼ in. perspex sheet, one the inside diameter of your tube and one the outside diameter. The smaller one is then drilled to allow water to pass through. A hole is drilled the inside diameter of your short tube 1 in. up from one end of the main tube. The short piece of tube is angle-cut at both ends to suit (angle not critical). Next, fashion three pieces from scrap to make divider supports. (This divider could be omitted as long as plenty of filter wool is packed in to well above top of outlet pipe.) When all pieces are cut and ready, glue into position the three divider supports. When these have set and you're sure they will not fall off, glue bottom or large disc into position. Next comes the outlet pipe; glue this over the hole you drilled in large tube. At this point, if you have one, fit a tap to outlet or bung up with a cork and fill with water. If it holds you are all set to put in divider, wool and resin. If it leaks a little, this can be sealed from outside with the same glue used in construction.

List of materials:

12 in. length of ½ in. or ¾ in. perspex tube 3 in. or 4 in. diameter.
8 in. × 4 in. × ¼ in. perspex sheet.
Short length ⅜ in. or ½ in. perspex tube.
Small amount of perspex adhesive.

News 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.

MEMBERS from both Bedworth and Loughborough Societies were invited by the **Leicester A.S.** to take part in an inter-Society Table Show. There were four classes in the table show, namely Barbs; Characins; A.V. of Pairs; Catfish and Loaches. C. Cartwright, of Leicester Society, presented a challenge shield, to be held by the Society with the most points, which they will hold until the next challenge meeting. Leicester Society were the winners with 48 points, Bedworth being very close with 47 points, and Loughborough having 9 points. The speaker for the evening was Peter Bird from St. Albans, and the lecture he gave on the Breeding, Rearing and Feeding of Toothcarps, was most interesting. Mr. Withers came along with Mr. Bird to show slides on the subject, which they had photographed between them, and these were of outstanding quality and a credit to them both. In September members spent the day at Dudley Zoo, for the M.A.A.S. convention. Two ot the members were successful in the Table Show. N. Giles had a first with Gold Star in the Coldwater Class, and D. Harding a fourth with Furnished Tropical Aquarium.

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THE **Independent A.S.** acted as hosts to the North West London Group in the fourth leg of an annual competition with the following results: Independent 93 points; Riverside 66 points; Hendon 55 points; Anson 49 points; Hampstead 22 points; Hornsea 5 points. The Best Fish in Show went to Independent with a Limia vittata and the judge was K. Nutt. During judging members took part in a Criss Cross Quiz.

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THE following officers were elected at the annual general meeting of the **Ilfracombe and District A.S.**: Chairman, P. Clemence; Social secretary and general secretary, L. C. Rudd; treasurer, H. Hancock; show secretary, K. Arscott; news editor, Mrs. P. Crome; catering officer, Mrs. J. Clemence. Meetings are held fortnightly and a full programme of events has been drawn up, including table shows, film shows, lectures and quizzes. The annual dance will be held on the 21st April, 1972, incorporating final club show "Champion of Champions." The biggest venture will be the Society's first "Open Show" on Sunday, 7th May. Visitors are welcome at any of the meetings, which are held on Thursdays at 8 p.m. Any secretaries who have films or slide shows for hire, please write the secretary.

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RECENTLY the **Bournemouth A.S.** were hosts to the New Forest A.S. and the Salisbury and District A.S., when the three clubs met for the Final of the Inter-Club Quiz and Bottle Show. The result of the quiz was a win for Salisbury, with Bournemouth coming second, and the New Forest third. The result of the Bottle Show was the same, and the classes chosen had been Tropical Catfish, Mollies/Swordtails, and Dwarf Cichlids. The Bottle Show had been judged throughout the series by D. Jones, F.B.A.S. "B", of Southampton. On the day before, the Bournemouth A.S. had been one of several clubs attending the A.S.A.S. Convention at St. Gregories Hall, Salisbury, where members took thirteen awards. The host Club, Salisbury, arranged the event well, and a lecture by Mr. Soper on "Fish Nutrition" was very well received. Anyone interested in fishkeeping will be welcome at the meetings, which are held on the first Monday in each month, at Kinson Community Centre, Pelhams Park, Kinson, Bournemouth.

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RECENT Table Show winners of the **Bishops Cleeve A.S.** were as follow: *August:* Anabantids: 1 and 4, F. Scrivin; 2, L. Gamblin; 3, J. Hawkins. *September:* Mollies, Sailfin: 1, A. Heels; 2, F. Scrivin; 3, J. Bishop. Black Mollies: 1 and 2, P. Greenwood; 3, R. Smythe. *October:* Barbs: 1, K. Burton; 2, J. Hawkins; 3, T. Evens; 4, A. Heels. The Club's next year's open show will be held at Tythe Barn, Evesham Road, Bishops Cleeve, Cheltenham, Glos., on 11th June, 1972. Further information later.

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A HIGHLY successful and interesting evening was enjoyed at the October meeting of the **Chelmsford A.S.**, with a welcome return visit by Bernard Pye of Brentwood, who gave a talk and slide show on Aquarium Photography. This was well illustrated and certainly of great interest. Members applauded the gaining of the third prize—the Society's first venture in the Furnished Aquarium Class — at the E.L.A.P.A. Those responsible for this effort were Mrs. Bevis, Messrs. Gee, Norris, Birds. The prizewinners for the table show of Cichlids were 1 and 2, T. Heath; 3, J. Henderson. The evening closed with a sale of fish and plants, and five new members joined the Society.

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THE **Three Counties Group A.S.**, who meet every second Wednesday in the month at the Blagrave Arms, Reading, have had a very enjoyable year. The Six Fish League was won by Basingstoke A.S., but result of the Quiz League are not available as there is still one round to go. All members of the Three Counties Group also belong to the Federation of British Aquatic Societies and attend assemblies. The League matches are judged by Federation judges, to whom the Society's thanks are extended.

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A TOTAL of 595 fish were entered for the **East of Scotland A.S.** inter-club show, 3rd October, and over 400 people attended. Results were: 1, Dunfermline; 2, Perth; 3, Dundee; 4, Edinburgh; 5, Arbroath; 6 (equal), Kirkcaldy and Moray; 8, Fintry; 9, North Berwick; 10, Carnoustie. Class winners were: Platies: 1, S. A. Hutchison (Perth); 2, J. D. Beaton (Dunfermline); 3, J. Allan (Perth). Swordtails: 1, G. Pratt (Dundee); 2, G. Anderson (Fintry); 3, W. Reid (Dunfermline). Barbs "A": 1, S. Johnston (Dunfermline); 2, A. Thomson (Perth); 3, E. Reedy (Dunfermline). Barbs "B": 1, H. W. Finlay (Perth); 2, J. S. Thomson (Perth); 3, T. C. Smith (Arbroath). Sharks: 1, A. Bett (Perth); 2, I. Henry (Dunfermline); 3, P. C. Smith (Arbroath); E.L.T.C.: 1, S. Johnston (Dunfermline); 2, G. Reid (Edinburgh). Siamese Fighters: 1, M. Dorward (Kirkcaldy); 2, R. McFarlane (Perth); 3, J. P. Turnbull (Edinburgh). Gouramis "A" (leeri): 1, I. Bruce (Dunfermline); 2, G. Law (Arbroath); 3, G. Pratt (Dundee). Gouramis "B" (under 3in.): 1 and 2, W. Russell (Dundee); 3, W. Brown (Dunfermline). Gouramis "C" (over 3in.): 1, A. Bett (Perth); 2, J. McDonald (Moray); 3, D. Parker (Dunfermline). Large Cichlids: 1, G. Pratt (Dundee); 2 and 3, R. Stephen (Arbroath). Dwarf Cichlids: 1, J. Thomson (Perth); 2, J. Cuthbertson (Dunfermline); 3, A. Thomson (Perth). Guppies: 1, I. Henderson (Perth); 2, A. Aitken (Edinburgh); 3, W. Russell (Dundee). Mollies: 1, D. Parker (Dunfermline); 2, G. Reid (Edinburgh); 3, T. Symonds (Dunfermline). Characins "A": 1, G. Ross (Kirkcaldy); 2, F. Birnie (Edinburgh; 3, W. Russell (Dundee). Characins "B": 1, I. Henry (Dunfermline); 2, J. Thomson (Perth); 3, J. Spence (Edinburgh). Characins "C": 1, G. Chalmers (Fintry); 2, W. Adams (Dunfermline); 3, F. Birnie (Edinburgh). Rasboras: 1, J. Turnbull (Edinburgh); 2, H. Hoey (Dunfermline); 3, G. Pratt (Dundee). Danios: 1, A. Thomson (Perth); 2, I. Henry (Dunfermline); 3, W. Brown (Dunfermline). Tropical Minnows: 1 and 2, J. Beeton (Dunfermline); 3, I. Hendry (Dunfermline). Catfish "A": 1, D. Parker (Dunfermline); 2, F. McGuire (Dunfermline); 3, P. Stokeld (North Berwick). Catfish "B": 1, G. Law (Arbroath); 2, F. McGuire (Dunfermline); 3, L. Cumming (Perth). Loaches: 1 and 3, S. Kelly (Dundee); 2, T. Clarke (Arbroath). Coldwater: 1, 2 and 3, T. McLean (Edinburgh). Breeders (Livebearers): 1 and 2, S. Johnstone (Dunfermline); 3, A. Scott (Edinburgh). Breeders (Egglayers): 1, I. McLaren (Perth); 2, S. Johnstone (Dunfermline); 3, J. Spence (Edinburgh). A.O.S.: 1, W. Brown (Dunfermline); 2, S. Johnstone (Dunfermline); 3, W. Reid (Dunfermline).

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THE **Keighley A.S.** Annual Members' Show was held in October, when Mr. Hemingway of Batley spoke on breeding Characins. The results were as follow: Livebearers: 1, Mr. Ibbotson; 2, Mr. Beckett; 3, Mr. Hart. Barbs: 1, Mrs. Taylor; 2, Mrs. Gear; 3, Master Mosley. Carps and Minnows: 1, Mrs. Heap; 2 and 3, Mrs. Smith. Characins: 1, Mr. Hart; 2, Master Beckett; 3, Master Mosley. Anabantids: 1, Master Beckett; 2, Mr. Mosley; 3, Mr. Brown. Cichlids: 1, Mr. Taylor; 2, Mr. Hart; 3, Mr. Mosley. Catfish and Loach: 1 and 3, Mr. Mosley; 2, Mr. Taylor. A.O.V.: 1, Mr. Mosley; 2, Mr. Smith; 3, Mr. Taylor. Breeders: 1 and 2, Mrs. Gear; 3, Mr. Mosley. A.V. Pairs: 1 and 2, Mrs. Gear; 3, Mr. Coles. A.V. Juniors: 1, Master Mosley; 2, Master Beckett; 3, Master Cutting. Coldwater: 1, Mr. and Mrs. Liddimore; 2 and 3, Mr. Mosley. Toothcarps: 1, Mrs. Beckett; 2, Mrs. Gear; 3, Mr. Mosley. The Junior gaining most points and winning the K.B. trophy was Master D. Mosley. The Best Fish in Show award was won by J. Mosley.

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AN enjoyable visit to the B.A.F. was made by the **Harrogate and District A.S.** At the October meeting, the main event of the evening was a discussion about the trip to the B.A.F., and in addition there was the Table Show, which at this meeting was for Fighters, but in this class there was only one entry, which was by Mrs. Atkinson. In the A.O.V. class the result was 1, Mrs. Atkinson, Khuli Loach, which was also Best Fish in Show; 2, Mrs. Cook, Weather Loach; 3, Mr. Pegnall, Brown Acara. The judges were D. Foster and P. Stothard. There was also the usual auction and a raffle. To finish off the evening, D. Taylor gave a short talk on breeding Kribensis.

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OFFICERS elected at the recent annual general meeting to serve the **East London Aquarist Association** are as follow: President, Percy Campkin; vice-presidents, F. Arnold, A. Field, J. Bryden, F. Petto and R. Taylor; chairman, M. Pearson; vice-chairman, G. Green; treasurer, A. Harris; show organiser, J. Boss; magazine editor, K. Wrightson; librarian, C. Sweeting; equipment officer, K. Priest; F.B.A.S. delegate, J. Boss; committee members, J. Deveril and G. Arrow; secretaries, General, Peggy Harris, Show, F. Vicker; Social, Janet Arrow, Programme, A. Bennett, Press, R. Dodkins. The 1972 programme includes an annual dinner and dance, two social evenings, at least four inter-club competitions, home furnished aquaria and pond competitions, club table shows, numerous outings, two full shows, plus two meetings each month. Any aquarist interested and who would like to join, please come along to Ripple Road School, Barking, Essex, on the first and/or the

third Friday of the month. A warm welcome is assured. Alternatively, contact the general secretary, Peggy Harris, 86 Leigh Road, London, E.6.

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MEMBERS of the **Castleford and District A.S.** were congratulated by Ernest Clowes on their wins at open shows. He was also pleased to say that quite a few of the novice members were showing at open shows with a certain amount of success. Ian Heptinstall and Gary Thickbroom, two of the junior members, aged fifteen, then gave an excellent talk and demonstration on cultivating live food. Results of the Table Show were as follow: Juniors—A.O.V.: 1 (and Best Fish), Alan Thomas; 2, Harvey Nock; 3, Andrew Barret. A.V. Male: 1, Andrew Barret; 2, Mrs. Asquith; 3, Darrel Hiscock. Dwarf Cichlids: 1, Lynne and Suzanne Pitchford; 2, S. and A. Thomas; 3, Mr. and Mrs. Stevens and Denise. Large Cichlids: 1, S. and A. Thomas.

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THERE were 784 entries for the **Doncaster and District A.S.** Open Show. The results were as follow: Guppies: 1, G. Gillespie (Castleford); 2, G. Andrews (Hull); 3, Mr. and Mrs. Stevens (Castleford). Platies: 1, C. Marsden (Worksop); 2, P. Booth (York); 3, N. Flatt (Stockton). Swordtails: 1, H. Hubberd (Peterlee); 2, Mr. and Mrs. Roberts (Morecambe Bay); 3, T. Douglas (Hull). Mollies: 1, H. Blades (Cresswell); 2, C. Marsden (Worksop); 3, J. Igoe (Sherwood). A.O.V. Livebearers: 1, E. and S. Clowes (Castleford); 2, I. and R. Heptinstall (Castleford); 3, J. Hall (Aireborough). Small Characins: 1, J. Robertson, Jr. (Mt. Pleasant); 2, I. and R. Heptinstall (Castleford); 3, F. Martin (Alfreton). A.O.V. Characins: 1, G. Thickbroom (Castleford); 2, C. Parnell (Cresswell); 3, R. Shanks (Mt. Pleasant). Dwarf Cichlids: 1, H. Kuhn (Lincoln); 2, A. Thomas (Bedworth); 3, F. Martin (Alfreton). A.O.V. Cichlids: 1, K. Aubrey (Privateers); 2, R. Whitaker (Privateers); 3, E. Hooper (Sherwood). Angelfish: 1, Mrs. Igoe (Sherwood); 2, Mrs. Blades (Cresswell); 3, J. Scarle (Selby). Small Barbs: 1, Mrs. Ground (Sandgrounders); 2, P. Carey (York); 3, Mr. and Mrs. Wells (Doncaster). A.O.V. Barbs: 1, Mr. and Mrs. Hubbert (Derby Regent); 2, E. Smith, Jr. (Sheffield); 3, B. Singleton (York). Cory Cats: 1, M. Buxton (Sheffield); 2, W. Redmond (Sunnybrow); 3, K. Cowen (Gainsborough). A.O.V. Cats: 1, J. Waller (Half Moon); 2, Mr. and Mrs. Gates (Castleford); 3, I. Stephenson (York). Loaches: 1, Master M. Igoe (Sherwood); 2, K. Thomas (Lucas A.P.S.); 3, F. Martin (Alfreton). Toothcarps, 1 and 3, A. Curchin (Swillington); 2, E. Hooper (Sherwood). Small Anabantids: 1, J. Summers (Doncaster); 2, W. Gilding (Gainsborough); 3, I. Stephenson (York). A.O.V. Anabantids: 1, J. Scarle (Selby); 2, H. Hubberd (Peterlee); 3, Mr. and Mrs. Cohen (Castleford). Fighters: 1 and 2, J. S. Hall (Aireborough); 3, Mr. and Mrs. Cowen (Castleford). Sharks and Foxes: 1, J. Scarle (Selby); 2, R. Whitaker (Privateers); 3, G. Gillespie (Castleford). Rasboras, Danios and Minnows: 1, I. and R. Heptinstall (Castleford); 2, E. and S. Clowes (Catsleford); 3, Mr. and Mrs. Hubbert (Derby Regent). A.O.V. Tropicals: 1, I. and R. Heptinstall (Castleford); 2, H. Hubberd (Peterlee); 3, L. King (Doncaster). Pairs (Livebearers): 1, I. and R. Heptinstall (Castleford); 2 and 3, Mr. and Mrs. Broadhead (Huddersfield). Pairs (Egglayers): 1, P. Carey (York); 2, Mr. Donaldson (York); 3, K. Aubrey (Privateers). Breeders (Livebearers): 1, Mr. and Mrs. Cohen; 2, I. and R. Heptinstall (Castleford); 3, N. R. Gibson (Huddersfield). Breeders (Egglayers): 1, Mr. and Mrs. Wells (Doncaster); 2, N. Flatt (Stockton); 3, E. and S. Clowes (Castleford). A.V. Coldwater: 1, Master A. Kaye (Top Ten); 2, J. S. Hall (Aireborough); 3, D. H. Hartley (Scarborough). Junior (Livebearers): 1, Miss A. Gregory (Nelson); 2, Miss H. Johnson (Ashton-U-Lyne); 3, W. Gilding (Gainsborough). Junior (Egglayers): Miss H. Johnson (Ashton-U-Lyne); 2, A. Thomason (Castleford); 3, Miss A. Gregory (Nelson). Novice (Livebearers): 1, P. Carr (Sheffield); 2, Mr. and Mrs. Clarke (Barnsley); 3, L. Kirlew (York). Novice (Egglayers): 1, Mr. and Mrs. Clarke (Barnsley); 2, A. Barrett (Castleford); 3, B. Gabe (Chesterfield). Best Fish in Show: Mr. and Mrs. Hubbert, Derby Regent (Lemon Fin Barb). Number of Entries: 784. Number of Societies taking part: 44.

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THE first Open Show of the **West Cumberland A.C.** was extremely successful and there were 218 entries. Mr. Gordon Burton of Penrith, a member of the Border Club collected the Trophy for Best in Show, and with fourteen awards from eighteen exhibits, topped the points list. Results: Best in Show: G. Burton (Border). Best Exhibit, Section A: A. L. Leadbetter (Fleetwood). Platys: 1, G. Burton; 2, B. Bray (W. Cumb.); 3, H. Warring (Loyne); 4, Mr. Moore, Border. Swords: 1 and 3, G. Burton; 2, G. Scott (W. Cumb.); 4, J. Parker (W. Cumb.). Mollies: 1 and 3, L. Leadbetter; 2, H. Warring; 4, L. Sharp (W. Cumb.). Guppys: 1, W. Train (W. Cumb); 2, J. Parker; 3, R. Strand (W. Cumb); 4, P. and H. Bachelor (Loyne). A.O.V. Livebearer: 1, Mr. and Mrs. Jones (Border). Best Exhibit—section B: D. R. Standen (Loyne). Dwarf Cichlids: 1, L. Leadbetter; 2, J. Parker; 3, Mr. and Mrs. Jones; 4, Mr. and Mrs. Howarth (Morecambe Bay). A.O.V. Cichlid: 1, D. R. Standen; 2, P. and H. Bachelor; 3, E. Wilson (W. Cumb. and Bristol); 4, E. W. Hodgson (Border). Best Exhibit—section C.: R. Strand. Small Barbs: 1, R. Strand; 2, E. W. Hodgson; 3, G. Robinson (Border); 4, B. Black (Fleetwood). A.O.V. Barbs: 1, G. Burton; 2, Mr. and Mrs. Howarth; 3, L. Sharp; 4, Mr. and Mrs. Jones. Best exhibit—section D: G. Burton. Small Characins: 1, P. and H. Bachelor; 2, Mrs. M. Martin (W. Cumb.); 3, Mr. and Mrs. Jones; 4, R. Strand. A.O.V. Characins: 1 and 3, G. Burton; 2, D. R. Standen; 4, G. Robinson. Best exhibit—section E: R. Strand. Sharks and Foxes: 1, Mr. and Mrs. Howarth; 2, R. B Mitchell (W. Cumb.); 3, T. Dean (Fleetwood); 4, R. Hall (W. Cumb.). Rasb., Danio, Minn.: 1, 3 and 4, R. Strand; 2, E. W. Hodgson. Best exhibit—section F: T. Dean. Catfish: 1, T. Dean; 2, P. and H. Bachelor; 3, G. Scott; 4, D. Robinson (Border). Loaches: 1, D. R. Standen; 2 and 4, G. Burton; 3, E. W. Hodgson Best exhibit—section G: E. Wilson. A.V. Coldwater: 1, 3 and 4, E. Wilson; 2, H. Warring. Best exhibit—section H: W. Riddle (W. Cumb.). Anabantids: 1 and 2, L. Leadbetter; 3, Mr. and Mrs. Howarth; 4, P. and H. Bachelor. A.O.V.: 1, W. Riddle; 2, G. Burton; 3, P. and H. Bachelor; 4, A. Kennon (W. Cumb.). Best exhibit—section J: J. Hall (W. Cumb.). Pairs (Livebearers): 1, G. Burton; 2, L. Leadbetter; 3, R. Mitchell (Fleetwood); 4, R. Higgins (W. Cumb.). Pairs (Egglayers): 1, J. Hall; 2, I. Todd (W. Cumb.); 3, P. and H. Bachelor; 4, G. Burton. Best exhibit—section K: G. Scott. Breeders (Livebearers): 1, J. E. Sanderson (Lakeland). Breeders (Egglayers): 1, G. Scott; 2, E. Wilson; 3, G. Robinson; 4, Mr. and Mrs. Jones.

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AT the annual meeting of the **Yeovil and D.A.S.** members were congratulated for their high attendance during past year at the monthly meetings. With a membership of 53 and a very successful Open Show the Treasurer, M. Hulbert, was able to report an increase in the Society's financial reserve. The President, S. Langdon, said that with the twenty-first year just around the corner the Society should think about rounding up all the old members for a celebration.

Miss Dawn Forward, a Junior member, was presented with a Special Card and Medallion for coming second in the Clubman of the Year award. The following officers and Committee were elected for the coming year, President: S. Langdon; Chairman, F. Lange; Vice Chairman: A. Nicholls; Secretary: C. Bushell, 25 Mayfield Road, Yeovil, Somerset; Treasurer: M. Hulbert; Show Manager: D. Phinn; Show Secretary: K. Wright, 24 Elmhurst Road, Yeovil, Somerset. Committee: R. Cox, R. Heather, D. Baker, A. Ettles, A. Rendell and Mrs. Baker. Show Committee: Mrs. Nicholls, Mrs. Lange, Mrs. Hulbert, and Mrs. Bushell.

THE **Bristol Tropical Fish Club** were given a fine talk on "Water Chemistry" by club member, P. Lewis at the September meeting. As a qualified chemist he was able to deal with the finer points of water composition, measurements of hardness and acidity and the necessary techniques for obtaining specific water values. He concluded by defining the requirements of the various species of tropical fish. During the interval a Table Show was held for Characins and A.O.V. with the following results: Characins (Open and Novice): 1, R. Lawrence; 2 and 3, W. Ilager. A.O.V. (Open): 1, G. Furber; 2 and 3, Mrs. Martin. A.O.V. (Novice): 1, 2 and 3, Mrs. Martin.

At the October meeting the Club were fortunate in obtaining the services of Barrie Evans of Weston-Super-Mare as the month's speaker. The subject he chose, "Siamese Fighters", was accompanied by a slide show showing the breeding and growth cycle of this species and photographed personally by the speaker. This talk proved to be of an extremely high standard. During the interval the speaker kindly judged the Table Show with the following results: Breeders, Egglayers (Open): 1, Mrs. K. Martin; 2 and 3, R. Lawrence; (Novice): 1, Mrs. K. Martin; 2 and 3, R. Lawrence. Breeders, Livebearers (Open): 1 and 3, G. Furber; 2, Mrs. K. Martin; (Novice): Mrs. K. Martin.

During October the club held an outing to Belle Vue for the Aquarists' Festival, the trip being extremely well supported. A warm welcome is extended to visitors and new members at their monthly meetings held on the third Thursday of each month at the National Dock Labour Board Social Club, Welsh Back, Bristol 1.

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THE **Mid-Kent A.S.** first October meeting proved to be a very informative and enjoyable evening, with an interesting talk by John Marshall on "Making Your Own Fish-Food." The Table Show results—A.O.S. Egglayers: 1, D. Simpson; 2 and 4, G. Regan; 3, Mr. Gurr. The Committee were pleased to see two prospective new members attending. The second meeting held in October was a slide show entitled "The Braz Walker Show" which was a last minute change as the film "The Wonders of the Deep" which was to have been shown was unfortunately not returned to the owners in time to be despatched. The Table Show results—A.O.S. Cats: 1 and 2, D. Simpson; 3 and 4, L. Getley. The fishes were judged by John Hellingham, assisted by R. Baker, both of Tonbridge A.S. The Committee and members of Mid-Kent A.S. would like to wish the Secretary, D. Simpson, the best of luck in his venture when he opens his aquaria shop called "The Sittingbourne Aquaria" at 9 Crescent Street, Sittingbourne, Kent.

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OFFICERS elected at the **Bracknell A.S.** annual general meeting were as follow: Presidents: Ken and Joyce Roberts; Chairman: B. Johnson; Vice-Chairman: M. Carter; Treasurer: K. Phillips; Secretary: W. Crewe, The Homestead, Western Road, Bracknell; Show Secretary: L. Gordan, 62 Fernbank Place, Ascot, Berks. Tel.: Winkfield Row 3400.

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RESULTS of the **Bristol A.S.** Open Show were as follow: Common Goldfish: 1 and 3, H. T. Jago; 2, W. Ham; 4, F. Radford. Bristol Shubunkins (3 in.): 1, 2, 3 and 4, L. G. Emery. Bristol Shubunkins (5 in.): 1 and 2, L. G. Emery 3, D. S. Langdon; 4, R. J. Pinnock. Veiltails: 1, R. J. King; 2, S. Tibble; 3, D. S. Paul; 4, L. G. Emery. Moors: 1, 3 and 4, T. Roberts; 2, N. O. Grimston. Telescopes,

Lionheads, Celestials, Pearl-scaled, Bubble Eyes: 1, R. M. Whittington; 2 and 4, L. G. Emery; 3, K. C. Juson. Orandas: 1, R. King; 2 and 3, K. C. Juson; 4, D. S. Paul. Nymphs and Comets: 1 and 3, Mrs. V. King; 2, K. C. Juson; 4, Miss A. H. Morgan. Fantails, Scaled: 1, V. Collins; 2, D. S. Paul; 3 and 4, Miss J. Leach. Fantails, Calico: 1 and 4, F. Radford; 2 and 3, C. H. Barratt. A.O.V. Pond and River: 1 and 3, W. Ham; 2, F. Radford; 4, M. Butcher. Bristol Shubunkins (Bred 1971): 1 and 4, K. C. Juson; 2, R. J. Pinnock; 3, L. G. Emery. Moors (Bred 1971): 1 and 2, T. Roberts; 3, S. Tibble; 4, H. T. Jago. A.O.V. Fancy Fish (Bred 1971): 1, 2 and 3, R. J. King; 4, K. C. Juson. 4 Singletails (Bred 1971): 1, L. G. Emery; 2, K. C. Juson; 3, W. Clark; 4, H. J. Whiting. 4 Fancy Fish (Bred 1971): 1, 2 and 4, S. Tibble; 3, R. J. King. Bristol Shubunkins (Matched Pairs): 1, H. J. Whiting; 2 and 3, K. C. Juson; 4, W. Clark. Novice Shubunkins: 1, 2 and 4, Miss V. P. Ruckey; 3, Mrs. A. Wicks. Furnished Aquaria (Coldwater): 1, P. Lloyd; 2, B. Jacobs; 3, C. J. Bell. Furnished Aquaria (Tropical): 1, P. Lloyd; 2, R. Bishop. Furnished Aquaria (Inter-Club): 1, Bristol A.S. Aquatic Plants (Coldwater): 1, Miss A. H. Morgan. Aquatic Plants (Tropical): 1, D. A. Lewis; 2, Miss A. H. Morgan. Fighting Fish: 1, J. Avery; 2, T. Hamshire. Labyrinths: 1, R. Bishop; 2, C. J. Lelong; 3, S. Bethell; 4, K. R. Jones. Barbs: 1, B. Jacobs; 2, C. J. Lelong; 3, S. Bethell; 4, K. R. Jones. Characins (Bl and H): 1, M. Butcher; 2, N. J. Lavis; 3, P. Lloyd. A.O.V. Characins: 1, S. Green; 2, E. Wilson; 3, C. J. Lelong; 4, N. J. Lavis. Cichlids: 1 and 2, S. Green; 3, M. Samuels; 4, J. Hamshire. Angels: 1 and 2, T. Hamshire; 3, N. J. Lavis; 4, R. Watts. A.O.V. Egglayers: 1, G. R. Furber; 2 and 4, K. R. Jones; 3, S. Bethell. Catfish: 1, M. Taylor; 2 and 3, S. Green; 4, R. Bishop. Guppies: 1, 2 and 4, Mrs. S. F. Langdon; 3, C. D. Truman. Guppies (Female): 1 and 2, H. H. Bell; 3 and 4, P. A. Lewis. Swordtails: 1, R. Watts; 2, M. Butcher; 3, S. Bethell; 4, K. R. Jones. A.O.V. Livebearers: 1, M. Powell; 2 and 4, S. Bethell; 3, J. Avery. Breeders, Livebearers: 1, M. Samuels; 2, M. Taylor; 3, C. and A. Truman; 4, R. Watts. Breeders, Egglayers: 1, B. Jacobs 2, P. A. Lewis; 3, S. Green.

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ON Tuesday, 21st December, the **Aberdeen A.S.** will hold a meeting in the Y.M.C.A. Rooms, Union Street, at 7.30 p.m. The evening will take the form of a demonstration of tank glazing and sealing, by C. Cox, of Blackburn. After the break there will be a discussion panel, when the members can ask their questions. The Table Show for the evening will have three classes: 1, Breeders Trio (spawned after 1st June, 1971); 2, Single Barb; 3, Single Loach, Shark or Spiny Eel.

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THE results of the **Buxton and District A.S.** first Open Show were as follow: Guppies: 1, H. Ormesher (Sandgrounders); 2, D. Naylor (Oram); 3, B. Whitelam (Dukeries). Mollies: 1, J. Igoe (Sherwood); 2, Mr. and Mrs. Grimshaw (Sunnybrow); 3, K. Thomas (Lucas). Platies: 1, M. Clark (North Staffs.); 2, J. S. Hall (Aireborough); 3, A. Thomas (Bedworth). Swordtails: 1, Mr. Rhodes (Scunthorpe); 2, Mr. and Mrs. Pogson (Scunthorpe); 3, D. Godehere (Stockbridge). Section winner: H. Ormeshar. Small Barbs: 1 and 2, Mr. and Mrs. J. Dawson (Oram); 3, R. Holmes (Derby Regent). Large Barbs: 1 and 3, Mr. and Mrs. Hubert (Derby Regent); 2, Mr. and Mrs. J. Dawson (Oram). Section winner: Mr. and Mrs. Hobert. Small Gouramies: 1, D. Sewell (Sherwood); 2, S. Dobbs (Independent); 3, K. Callow (Belle Vue). A.O.V.: 1, Mr. and Mrs. Cobb (Belle Vue); 2, W. Smith (Merseyside); 3, I. Thorne (Northwich). Fighters: 1, J. S. Hall (Aireborough); 2, D. Jackson (Dukeries); 3, F. Craven (Buxton). Section winner: D. Sewell. Angels: 1, A. Ashton (Buxton); 2, A. K. Jackson (Belle Vue); 3, D. Sewell (Sherwood). Dwarf: 1, K. Ankers (North Staffs.); 2, K. Callow (Belle Vue); 3, B. Knowles (North Staffs.). A.O.V.: 1, B. Knowles (North Staffs.); 2, E. Hooper (Sherwood); 3, C. Huckle (Sherwood). Section winner: B. Knowles. Large Characins: 1, A. B. Cass (Buxton); 2, H. Ormesher (Sandgrounders); 3, Mr. and Mrs. Heap (Belle Vue). Small Characins: 1, A. K. Jackson (Belle Vue); 2, Mr. and Mrs. Grimshaw (Sunnybrow); 3, Leonard and Booth (Independent). Section winner: A. B. Cass. A.V. Killifish: 1, B. Hughes (Stone and B.K.A.); 2 and 3, E. Hooper (Sherwood). Section winner: B. Hughes. A.O.V. Tropical: 1, H. Ormesher (Sandgrounders); 2, Mr. Heap (Belle Vue); 3, K. Ankers (North Staffs.). Section winner: H. Ormesher. Sharks and Labeos: 1, P. Ebbersll (Hyde); 2, K. Ankers (North Staffs.); 3, J. Cooper (Derby Regent). Rasboras, Danios, White Clouds: 1, H. Blades (Cresswell); 2, K. Ankers (North Staffs.); 3, Mr. and Mrs. Hubert (Derby Regent). Section winner: H. Blades. Corydoras: 1, D. Sewell (Sherwood); 2, K. Ankers (North Staffs.); 3, Mr. Grimshaw (Sunnybrow). Loaches: 1, Mr. and Mrs. Dean (Ellesmere Port); 2, F. Mardin (Alfreton); 3, L. Rowbotsom (Hyde). A.O.V.: 1, J. S. Mooney (Glossop); 2, Mr. and Mrs. Wells (Doncaster); 3, S. Seymour (Merseyside). Section winner: J. S. Mooney. Pairs (Egglayers): 1, F. Mardin (Alfreton); 2, H. Blades (Cresswell); 3, P. Bailey (Hyde). Pairs (Livebearers): 1, J. S. Hall (Aireborough); 2, D. Sewell (Sherwood); 3, A. Hirst (Hyde). Section winner: F. Mardin. Mini Jars: 1, Mr. and Mrs. Heap (Belle Vue); 2, T. P. Jerram (Derby Regent); 3, P. Wilson (Independent). Section winners: Mr. and Mrs. Heap. Breeders and Teams (Egglayers): 1, Mr. and Mrs. Wells (Doncaster); 2, Mr. Tompkinson (Glossop); 3, J. E. Shaw (Oxram). Breeders and Teams (Livebearers): 1, Mr. and Mrs. Cobb (Belle Vue); 2, R. Knowles (Northwich); 3, B. Black (Fleetwood). Section winners: Mr. and Mrs. Wells. Furnished Aquaria: 1, I. Thorne (Northwich); 2, A. Ashton (Buxton); 3, Robertson and Holmes (Derby Regent). Section winner: I. Thorne. Fancy Goldfish: 1, 2 and 3, J. S. Hall (Aireborough). Coldwater: 1 and 2, J. S. Hall (Aireborough); 3, Mr. and Mrs. Cobb (Belle Vue). A.O.V.: 1, J. S. Hall (Aireborough); 2, T. Clarke (North Staffs.); 3, C. Huckle (Sherwood). Section winner: J. S. Hall. The president's trophy and *The Aquarist and Pondkeeper* gold pin, for Best in Show, was won by H. Ormesher (Sandgrounders) with a spiney Box Fish. The King British trophy for the society with most points was won by Sherwood from Nottingham. (617 entries were benched and there were 36 visiting societies.)

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THE Open Show of the **Walthamstow and District A.S.** was well supported by aquarists from a wide area. There were 577 individual fish entries (53 Coldwater, 524 Tropical) and 23 furnished tanks. Club Furnished—Tropical: 1, Enfield and D.A.S. Miniature Furnished: 1, B. Baulsom; 2, D. Goodbody; 3, A. Chandler; 4, W. Patrick. Barbs: 1, Mrs. B. Cowell; 2, L. Jordan; 3, J. Bellingham; 4, M. Strange. Characins (other than Class Ca): 1, D. Lambourne; 2, Mrs. J. Twine; 3, Mr. and Mrs. P. Hudson; 4, S. Cowell. Ca—Hyphessobrycon, Hemigrammus, Cheirodon: 1, R. Bowes; 2 and 4, A. Chandler; 3, S. Cowell. Cichlids (other than Class Db): 1, Mrs. J. Fordham; 2, K. Adams; 3, Master J. Fordham; 4, A. Kinsey. Db—Apistogramma, Pelmanochromis, Nannacara: 1, L. Jordan; 2, Mrs. J. Fordham; 3, R. Bowes; 4, I. Mathieson. Fighters: 1, P. Cottle; 2, S. Hedges; 3, Mrs. Salisbury; 4, S. W. Applin. A.O.S. Labyrinth: 1 and 3, S. Cowell; 2, D. King; 4, Mrs. J. Twine. Egglaying Toothcarps: 1, R. Roberts; 2, F. Cattell; 3, C. Thomas; 4, R. Johnston. Tropical Catfish: 1 and 3, G. Greenhalf; 2, D. Lambourne; 4, J. Butts. Corydoras and Brochis: 1, R. Brenchley; 2, Mrs. M. Nethersell; 3, T. Clark; 4, P. Moye. Rasbora: 1, Mrs. G. Carter; 2, Mrs. D. Mathieson; 3, R. Bowes; 4, D. Lyne. Danios and W.C.M.M.: 1 and 2, R. Bowes; 3, Mrs. G. Carter; 4, A. Kinsey. Loaches: 1, Mrs. P. Lambourne; 2, M. Carter; 3, P. Arnould; 4, A. Day. A.O.S. Tropical Egglayer: 1 and 4, S. Hedges; 2, D. Ellis; 3, P. Arnould. Tropical Pairs: 1, P. Coyle; 2, Mrs. C. Sheldon; 3, P. Brenchley; 4, Mrs. M. Quennell. Guppy (Males): 1, Miss B. Quennell; 2, Mrs. M. Nethersell; 3, Mrs. B. Cowell; 4, Mrs. M. Tucker. Guppy (Females): 1, Mrs. M. Tucker; 2, S. Batts; 3, T. Hedges; 4, Mrs. J. Twine. Swordtails: 1, 3 and 4, R. Day; 2, P. Cottle. Platies: 1, S. Cowell; 2, K. Quennell; 3, Mrs. M. Tucker; 4, S. Mason. Mollies: 1, T. Tucker; 2, S. Cowell; 3, D. King; 4, Mrs. M. Nethersell. A.O.S. (Livebearers): 1, Mrs. D. Cruikshank; 2, R. Bowes; 3, Mrs. J. Stott; 4, Mr. Batts. Singletailed Goldfish: 1 and 2, S. Hedges; 3, H. Berger; 4, D. Daze. Twintailed Goldfish: 1 and 2, G. Fleming; 3, K. Adams; 4, T. Howles. Centrarchidae: 1, M. Carter; 2, T. Hedges; 3, S. Hedges; 4, D. Goodbody. A.O.S. Coldwater: 1 and 4, M. Carter; 2, S. Hedges; 3, H. Berger. Breeders Egglayer (Tropical): 1, A. Chandler; 2, A. Day; 3, Mr. and Mrs. Baulsom; 4, P. Cottle. Breeders (Livebearer): 1, R. Bowes; 2, P. Ginger; 3, E. Bartlett; 4, B. Mather. A.S. Plant: 1 and 3, Mrs. J. Stott; 2, B. Mather; 4, G. Greenhalf.

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THE **Federation of British Aquatic Societies** take this opportunity to wish all their member Societies the Compliments of the Season and Best Wishes for 1972. Support for the Federation during the past year has been very gratifying, and the services to the Societies has been expanded. In addition to the vast amount of effort expended by the Judges and Standards Committee, Publications, Ties and Badges (including Labels, Showjars and Car Badges) and Trophy Secretaries, the appearance of the FBAS Quarterly Bulletin has helped enormously in establishing communications between the Societies and the Federation. The creation of Area Judges and Speakers Panels has resulted in a steady flow of Judges and Speakers being appointed, and the Societies themselves have shown support by donating Perpetual Trophies for awards at Open Shows.

The Federation collaborated with the sponsors in presenting the two major National Shows in London, and already plans are in hand for next season—which will commence with a Federation Dinner Dance. It is hoped that 1972 will prove to be a successful year for the Societies, and the Federation looks forward to their continued support and interest.

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THE **Ealing and District A.S.** (FBAS) would like to thank those twenty Societies who supported Ealing's third Open Show in October. Nearly 550 entries were received, an increase of over one hundred on the previous year. The FBAS judges, Messrs. Baker, Brown, Ellis, Nutt, Tomkins and Towell, performed their thankless task with speedy efficiency, thanks to the organisation of the Show Committee and Stewards under the direction of Show Manager J. Healey and Show Secretary, R. Sellers. Best Fish in Show was a Cynolebias nigripinnis owned by S. Tarrant of Hendon A.S.

Recent talks have included "My Favourite Fish" by A. Blake (Basingstoke and F.B.A.S.), "Angels" by B. Baker (Uxbridge and F.B.A.S.) and a judging competition is planned for a future meeting, when the members will find just how difficult it really is to find the winner.

The Club has lost one of its founder members, B. Ankin, together with J. Ankin, one of its leading Junior members, and in recognition of their services they have been made Honorary Members of the Society.

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RESULTS of the **Anson A.C.** first Open Show were as follow: Club Furnished Aquaria (Tropical): 1, A. R. Chandler (Walthamstow); 2, H. Watts (Hendon); 3, M. Goss (Riverside);

IN AQUARIUM OR POND
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4, A. Pannell (Independent). Barbs: 1, D. W. Armour; 2, A. Blake; 3, Mr. Bisson; 4, Mrs. P. Sawford. Characins: 1, J. Howe; 2, G. Greenhalf; 3, D. Reilly; 4, Mr. Bisson. Class Ca: 1, J. Bannon; 2, L. Brazier; 3, Mrs. Nethersell; 4, Miss N. Lloyd. Cichlid (inc. Angels): 1, 3 and 4, Mr. Strange; 2, Mrs. M. Strange. Class Db: 1, L. Jordan; 2, J. Batts, 3 and 4, Mr. Strange. Labyrinths: 1, D. Reilly; 2, D. King; 3, J. Hughes; 4, Mrs. P. Sawford. Siamese Fighters: 1, Mrs. J. Applin; 2, L. Garrad; 3, Mr. Applin; 4, B. Bisscon. Catfish: 1 and 2, G. Greenhalf; 3, D. Lambourne; 4, L. J. Brazier. Corydoras: 1, G. Greenhalf; 2 and 3, R. Wright; 4, D. Reilly; Rasbora: 1, D. Pun; 2, D. King; 3, Mrs. J. Garrad; 4, Mrs. J. Carter. Danios: 1, A. Wood; 2, D. King; 3, P. Maslin; 4, B. Funnell. Loach: 1, M. Carter; 2, L. Bird; 3, L. Garrad; 4, L. Brazier. A.O.V. Egglayer: 1, G. Greenhalf; 2, Mrs. M. Nethersell; 3, D. Lambourne; 4, J. Howe. Sex Pairs (Egglayers): 1, P. Maslin; 2, B. Bisscon; 3, J. Banton; 4, Mrs. Quennell. Sexed Pairs (Livebearers): 1, D. King; 2 and 3, H. Watts; 4, A. Blake. A.V. Guppy (Male): 1 and 4, Mrs. M. Nethersell; 2, L. Brazier; 3, D. Reilly. Guppy (Female): 1, P. Moye; 2, D. Baggott; 3, Mrs. Quennell; 4, Mrs. P. Sawford. A.V. Swords: 1 and 4, P. Ginger; 2, R. Lovell; 3, Mr. Lecuirot. Platy: 1, A. Blake; 2, Mr. Quennell; 3, B. Funnell; 4, D. Reilly. Mollies: 1, Mrs. Mason; 2, D. Reilly; 3, D. King; 4, Mrs. Nethersell. Class T: 1, B. Funnell; 2, M. Strange; 3, J. Batts; 4, Mrs. Nethersell. Class U: 1, D. Dare; 2, A. Wood; 3, T. Butler; 4, R. Howe. Class Z: 1, H. Watts; 2, R. Newman; 3, J. Parker; 4, M. Goss. Best Fish in Show: L. Jordan. F.B.A.S. Trophy: H. Watts.

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FROM **Sheffield A.S.** the Inter-Society Show results have been announced as follow:—Second Leg (held at Rotherham): Sheffield 8 pts.; Rotherham 4 pts.; Worksop 9 pts.; Doncaster 3 pts. Best Fish in Show: E. Smith (Sheffield). Third Leg (held at Doncaster): Sheffield 11 pts.; Rotherham 1 pt.; Doncaster 3 pts.; Worksop 9 pts. Best Fish in Show: L. Mawson (Worksop). Final Leg (held at Sheffield): Sheffield 15 pts.; Worksop 9 pts.; Rotherham 0 pts.; Doncaster 0 pts. Best Fish in Show: F. Toyne (Sheffield). Final Points: Sheffield 49 pts.; Worksop 35 pts.; Rotherham 6 pts.; Doncaster 6 pts. Sheffield hold the Trophy for 1 year.

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AT the twenty-first Annual Open Show of the **Blackpool and Fylde A.S.**, the Star Prize, a weekend Holiday for Two in Benidorm, was won by Master J. S. Hall, Aireborough, for Competitor gaining most points overall, 40 pts., consisting of 8, 1sts; 6, 2nds; 4, 3rds.

The Best Fish in the Show out of 735 entries was awarded to Mr. and Mrs. Cohen (Castlefeed) for a Dwarf Gourami. Judges were C. Walker, B. Pengilley, M. Jones, L. Wood, assisted by G. Todd and J. Wiseman. Results: Open Individual Furnished Tropical Aquaria: 1, L. Thern (Northwich); 2, B. Littler (Blackpool). Open Individual Tropical or Coldwater Marine Furnished Aquaria: 1, Wright and Howarth (Blackpool). Coldwater Fish (Singletail): Common Goldfish and Comets: 1, Mr. and Mrs. Toyne (Sheffield); 2, J. S. Hall (Aireborough); 3, Mr. Cowdry (Leigh). Shubunkins, Bristol and/or London: 1 and 2, J. S. Hall (Aireborough); 3, Mr. Goodridge. Koi Carp: 1 and 2, J. S. Hall (Aireborough); 3, Mr. Cowdry (Leigh). A.O.V. Coldwater Fish: 1, 2 and 3, J. S. Hall (Aireborough). Moors: 1, Miss J. Baxter (Northern Goldfish); 2, D. Spivey (Leigh); 3, J. S. Hall (Aireborough). Veiltails: 1, J. S. Hall (Aireborough). A.O.V. Fancy Goldfish, Fantails, Orandas and Lionheads: 1, J. S. Hall (Aireborough); 2 and 3, S. Walsh (Accrington). Sweedtails: 1, Mr. and Mrs. Cohen (Castleford); 2, Mr. and Mrs. Roberts (Valley); 3, N. R. Gibson (Huddersfield). Platies: 1 and 3, J. S. Hall (Aireborough); 2, R. Tomkinson (Glossop). Mollies: 1, J. S. Hall (Aireborough); 2, Mr. and Mrs. Lewus (Merseyside); 3, V. Knowles (North Staffs.). Guppies: 1, K. Callow (Belle Vue); 2, D. Tennant (Leyne); 3, Mrs. Cobb (Belle Vue). A.O.V. Livebearers: 1, 2 and 3 J. S. Hall (Aireborough). Characins (up to 3 in. at Show Standard): 1, J. Wright (Alfreton); 2, J. S. Hall (Aireborough); 3, M. Tonge (Oldham). A.O.V. Characins (Bleeding Hearts, etc.): 1, D. Whitehead (Blackpool); 2, K. Parkes (Merseyside); 3, Mrs. Lomax (Merseyside). Anabantids: Small Anabantids (up to 3 in. at Show Standard): 1, Mr. and Mrs. Cohen (Castleford); 2, J. C. Stellar (Sheffield); 3, P. Rodgers (Stretford). Large Anabantids: 1, F. Mulla (Merseyside); 2, C. Thacker (Belle Blue); 3, Mr. and Mrs. Ormisher (Sandgrounder). Fighters: 1 & 2, Mr. and Mrs. Cohen (Castleford); 3, J. Rhodes (Scunthorpe). Minnows: 1, Mr. and Mrs. Norris (Loyne); 2, F. Mulla (Merseyside); 3, Mr. Birchwood (Oldham). Danios: 1, Mr. and Mrs. Cohen (Castleford); 2, Mr. and Mrs. Ross (Belle Vue); 3, Mr. and Mrs. Ormisher (Sandgrounder). Rasboras: 1, D. Chaleton (Merseyside); 2, M. Allsop (Alfreton); 3, M. Tonge (Oldham). Labeos and Sharks, 1: D. Chaleton (Merseyside); 2, Mr. and Mrs. Howarth (Morecambe); 3, L. W. Sillis (F.D.A.S.). Foxes: 1, D. Chaleton (Merseyside); 2, Mr. and Mrs. Cohen (Castleford); 3, Mrs. Cobb (Belle Vue). Barbs (up to 3½ in.): 1, D. Chaleton (Merseyside); 2, V. Davidson (M.P.A.S.); 3, Mr. and Mrs. Cohen (Castleford). A.O.V. Barbs: 1, K. Parkes (Merseyside); 2, N. R. Gibson (Huddersfield); 3, F. Mulla (Merseyside). Toothcarps: 1, Mr. Reynolds (B.K.A.); 2, M. Tonge (Oldham); 3, Mrs. Gear (Keighley). Cichlids (Dwarf): 1, P. Rodgers (Stretford); 2, P. Ground (Sandgrounders); 3, D. Chaleton (Merseyside). Angels: 1, L. W. Sillis (F.D.A.S.); 2, M. Rolands (Hoylake); 3, Master S. Robins (Sunnybrow). A.O.V. Cichlids: 1, V. Knowles (North Staffs.); 2, R. Dyson (Blackpool); 3, S. Berry (Valley). Corydoras: 1, B. and B. Booker (Morecambe); 2, Mr. and Mrs. Wells (Doncaster); 3, Mr. Scott (W.C.A.S.). A.O.V. Catfish: 1, T. Hunt (Stretford); 2, Mr. and Mrs. Cohen (Castlefeed); 3, Mr. and Mrs. Wilkes (Middleton). Loaches: 1, Mr. and Mrs. Coward (Loyne); 2, J. Robertson (M.P.A.S.); 3, F. Mulla (Merseyside). A.O.V. Tropical: 1, K. Parkes (Merseyside); 2, T. Hunt (Stretford); 3, Mrs. S. Tonge (Oldham). Single Tropical or Native Marine Fish: 1, Mr. and Mrs. Ormisher (Sandgrounder); 2, L. W. Sillis (F.D.A.S.); 3, Mrs. Swift. Pairs (Livebearers): 1, L. Leadbetter (Fleetwood); 2, K. Howard (Sendgrounder); 3, V. Davidson (M.P.A.S.). Pairs (Egglayers): 1, R. Dyson (Blackpool); 2, Mr. Reynolds (B.K.A.) 3, Master S. Robinson (Sunnybrow). Breeders (Livebearers): 1, Mr. and Mrs. Cohen (Castleford); 2, Mr. and Mrs. Yates (Dalton); 3, N. West (Blackpool). Breeders (Egglayers): 1, Mrs. Gear (Keighley); 2, Mr. and Mrs. Wells (Doncaster); 3, N. R. Gibson (Huddersfield). Livebearers A.V. (Junior Class): 1, Master R. Boardman (Leigh); 2, Master L. Stewart (Hyde); 3, Master Wilson. Egglayers A.V. (Junior Class): 1, Master B. Black (F.D.A.S.); 2, Master Wilkinson (Hyde); 3, Master Bursall (Blackpool). Lewis's "Ranella" Trophy for Club gaining most points over all was won by Aireborough. The Jessie Fletcher Memorial Trophy for "Best Fish in Show by a lady" was won by Mrs. Lomax, Merseyside. Blackpool Corporation Silver Challenge Trophy for Best Fish in Show won by Mr. and Mrs. Cohen, Castleford.

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AT the first annual general meeting of the **Gt. Yarmouth and District A.S.** in November, the following members were elected to serve on the committee: Chairman, A. Kirby; vice-chairman, R. Andrews; treasurer, T. White; secretary, Mrs. J. Middleton, 38 Brooke Ave., Caister, Gt. Yarmouth; assistant secretary, K. West; committee, Mrs. I. White, Messrs. L. Ball, D. Barker, A. Marshall, M. Weekley. Trophies went to D. Barker for Best Livebearer and W. Johnson as Best Egglayer and Champion Exhibitor. The Society's new venue is The Imperial Hotel, North Drive, Gt. Yarmouth, and meetings take place on the first Monday of each month at 7.30 p.m.

THE eighth annual open show of the **Hounslow and District A.S.** was well supported by aquarists from a wide area and over 580 entries made a very fine display at the Youth Centre, Cecil Road, Hounslow. The best fish in show was owned by Mr. Rod Pook from Slough an aquarist of several years standing and a member of the Hounslow and District A.S. The following awards were presented by Mr. Ray Scurry, chairman and show manager. Mini Aquaria: P. Cairs. Dwarf Cichlids: J. Thorne. Characins: J. Howe. A.O.S. Cichlids: M. Strange. Siamese Fighters: R. Bowes. Egglaying Toothcarps: M. Collins. Corydoras and Brochis: H. Pratt. Loaches: M. Carter. Platies: H. Pratt. Labyrinths: Mrs. Sawford. Hyphessobrycon: R. Pook. Male Guppy: L. Brazier. Twintail Goldfish: L. Roberts. Single Tail and Comets: L. Roberts. A.O.S. Tropical Livebearers: M. Strange, Molly: D. Reilly. Goldfish and Shubunkins: S. Hedges. A.O.S. Tropical (Egglayers): Miss S. Hedges. Female Guppy: P. Coyle. Tropical (Pairs): P. Cottle. Swordtail: J. Healey. Tropical Catfish: A. Kinsey. Rasboras: K. Barret. Plants: R. Newham. A.O.S. Coldwater: G. Watson. Breeders (Egglayers): Mrs. S. Parish. Small Barbs: D. J. Woodward. The meetings of the society are held on alternate Wednesdays at 8 p.m. Visitors are always welcome. All enquiries to the Secretary, Mr. D. J. Woodward, 34 Uxbridge Road, Hanworth. Tel. 898 2456.

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THE speaker at the **Didcot and District A.S.** September meeting was F. Tompkins, who gave a talk on Livebearing Fishes which was both interesting and educational to the members. The annual club closed show was held in October, the judge being Maurice Carter of Bracknell. The results were as follow:—A.V. Coldwater: F. Ritson. Barbs: J. Davidson. Cichlids: J. Brown. Characins: J. Davidson. Guppies: G. Whiscombe. A.O.V. Livebearer: A. Davidson (Junior). Rasboras: D. Whiting. Labyrinths: J. Davidson. Cats and Loaches: F. Ritson. A.O.V. Tropical: J. Davidson. Furnished Jar: A. Watts. Breeders (Livebearers): R. Turner. Breeders (Egglayers): J. Brown. New members welcome at the meetings which are held on the first and third Friday of each month at the Esso Research Centre on the A34 near Abingdon.

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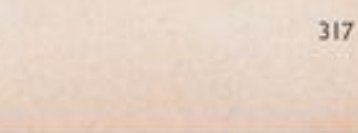
A TALK on Siamese Fighting Fish was given by Mr. P. Vicker of East London at the first October meeting of the **Hastings and St. Leonards A.S.** His talk which centred on the aspects of breeding these fish was very well given and the members were able to learn a lot from such an accomplished speaker. The table show was for Labyrinths, the result being: 1, P. Martin; 2, J. Watson; 3, A. Barnard.

The second meeting in October featured a talk by Mr. R. Armstrong who spoke on Dwarf Cichlids. This talk also was mainly about breeding and the raising of the fry. He brought with him some samples of the equipment and foods that he uses to raise his young fish and these were passed around the meeting for the members' inspection. Also at this meeting Mr. Carey, the chairman of the Eastbourne Society, gave his comments and the results of the home aquaria competition which he so kindly judged. The results were: Best Planted Aquaria: 1, A. McCormick; 2, Mrs. M. Greig; 3, Mrs. Reid. Best Junior Aquaria: 1, A. Haymes; 2, A. Reid; 3, C. Chalcraft. Best Home Aquaria: 1, G. Pryke; 2, Mrs. M. Greig; 3, A. McCormick. The table show for the night was for Dwarf Cichlids and Cichlids. The results for the Dwarf Cichlids



were: 1, J. Greig; 2, P. Stapley; 3, J. Greig. Cichlids: 1, Mrs. M. Taylor; 2, J. Greig; 3, P. Stapley.

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THE October meeting of the **Ilford and District Aquarist' and Pondkeepers' Society** was mainly devoted to a tape and slides lecture on Tropical Marine Aquaria, which covered a large number of fish to types of coral and other decorative features which are now becoming more available to the hobby—the most ambitious of all fishkeeping. The results of the table show were as follow:—A.V. Single Tail Goldfish: 1 and 4, H. Berger; 2 and 3, W. Rowe.

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THE speaker at the October meeting of the **East Kilbride Aquarium Club** was Steve Forster who gave an account of how to spawn the brown Acara. He also spoke on other Dwarf and Large Cichlids. The results of the table show were as follow:—Seniors. Large Cichlids: 1, M. Elder; 2 and 3, T. Wilson. Dwarf Cichlids: 1, A. Lyons; 2, J. MacLaughlan; 3, J. Finlay. Juniors. Large Cichlids: 1 and 2, J. MacLaughlan; 3, D. Watson. Dwarf Cichlids: 1, S. Russell; 2, D. Watson.

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THE autumn and winter programme of the **Amersham and District A.S.** started with a swing on 1 September with a Cheese and Wine Party. Other meetings have included an interesting and informative talk on Livebearers by F. Tomkins, chairman of the Judges and Standards Committee of the F.B.A.S., two colour films, Malayan Seashore and the Lonely Places, and an illustrated talk on Goldfish by R. D. Ewan, chairman of the F.B.A.S. The annual home aquarium competition is now being judged and the prize will be awarded to the winner at the Christmas Social on 15 December.

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OVER thirty members and guests attended the November meeting of the **Bournemouth A.S.** The main item of the evening was an illustrated talk by Mr. Derek Jones, F.B.A.S., of Southampton, entitled "Keeping the Catfishes." The table show was judged this month by Les James and Jack Jeffery, and the results were:—Catfish and Loach: 1, Mr. Knapp; 2, Mr. Haskins; 3, Mr. Mansbridge. Breeders (Tropical): 1, Mr. Ryan; 2 and 3, Mr. Greenhalgh. After the results were announced, the winners spoke briefly about the manner in which their fish had spawned, and the conditions that they required to do so.

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THE following officers were elected at the annual general meeting of the **Worksop Aquarist and Zoological Society.** President: A. Mawson. Chairman: Mrs. A. Mawson. Secretary: P. Spittalhouse, 8 Dennis Street, Worksop, Notts. Show Secretary: F. G. Sibson. Treasurer: Mrs. F. G. Sibson. Assistant Show Secretary: E. Briscombe. Committee: N. Jackson, M. Hopewell, F. Richardson, D. Marshall.

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A CHANGE of officers in **Clapham A.S.** is announced as follows:—S. Fagan, chairman; Mrs. E. M. Fagan, Secretary; M. Wright, Treasurer. The meetings are still held at Friendship House, Springfield Methodist Church, 200 Wandsworth Road, South Lambeth S.W.8. on alternate Tuesdays at 8 p.m. and any new members would be welcomed.

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MEDWAY A.S. were the hosts at an inter-club show with Mid Kent the results being as follows:—Barbs: 1, Mrs. W. Empett (Medway); 2, R. Mayne (Medway); 3, G. Milner (Medway); 4, T. Pharo (Mid Kent). Anabantids: 1, G. Milner (Medway); 2, K. Marsh (Medway); 3, C. Elliott (Medway); 4, D. Simpson (Mid Kent). Livebearers: 1, Mrs. W. Empett (Medway); 2 and 3, J. Marshall (Medway); 4, D. Simpson (Mid Kent). Best Fish in the Show: Mrs. W. Empett (Medway) Limia Vittata.

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THE **Haven A.S.** Pembrokeshire aquarists may like to be reminded that this society meets every second Monday at its club headquarters at 14 Pill Fold, Milford Haven. The society's 120 gallon community tank is now well established, and the society is feeling the benefit of having its own independent meeting place. At the one day show organised during Carnival Week, over 1,000 visitors saw the 25 tanks exhibited. At the October meeting there was a jar show, and the winners were:—1, N. Lewis, Hook; 2, J. Buck; 3, K. Lillycrop. Members and visitors are welcome at any meeting.

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UNFORTUNATELY for **Merseyside A.S.** the lecturer for October, Dr. Chubb, had to advise the Society that he would be unable to attend. Due to all the work entailed by B.A.F. the committee was unable to find a substitute lecturer at short notice and meeting took the form of a Questions and Answers session with Fred and Ken in the chair. Fred talked to members about his experience in breeding the Siamese Fighting Fish and answered members questions. A general discussion followed on various fishy topics. On 15th October seventy eight members and friends attended the annual dinner dance at The Mansion House, Reynolds Park and enjoyed an excellent evening. Forthcoming events: 1 December: Social Evening; 7 December: Quiz; 14 December, Auction.

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RECENTLY **Bradford and District A.S.** held a 16 mm colour cine film show. The equipment and films were hired for the evening. The films included the following subjects:—The Seven Seas, Goldfish (some really beautiful goldfish were shown; many of them are difficult to obtain in this part of the country). British Native Fish, and Transportation of Fish. The last film was on S. Africa. Unfortunately there was only a small attendance, and a Society going to the trouble of putting on a film show of this nature is deserving of much greater support.

At the next meeting the speaker Mr. P. Robinson was unable to attend due to illness, at short notice so the secretary deputised. The members present discussed a variety of topics which included, boils, white spot and its cures, various skin and fin parasites, hydra, velvet and its cures, copper sulphate, effects of lead on water, plant propagation, duck weed, riccia, indian fern, water, algeas and gas heating of tanks.

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MEMBERS at the October meeting of the **New Forest A.S.** heard a very interesting talk on the breeding of Angel Fish. This was given by the local authority on this subject—Dick Cox of Wareham. All members were unanimous in agreeing that this was one of the best talks given at the club for some time, both for presentation and interest.

In the final leg of the three-way quiz at Bournemouth, New Forest again fared badly and so finished third overall with 15 points to Bournemouth 33 and Salisbury 42. New Forest also lost the quiz to Salisbury by 49 points-53, but finished second overall. Points: Bournemouth 124; New Forest 107; Salisbury 102. Table show Fancy Goldfish: 1, R. Travers; 2 and 4, A. Williamson; 3, L. Mennessnet.

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SECRETARY CHANGES

Worksop Aquarist and Zoological Society: P. Spittalhouse, 8 Dennis Street, Worksop, Notts.

North Staffs. A.S.: A. C. Feed, 3, Clover Road, Wolstanton, Nr. Newcastle, Staffs.

Apex Aquarist Club: Mrs. S. A. Taylor, 4 Lawrie Park Road, Sydenham, S.E.26.

Yate and District A.S.: T. J. Green, 185 Station Rd., Kingswood, Bristol. Tel. 659205.

Bracknell A.S.: W. Crowe, The Homestead, Western Road, Bracknell.

NOTICE

Any Society wishing to join the Midland Aquarists League in 1972 please contact the Secretary, M. Deakin, 1 Greenhill Drive, Barwell, Leicester, LE9 8BU.

CHANGE OF VENUE

Hastings and St. Leonards A.S. The Society will be meeting at the Conservative Association Rooms, 18 Cornwallis Gardens, Hastings from 26th November. The meetings will still be held on the second and last Fridays of the month.

SECRETARY CHANGE OF ADDRESS

East Kilbride Aquarium Club: Lewis Brown, 107 Alberta Ave., Westwood, East Kilbride. Tel. 33474.

NEW SOCIETIES

Banbury and District A.S. The secretary is Mr. L. W. Pode, 22, Sidcleigh Road Bodicote, Banbury, Oxon. The meeting place is at the Comrades Club, Banbury every other Sunday at 7p.m. New members welcome. The Society would like to hear from lecturers or anybody with aquatic films for hire.

A new Society has been formed in Bristol and meets fortnightly at 7.30 p.m. at the Knowle Park Congregational Church Hall, Broad Walk, Knowle, Bristol, 4. (Second and fourth Tuesdays each month.)

The title is **Knowle and District A.S. of Bristol.**

The **Half Moon A.S.** meetings are held at 8 p.m. on alternate Mondays in the Half Moon Club, The Green, Billingham. The secretary is J. Waller, 22 Rodney St., Haverton Hill, Billingham, Teeside who will be pleased to supply any further information.

The **Hinckley and District A.S.** has been re-formed, and meetings are held on the fourth Thursday of the month, at 8 p.m. The venue is the Prince of Wales, Coventry Road, Hinckley and all interested in fishkeeping are welcome.

AQUARIST CALENDAR

1971

12th December: Bradford and District A.S. Open Show at a new venue—Cross Lane Liberal Club, Great Horton, Bradford. Benching from 1 p.m. to 2.15 p.m. Schedules can be obtained from Mr. W. Holmes, 24 Kings Drive, Wrose, Bradford, 2.

1972

5th March: Keighley A.S. Annual Open Show, Victoria Hall, Keighley.

12th March: Belle Vue A.S. Open Show, Openshaw Lads Club, Crossley House, Ashton Old Road, Openshaw, Manchester. Details from Mr. R. Davies, 38 Wetherby Street, Higher Openshaw, Manchester, 11.

19th March: Top Ten A.S. Open Show to be held at Huddersfield Town Hall.

26th March: Worksop A. and Z.S. Annual Open Show at the same venue as last year North Notts. College of Further Education, Blyth Road, Worksop. Schedules available shortly from the Show Secretary, Mr. F. G. Sibson, 17 Clinton St., Worksop.

26th March: East Dulwich A.S. Third Open Show. To be held in the Territorial Army Hall at Highwood Barracks, Lordship Lane, S.E.22. Show secretary, K. G. Quennell, 43a Carden Road, Peckham, S.E.15 3UB.

3rd April: Southampton and District A.S. The Avenue Hall, Southampton.

16th April: Medway A.S. Open Show. Details later.

23rd April: York and District A.S. Details later.

14th May: Derby Regent A.S. Open Show. Sherwood Foresters Recreation Centre (Normanton Barracks), Osmaston Park Road (A5111), Derby (follow R.A.C. signs). Show Sec.: R. G. Harlow, 180 Mansfield Road, Derby. Tel: 44322.

21st May: Yeovil & D.A.S. Open Show, The School Hall, Church Street, Martock, Nr. Yeovil. Show Manager: Mr. D. Pharo, 5 Hill Terrace, Bowerhinton, Martock, Somerset.

21st May: Croydon A.S. (F.B.A.S.) Open Show. Provisional Date. Full details later.

28th May: Corby and District A.S. Open Show. Sunday, Corby Civic Centre. Further details will be available shortly.

4th June: Accrington and District A.S. Annual Open Show. Details later.

Owing to pressure on space the Hetton County A.S. and Barnsley T.F.S. Open Show results have been held over until January issue.