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Standards and Judging

METHODS of judging fishes and standards for fishes have probably occupied more hours of aquarium society committees’ time in the past 20 years than any other single topic. The creation of standards for each and every fish has long been screamed for by some and maintained by others to be a task not only of unmanageable magnitude but one that in the long run is just not worth the trouble. Now one official body, the Federation of Northern Aquarium Societies, has come down firmly in favour of standards for judging rather than standards for fishes.

In their printed BULLETIN NO. 5, just issued, the F.N.A.S. Judges Committee presents full details of Standard Methods of Judging for the guidance of both F.N.A.S. judges and those who subject their fishes to the judges’ scrutiny on the show bench. In his Editor’s Note, Mr George W. Cooke emphasizes that production of standards for fishes has not been the aim of his Committee, although approval is given by them to fish standards already worked out by specialist societies and by the Federation of British Aquatic Societies. Thus whenever fishes before the judge are ones for which no standards exist, and such fishes are, of course, the majority among tropica’s seen today at shows, the Standard Method will be applied by the F.N.A.S. judges.

The F.N.A.S. Judges Committee record in the BULLETIN that they ‘do not believe that a standard for fish is a practicable proposition—a standard has no flexibility’. They instance the difficulty of recording colour as part of a standard, this being incapable of being adequately described in print. Aquarists who are inexperienced can usually ‘pick a winner’ from a group of fish in which they have specialised, but the Committee acknowledges that for the exhibitors to be satisfied about judges’ decisions it is necessary to work to a points system, and it is this that forms the backbone of the Standard Method.

In this BULLETIN the approved pointings are given for furnished aquaria and plants as well as for fishes, with explanatory notes and additional information about these. For the tropical breeders class points for ‘difficulty of breeding’ are to be allotted according to the species, and four pages of the BULLETIN are devoted to a schedule of points (maximum 20) for a large number of individual tropical fishes. Plants are grouped in three exhibition groups, and in just over three pages these groups are listed for named aquarium plants.

All of this should make for more contented showing in the domain of the F.N.A.S. Will those elsewhere, saddled with the unenviable and thankless task of grinding out standards for species, reach out for the relief it offers or be spurred on in their dedicated endeavours?

Aquarium Fish Boom

HONG KONG is earning more money from fish. With the spectacular rise in popularity of fish-keeping as a hobby in many parts of the world, its exports of aquarium fish reached a record £101,000 last year.

The Government’s Hong Kong Trade Bulletin said that the United States was the leading buyer, with £62,500, followed by Japan with £55,125.

Some 1,200 acres of land in the New Territories are being used for the culture of fish in fresh and brackish water ponds.

An average pond of one acre yields about a ton of fish a year.—HULL DAILY MAIL.
Concerted Breeders’ Action

There are, as most aquarists agree, certain species of fishes that, as yet, have not been bred in the aquarium except perhaps in the most meagre spawnings. I am referring to species such as the flying fox and the variety of sharks.

Seemingly, ideal breeding conditions, diet, temperature etc. are not yet known and consistent results virtually impossible to achieve. Perhaps, in the cases of the two species already cited, not enough effort is being made.

Most of these fishes, imported into this country, are good community types and doubtless, as age-growing, they can be found in the community tanks of most aquarists. Chance breeding in these conditions is remote enough to be considered almost impossible. Success in breeding them could, I feel, result if a scientific study of these fishes were to be undertaken by a team of aquarists pooling their knowledge.

One way of doing this would be to form a correspondence club, under the aegis of Petfish Monthly, open to any interested aquarist. The object would be to collect all data on given types of fishes from its members, to tabulate and file these data and proceed, methodically, to try to breed in a series of carefully controlled experiments. Each interested member would be given an allotted tank and asked to keep careful notes at every stage of the experiment. By using this method, every facet of breeding could be carefully watched and controlled. It might even be possible, through foreign correspondence or through the offices of Commercial Attachés, to glean some information from the very countries where these fish breed in their natural conditions—who knows? Ideally, a well-known aquarist or breeder should be in the club chair.

Newport, Isle of Wight

R. Walden

We hope that readers will always regard the columns of Petfish Monthly as their correspondence club, and we are always glad to hear about breeding successes and new ideas.—Editor.

Fighter Specialists

I have just received a letter from Detroit, U.S.A. from a group of aquarists who have formed a club comprising fighting fish breeders and hobbyists who specialise in Betta splendens, and if I may would like to pass on part of this letter in your Letters columns.

This society are very interested in corresponding with various organisations or aquarists who are interested in this popular species of tropical fish. They publish a two or three page news bulletin each month, which would gladly be sent free of charge to any aquarist who might be interested. This bulletin contains only information pertinent to the Betta, so if anyone is interested

Contact: Mrs Barbara G. McKay, 22249 Samuel, Taylor, Michigan 48185, U.S.A.

This is one of many letters I am receiving recently about participating in an exchange bulletin scheme. If any society is interested I can supply them with a list of every society who, I know, would be only too pleased to exchange bulletins.

R. E. Hampson
Hon. secretary, Aireborough & D. A.S.

Mr Hampson’s address is: The Headlands,Scotland Lane, Harforth, Nr. Leeds, Yorks.

Dealing with Snails

With reference to the query on how to deal with the small problem (Petfish Monthly, October), if all the plants are removed and a jam jar with the label still attached is floated in the aquarium it will be found that the snails are attracted to the label, usually during the night. The jar is removed before the aquarium is lighted, the snails are dislodged and the jar re-introduced.

I discovered this method quite by accident and have since used it very successfully.

Basingstoke, Hants.

G. Williams

Shrimps without Shells

I would like to pass on an idea that may be of assistance to aquarists keeping marine fish that require quantities of newly hatched brine shrimp.

A quantity of brine shrimp eggs are placed in a brown-coloured aspirin bottle and the bottle filled with water from the tank right to the top. Place one finger over the top and shake the bottle vigorously. The bottle is now held on its side (still with a finger on the top to stop the water coming out) for a few seconds to allow the brine shrimp eggs to settle. Some of the eggs float but the majority will sink. If the bottle is now placed in the tank, keeping it the same way up, and settled in the gravel, when you remove your finger all the eggs will remain inside the bottle, and when the shrimp hatch they will be attracted into the tank as it will be lighter there. After two or three days the bottle can be removed by a similar procedure as all that will be left in the bottle will be egg shells.

Brine shrimps will hatch in coldwater marine tanks as well as tropical, though it may take slightly longer. The method could also be used in a small tank, other than a marine, for hatching brine shrimp without egg shells.

K. Martin
Member, Standon & D. A.S., Marine Study A.S.

Hobbyist and Trader Relations

There appears to be within our hobby at the moment a great deal of bad feeling amongst clubs and their members that they are getting a raw deal. Mainly from the larger retailers who used to entertain club visits. Numerous reports and letters have been

Continued on page 273
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published in various magazines and newsletters this year alone complains of this. I have done a fair amount of research into this problem and found that there are several factors against on both sides. For the trade side, against such visits, I learned of two traders who had had fishes stolen, in one case an angelfish and the other a really large Amanoformus anostomus. Neither one a cheap loss. The former trader also lost a lot of large Amazon swords as well. The person, who has never sold out country house and grounds, had club parties picnicking on his lawn. He didn’t take exception to, but he did to the amount of litter that was often left behind. The last straw was when people started picking flowers and to get at the blooms they wanted broke down shrubbery etc. Several more complained that all too often clubs treated their visits like a trip to a zoo aquarium. Just looking and not buying at all. With staff problems and the wage scales that at present prevail, this makes such visits wholly unremunerative and time-wasting.

Now for the club and enthusiast side. Many are dismayed on visiting nationally and locally well-known hatcheries etc., at the shockingly poor selection usually available and indeed at the condition of some of the specimens offered for sale. A point I particularly take exception to is the filthy conditions that some of our pets are forced to endure. This, in itself puts the majority of people off at once. Another great point I know amongst the keen show enthusiasts in the hobby is that they like to select their purchases. The time-honoured phrase, ‘The customer is always right’, is unfortunately sometimes disregarded. This last comment, I hasten to add, applies in the minority of cases.

However with reference to the last remark let me quote an example. In an effort to enable the majority of our own club to visit one of the largest retailers who consistently advertise their large variety etc., we ran a coach trip. This was on a Sunday, but arranged to conform with the advertised opening hours. The idea was that club members would go in small parties of about six at a time and when they had done another party would circulate and so on, giving everyone a chance to see and buy whatever they fancied that perhaps is unavailable in our own area.

The proprietor happened to come out to the front and saw the coach pull up. He at once became very abusive before our intentions could be made known. After some quite unnecessary ugly words our members were permitted to start circulating through the display house in groups. They found the selection very poor, the finishing touch being that when some members saw species they wished to purchase and pointed them out to the staff the words were told that they couldn’t buy those particular fish but that similar ones would be brought out of the fish houses out the back. This, quite naturally, the majority did not agree to and the club left after an extremely disappointing and frustrating visit with hardly a purchase being made.

The coach party was about 45 strong plus one or two children. Allowing for this and a few wives there were about 40 people prepared to spend £4 upwards on fish. One or two considerably more as they had been saving for the trip in great expectation. I should have thought that £40 worth of business plus would be considered more than worthwhile in any retail trade of this nature.

In spite of all these arguments our hobby is steadily gaining popularity. Thus it seems that the time is ripe for serious reflection. Isn’t it time we buried the hatchets all round and tried again? If retailers found any particular club behaved badly then bar that club from future visits. Not penalise clubs as a whole. The clubs up, down and across the country surely form the hard core of interest and ensure the popularity of the hobby. All the various clubs should also play their part in ensuring that these outings are not treated as a look-and-see only trip but plan to buy a few specimens per head with the proviso that the variety, quality and cleanliness is there.

Come on everyone—shake hands, swap ideas and let’s all enjoy our hobby with no sharp practice or idle time-wasting gazing.

JOHN THORNE
Chairman, Hounslow & D., A.S.

Distribute Your Good Guppies!

EACH month I receive letters from PETFISH MONTHLY readers, a large majority of them being enquiries for good guppy breeding stock. If the reader lives within easy distance of a Fancy Guppy Association section, I refer them to it, knowing they will get plenty of sound advice and, what is more important, sound stock. Unfortunately not all of them are so lucky; for instance, last month I received letters from Portsmouth and Newcastle, both at least a hundred miles from a F.G.A. section.

Now what advice can I offer to these would-be guppy breeders? I can’t tell them there are hundreds of guppy breeders up and down the country with good guppies in their tanks that they could dispose of but just can’t be bothered to do anything about. To these breeders I say—if you have any good stock for sale insert a small ad. in this magazine and give some novice a chance. Don’t hog all the good guppies!

BILL ARMSTRONG
Liverpool 9

Breeder of Sharks

IN connection with the letter ‘Have the Sharks bred in Aquaria?’ (PETFISH MONTHLY, October) I have some young red-tailed sharks I spawned on 1st July. These would have been entered in the breeders’ class at the F.N.A.S. show at Belle Vue but I had some bad luck. I took eight young fish but lost four on the way. Most of the information on sexing says that the male has white on the dorsal fin. Neither of my adult fish had any white on them and yet all the young ones have. I believe that body shape is the best way to sex. The male appears to have a slightly hollow belly.

Workshop, Notts.

ALBERT M. DEAKIN

Bark and Aquarium

OUR magazine gives me really pleasant reading with such a variety of articles, news and information! A few words to Mr Arpee (Personal Comment, PETFISH MONTHLY, October) about cork back. This is widely used in Sweden as background material but we place it outside the tank. In order to get bark looking wet, it is varnished with a transparent varnish. To cover the
A course for the would-be breeder of tropica1s

Many aquarists who have not kept tropica1s for very long would like to breed the beautiful Siamese fighting fish (Betta splendens). Provided that one has a good supply of minute live foods for the babies, and the female is given special protection, there is no reason why a successful spawning should not be achieved at the first attempt.

A 24 in. by 8 in. by 8 in. or larger tank is required, mainly because this will allow the fry to grow on to 1 inch size without the necessity of moving them to a larger tank. The tank will require sand, as it must be planted fairly thickly, at least at one end, the type of plant being immaterial so long as it affords the female plenty of refuge. The rainwater in the tank should be maintained at 80° to 85°F (26°-28°C).

When all is set up place into the tank one good male. Now select a bulging female. Make sure she is well rounded above and behind her ventral fins. Place her in a half-filled 3 lb. jam jar and float this jar in the breeding tank so that the cover glass nearly touches the rim of the jar and neither the male can jump in nor the female jump out. Seeing the female will excite the male. He will display around the jar, spreading his fins to splitting point and extending his gills like a ruff around his neck. The female may at first show some interest but, unless absolutely ready to spawn, will in a short time ignore him. He, once sufficiently aroused, will start to build a bubble nest at the surface of the water. In a day or two this should be 1 in. in diameter, and nearly 3 in. high in the centre. He will keep building, and spasmodically return to the jar to try to coax the female to come to his nest. By now she may be sufficiently worked up to be making attempts to find her way out of the jar.

Now, with a very small net that will pass freely into the jar, gently catch her and free her into the tank. Do not tip her out of the jar, as this movement may break up the male's nest. In a short while take another look. If the female is covering a corner, or her fins are at all damaged, then, without damaging the nest, quietly catch her and replace her in the floating jar. Leave her there until the following morning, when she can be netted out again for a second attempt. If in a short while she is getting bullied again, replace her once more in her jar. This performance may have to be repeated four or five mornings running, till she is sufficiently excited and anxious to spawn. Perhaps on the fourth morning, when you return to see how things are getting on, you will see that she has gone straight to the male's nest, and without any scraping the pair are locked in the mutual embrace. When the female has expelled all her eggs, she will again seek cover amongst the plants. Once she shows no desire to follow the male back to his nest, remove her. Do not risk breaking the nest. If need be, leave the floating jar where it is. The female should be quite undamaged and ready to spawn again in a fortnight's time.

Meanwhile the male tends the nest, keeping it in repair until the eggs hatch. Any newly hatched fry dropping out of the nest will be taken in the male's mouth and blown back to safety in the nest. Do not mistake this action and think the male is eating his babies. It does occasionally occur, but nine times out of ten all is well. Once the fry are free-swimming remove the male, and feed the babies as described for speartail paradise.

Do not forget to house the female in a jar in the breeding tank. Leaving her without this protection, when she is not worked up to spawning, will result, more often than not, in having her torn to shreds, if not killed.

By D. B. McINERNY

(McLenn's Aquarium)
PETFISH MONTHLY visits
Mr W. Richardson at Home

These days it seems to be unusual to meet an aquarist who is devoted to both the coldwater and the tropical sections of the hobby. I had been told that Mr W. Richardson was such an aquarist and therefore I was specially pleased when he agreed to show me round his ponds and fish house at his home in Birmingham. By the time I left I was in no doubt at all about his qualifications for the title of all-rounder!

Mr Richardson’s garden is a very long one, and at the end distant from his house is the compact and tidy ‘fish area’ comprising a large rectangular pond and several smaller raised ponds and outdoor tanks grouped around his fish house. The latter has evolved and grown over a period of 18 years, from the original shed that received his first aquaria to the space-heated 16 ft. by 10 ft. building now crammed with tropical tanks of all sizes.

First to be noticed about Mr Richardson’s tanks was their heavily planted state, and the very healthy appearance of his plants. At least twelve different types of plants were being grown in profusion, and the beautiful light green mossed leaves of water wisteria in one tank was a particularly impressive sight. There was no need to enquire or to be told that Mr Richardson has the right touch with water plants as well as fish. He said that with tropical fish he tends to have a spell of concentration on one type, with a shift of interest and speciality from time to time. Mr visit was during a pally phase, and several varieties were in evidence at different stages of growth in the planted tanks. Breeding fishes is limited strictly according to the spare time he has available, and when his goldfish spawnings in summer months are keeping him busy the turnover of tropicales falls.

Natural light reaches the tanks in the fish house through the double-glazed roof. Mr Richardson showed me how he takes advantage of the film that collects on the inner glass from the fire in his Romsey internal combustion stove, situated in the house and kept burning throughout the year. During the summer he does not clean the roof glass and the light is thereby restricted to the minimum required. In the winter the glass is kept clean to get full advantage of the weaker intensity of light available.

A ‘boon’ was how Mr Richardson described a row of small concrete ponds raised about 6 in. above the floor beneath the tank staging in the fish house. These he finds most useful for growing on young fishes and he pointed out how the presence and employment of these tanks prevented the clustering of this region of the floor with fish house bric a brac that otherwise seems always to accumulate. Because of the dense planting of most of
his tanks, Mr Richardson does not use continuous aeration, but puts an air supply into any tank judged to be in need of it.

When he was recalling the various fishes he has bred, Mr Richardson remarked on how clearly he remembered his first breeding success—with the zebra cichlid (*Cichlasoma nigrofasciatum*), and how excited he was by this. He laughed as he confessed that he would now regard the conditions under which he bred them then as quite unfavourable ones. He said that to attempt something new was always a challenge for the keen aquarist and held this to be responsible for his enthusiasm for goldfish breeding, since here strain-building is a matter of great patience and careful observation and planning.

While I was admiring the depth of colour in his fancy goldfish in the five concrete tanks, each holding about 230 gallons, outside the fish house, Mr Richardson remarked on the way in which the colour could change, apparently as a consequence of transfer to new water, when goldfish are put on the show bench. Outside rearing seems to help colour development considerably. These rearing and growing-on tanks are used in the summer months only; they, too, are kept densely planted, and the water in them was crystal-clear.

I was shown the ‘worm pit’ that provides much of the live food used almost exclusively by Mr Richardson for his coldwater stock: this he made many years ago and the constant addition to it of his lawn-mowings has built up a rich earthworm culture. Maggots are also used for feeding, and some Daphnia.

In the large (24 ft. by 8 ft.) pond the big fish abounded at the surface at the sight of their owner standing on the grassy bank of the pondside. This pond has the bottom so arranged that a channel with varying depths of water is given, suitable for water lily and other plant growth and with a 4 ft. section used as a refuge by the fish in winter.

I asked Mr Richardson if there had been any particular event associated with his fish-keeping career that had specially pleased him. Without any hesitation he told me that the life-membership awarded to him by the Midland Aquarium and Pond Society was the recognition of which he was most proud. The award, of course, speaks for all the enthusiastic support that Mr Richardson has given to the Society, but I was sure from what he told me that he is deeply grateful for the interest that Society life has added to his personal fish-keeping through the years.

Anthony Evans

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**What’s New?**

**Freeze-dried Fish Foods**

As one of PFM’s contributors wrote in last month’s issue, setting out to stock the aquarium larder involves much more these days than merely asking for ‘a fish food’. One new development in the food line, the introduction of freeze-dried live foods, is expanding. As well as the freeze-dried *Tubifex* described in ‘New Equipment’ in PFM for October another preparation of the freeze-dried worms called *Tubi-Cubes*, in 5 gram (approx. one-sixth of an ounce) packs selling at 4s., has appeared on the scene and is in the shops now.

The brine shrimp is the latest live food to be frozen alive and then freeze-dried for the aquarium fish.
Formation of an Aquarium Society: 3

Keeping Up the Interest

AFTER the initial stages of founding the society and the compilation of the rule book and constitution, thought will have to be given early on to the production of an agenda or programme for your forthcoming meetings. The requirements and views of the members about the subject matter for lectures, talks and about shows (either with fish belonging to members of the society or an inter-club gathering with another society or societies) must be considered.

The first task would be to contact persons competent to give lectures and talks on aspects of the aquatic hobby; here is where a little outlay initially will benefit the society. One of the many services to affiliated societies offered by the Federation of British Aquatic Societies is the provision of lists of competent judges and lecturers recommended by that authority—some of whom do, in fact, lecture on club formation and organisation. Application for affiliation to the F.B.A.S. should be made to the secretary, Mr K. J. A. Pye, 35 Steedle Road, Hampstead, London, N.W.3. If your society is in the north of England or Scotland, you may decide to affiliate to one of the other existing Federations as well. Addresses of these secretaries are: Federation of Northern Aquarium Societies, Mr A. E. Falkus, 81 High Street, Thornhill Edge, Dewsbury, Yorks.; Federation of Scottish Aquarium Societies, Mr R. M. Cooper, 76 Campsie Crescent, Kircaldy, Scotland. Other advantages to be gained from joining federations, besides the availability of judges and lecturers, are many and varied according to whichever organisations are approached; these might include the donation of prizes for shows, the issuing of standards and guides for fishes and the general help and advice of experts.

Next on the list is the showing of fishes. The classes into which the fishes will be divided for judging would at first be at the discretion of either the show secretary or the committee, according to the number of entries obtained, but after this early period a series of show classes can be used. These again may vary from time to time and area to area,

By G. H. JENNINGS
(Hampstead Aquarist Society)

but a rough guide to such a series of classes is given.
(1) Livebearer classes: guppies; mollies; platys; swordtails, and any other variety livebearer tropical fish.
(2) Egg-layer classes (here there is an even greater diversity, in the tropical egg-laying species): any variety barbs; a.v. characins, angelfish; any other variety cichlids (except angelfish) and the shoaling species; a.o.v. labyrinths (except fighters); danios, rasboras and White Cloud mountain minnows; Corydoras catfish; a.o.v. catfish.
(3) Coldwater classes: native cold-water fishes; a.v. singletail goldfish; a.v. twintail goldfish.
(4) A.o.v. tropical fish classes.
(5) Breeder’s classes: two to three breeder’s classes are usually included, such as breeder’s livebearers; breeder’s egg-layers; breeder’s coldwater.

Fishes are most often shown in standard 4 in. by 4 in. "show" jars, which are usually obtainable through your local aquarists’ suppliers.

Prize cards and various items of show stationery will be required for use at any show and these can either be obtained from Elife Exhibitions (Show Stationary Department), Dorsset House, Stamford Street, London, S.W.1, or if you are able to make contact with a local printer he may be able to quote for these items. (Here is where the appointment of an influential president may be of some use.)

The show secretary, if appointed in the first instance, may be able to relieve some of the secretary’s work...
at this stage by contacting other societies or individuals on behalf of the society, with regard to show matters such as fixing dates and classes and judges for the various shows. Suggested contacts are:

(1) The Federation of British Aquatic Societies and any other Federation not previously contacted, if there is another one operational in your area.

(2) Any other local aquatic society or area group of such societies. Names and addresses of these societies and their secretaries can normally be found in the local press, public libraries, or obtained from Petfish Monthly. (Don’t forget to enclose stamped addressed envelopes with any enquiry.)

It goes without saying that the success of a club depends on the numbers drawn to its meetings, and it is therefore essential that these should be as varied as possible so that all the initial enthusiasm does not turn into boredom. As well as official aquatic lecturers, are there other experts in your area who could be prevailed upon to lecture occasionally? Biology teachers from local schools, lecturers in zoology from nearby universities or technical colleges, workers in appropriate government research stations. Don’t forget to give some thought to procedure for dealing with guest speakers. Arrange for your lecturer to be met at the station if he travels by rail. Don’t make him endure a long session of club business before his talk commences. Make sure your meeting or show ends in good time if he has to catch a late train or otherwise has a long journey home.

More experienced club members should be encouraged to give talks and demonstrations on tank glazing, setting up tanks, arrangement of plants and tank fittings. Also enthusiastic photographers may have slides and cine films to make up a programme. Reading the club news in Petfish Monthly should give further ideas from the activities enjoyed by other clubs. Raffles of aquatic equipment, plants and fish are popular, as are the occasional quiz and brains’ trust.

If refreshments can be made available at club meetings, their sales bolster club funds and they help to make the meeting a pleasant social occasion. Many societies enliven the winter months with socials with other clubs and their own annual dinner and dance. In the summer outside activities can provide a widening of interests—visits to zoos and large aquatic establishments, visits to open shows, expeditions to study life in ponds and streams, daphnia-hunting expeditions, trips to the coast to study the rock pools.

Plan all activities as far in advance as possible and make the dates and engagements known to all members as soon as they are fixed. In this way good attendances and continued interest in meetings will be maintained and your founded society should go from strength to strength.

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How to Build a Strain of Guppies

F.N.A.S. Assembly speaker discusses the methods of specialist guppy breeders

It should be possible for an aquarist to produce male guppies of a given selected variety within about a year if the correct pairing is used at the outset. Dr C. N. D. Cole told his audience at the Assembly of the Federation of Northern Aquarium Societies held during the British Aquarists Festival last month, ‘If you cannot do this’, he said, ‘then your fish-keeping is at fault, not genetics’.

How to select the right female to pair with the desired male was a topic about which Dr Cole gave a good many practical pointers from his 20 years’ experience of guppy breeding. He emphasised that the tail of the grown female gives the best guidance for predicting the type of male she will be most likely to produce. Thus females nearest to the original wild guppy with round tails showing no colour give the best chance of developing sword-tailed males, given a suitable male partner. Conversely, narrow-tailed strains of males will appear from wide-tailed females having blue or blue-white flashes in the tail. Tails of the older type came from females showing brown-black mottled tails, but the modern swordtail strains are thrown from females with the ‘superb’ type tail. This has the upper seven rays longer than the other rays, and black, brown or dark red are common colours in the tails of females of this strain.

In the flagtail strains the females have shorter and wider flagtails with edges that are straight in comparison with the more rounded outlines of tails of females of the other strains. Brown and yellows predominate as tail colours in these females. With the delta strain it is exceptional to find the delta feature produced unfailingly by one particular kind of female, although one with a long rather ugly tail, elongated at the top and having a notch towards the base, and nearly always greyish is most commonly seen.

Dr Cole said that although guppies with black and half-black anal peduncles are spectacular fish they
For the Community Aquarium

Cardinal Tetras

A VIVID iridescent blue-green band traverses the body from the root of the tail to the tip of the nose, passing over the eye. Almost the whole of the rear of the body below the green swath is coloured a brilliant cardinal-red that spreads on to the throat and almost covers the belly, the remaining portion of which is silver. Above the green band the back is a reddish brown. Although these sentences give a factual description of the cardinal tetra’s colour it really is no wonder that most descriptions of this fish contain phrases such as ‘jewel-like’. It is a most beautiful addition to any community tank. One cardinal alone is a feast of colour, but it is a fish that likes to shoal and four to six kept together achieve a brilliant effect. They are not cheap fish to buy and usually cost about twice the price of a neon, a fish they superficially resemble, but there really is no risk of confusing the two; cardinals are much more richly coloured, the green stripe covers the eye and the red coloration does not stop, as with the neon, halfway across the lower body.

Cardinals (Cheirodus axelrodi) come from the forest pools of the upper Rio Negro in Brazil and soft and slightly acid water brings out their most intense colouring, but in spite of their exquisite appearance they are not delicate fish and will live for several years in most well-kept community tanks. A dark background, not too brilliant lighting and a well-planted tank provides them with the right conditions for their well-being.

There are several varieties of cardinals, varying in size from about 3.5 in. to the ‘king’ cardinals at 4 in., but those most frequently obtainable do not usually reach more than about 2 in. when mature. The adult fish are not nervous and live contentedly with good-sized companions; most newly bought ones, however, are quite small and if they are introduced into a community tank containing much larger species they will merely provide a somewhat expensive meal for their fellows. They are not difficult to grow along, however, as they take small foods of all varieties—dried foods, daphnia and chopped white worms amongst them. They do not enjoy a very high temperature and are most comfortable at a water temperature of 72°-75°F (22°-24°C).

At the size at which most of these fish are bought, it is almost impossible to tell the males from the females, but with growth the swelling females are clearly distinguishable from the slimmer, and possibly more intensely coloured, male. Breeding the cardinal is not easy, but details of a successful spawning have been presented by Mr J. Lee in the August issue of PETFISH MONTHLY.

Guppy Breeding

(continued)

are slow growers and many abnormalities appear in their young, the females in particular developing tumours. He advised the guppy breeder to avoid ‘flock breeding’, for although ‘line breeding’ does not eliminate faults, with its use the percentage of such faults appearing does not increase. Use of chemicals in the aquarium water was another procedure condemned by Dr Cole.

In summary, the procedure involved in developing a strain having some desired feature is to take a female who has been found to produce one or more males showing the feature, and to keep her on her own until broad production stops. When she is ‘empty’, the special male she produced is mated to her, so that in the subsequent progeny more males of the same kind should appear.

In giving thanks to Dr Cole, Dr J. F. Wilkinson, F.N.A.S. president, remarked on the importance of awareness by aquarists that development of black pigmentation in fishes is often associated with tumour formation, and heartily concurred with Dr Cole that ‘doctoring’ of aquaria was something to be avoided.

Photo: V. CAPALDI
Low Cost Fish House Heating

By P. R. STOKES
(Chairman, British Killifish Association)

One of the biggest problems of this hobby today for aquarists with large collections of fishes is the increased cost of electricity. Even the hobbyist with perhaps four or five tanks in a living room has found the running costs of another tank an expensive item. The man with some tanks in the greenhouse-type of fish house may begin to wonder whether his breeding over the past year has been worthwhile when he looks at his electricity bills.

I suggest that it is time for a new approach, for a new plan, because a fish house, however small, can be made to pay for itself even when run by electricity. I am not trying to tell you the type of fish to breed, the type that can be turned out in quantity or the type the dealer is going to give you the top price for. This is left to your better judgement. What I do want to open your eyes to is a fish house, a large fish house in fact, that can hold upwards of 120 tanks with a running cost of less than 8s a week. I know this sounds impossible, when one considers that the cost of heating one aquarium in the house is anything from 19 to 21.9d a week.

The fish house I am describing is 12 ft. by 8 ft.—just a ready-made wooden shed, lined of course, but we will come to this later. The heating is done by fan heating. 'Oh! Yes', you may say, 'I have heard of space heating; this is too warm to stand for any length of time and is expensive'. You would be wrong in both statements; in the first place the air temperature will never be...

(Top) Fan heater and lead to thermostat in the fish house. The tanks shown are 24 in. by 8 in. by 6 in.

(Left) From right to left are shown: shed wooden wall, polystyrene sheet, slagbestos layer and insulation board.
above 78°F (26°C) to have the tanks running at 75°F (24°C). The use of a circulating fan, in the apex of the shed, will stop any build-up of hot air at the highest point in the fish house (we all know air will rise), making the whole air temperature the same at the roof as the floor.

The base of the fish house can be of concrete, slabs or any form of hard material. The shed itself can be placed on a course of bricks, with a damp course if you like, and this will give you an added row of breeding tanks, believe it or not! You will have noticed there has been no mention of roof lights, or daylight coming into this type of fish house; this is just not needed. In fact this has been your expensive item in the past.

Insulation against Heat Loss

Insulation for the house is not too expensive. As the most the whole cost will be £30 for insulation and £15 odd for the heating. Too expensive? Think again! What would the cost be for heaters and thermostats for 125 tanks? At 10s per tank this would run far more than the total given here.

After erection of the shed the first thought must be for the supports to hold your breeding tanks. I find that 12 in. by 8 in. by 8 in. are ideal spawning aquariums, for most types of fishes, larger bars included. One side alone of the shed can hold 55 breeding aquariums of this size. The main supports are at 16 in. centres, so in most types of ready-made sheds these will have to be added; they need only be 2 in. by 2 in. timber, these to be well secured to the sides.

Two layers of insulating material are fitted between each of the 2 in. by 2 in. supports. For the first layer, placed against the boarding of the shed, expanded polystyrene is used. Over this, further insulation is provided by Sigalos, secured by drawing pins or battens, which is a cheap form of flexible insulator at 7s 6d a roll. For a shed of the size given 12 rolls will be needed, including material for the floor area as well. The inner roof surface is insulated with the same materials in the same way.

For the inner walls and roof the final covering used is insulating material known in the trade as insulation board; this is a little expensive (2s 6d for a sheet 8 ft. by 4 ft.) but it works wonders as insulation and also gives a finished surface. It need not be nailed into place until the electric wiring has been completed. Galvanised nails are then used to fix it to the main supports.

Remember to mark the positions of these supports for your guidance when screwing the brackets, that are to hold the aquarium, to them through the board, otherwise after searching with screws etc. your insulation will finish looking more like pegboard!

For the floor the top covering suggested is chipboard, but you can, of course, use floor boarding or any other firm covering.

Staging and Heating

With tanks up to 10 in. deep, brackets can be used to hold the aquarium, 2½ in. screws being used to fix them to the main supports. For larger tanks a stronger form of staging will be required. If the 12 in. by 8 in. by 8 in. tanks suggested are used a space of only 2 inches is all that is necessary above each tank row, since these small aquariums can be handled easily even when containing water. Then five rows can be fitted along one side of the shed. Larger tanks, such as 24 in. by 8 in. by 6 in., ideal for growing on fry, can be housed on the opposite wall of the building.

This type of set-up was designed for killifish breeders and many similar arrangements are used by members of the British Killifish Association, for whom it has proved to be ideal.

Why do I suggest small aquariums? In general, most types of fishes spawn in shallow water, so why have breeding tanks deeper than 8 in.? Fry feed in shallow water, and many will die if put into 12 in. or more depth of water too soon. Then, of course, the space saving with shallow tanks is most important, and as the running costs for heating etc. the fish house are the same for a small number of tanks as for 1000 tanks the more tanks that are used the greater the benefit given by the economical £s a week (coldest months of the year—in this country eight out of the twelve) heating cost.

Fan Heating

Several types of fan heaters are on the market. A good one is the Phillips, 1½ kilowatt and 2 kilowatt, and heating from this can be controlled by a Plug-Stat, a thermostat that is plugged into a 13 amp socket. The
Low Cost Fish
House Heating

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heater will throw the heat along the floor for a distance
of well over 12 feet.

Apart from the wiring for this, a supply of electricity
for the air pumps, circulating fan and lighting will be
required. Two strip lights (50 watt), one of which can
be left on all day for the benefit of the fish, are suggested.
Other lights above any tanks used for show can be
included, for the growth of plants, but who wants to
grow plants in breeding aquaria?

A Decorative Marine
Aquarium

A GREAT number of visitors to the B.A.F. in
October admired the decorative tropical marine
aquarium entered by Marine Study Aquatic
Society member Mr J. Eden, who was awarded the
P.N.A.S. Challenge Trophy for the best marine furnished
aquarium. The exterior of this 45 gallons nylon-coated
tank, formed by a casing of Formica leaving only the
front glass panel unobscured, would make it most
acceptable in any living room, and Mr Eden had moved
the entire set-up from his home to show it at the Festival.
He has maintained it at home for about a year.

Hidden by the exterior covering are the filters (two
Eheim no. 380), ozone and air pump, and in the top
cover are two fluorescent tubes, one Gro-Lux and one
Natural (40 watts). This lighting is normally used for
6 hours daily, and the tank receives no direct daylight.

The sea water used was originally prepared from
Tropic-Marin salt mixture and has been in use for 12
months, with distilled water additions to maintain the
density at 1.027. Reaction of the water is kept constant
at pH 8.3, and the distilled water is always adjusted to
this pH and to the correct temperature before addition.

Ozone from a Sander ozoneiser is fed directly into the
water via the air stream entering through a coarse air
stone. When it was first used 5 milligrams per hour was
the rate of ozoneation but this was gradually increased
until the present amount (10 milligrams per hour) was
reached. Both the filtration and the ozoneation are used
all day and every day. Algal growth is practically non-
existent under these conditions, Mr Eden reports.

Decoration of the aquarium is provided by various
corals, sea fans and pieces of calcareous tufa stone, with
calcined sand on the base. The tank community comprises
Balistapus undulatus, Amphiprion ephippium, A. percula,
A. sebae (two), Dascyllus aruanus (two), D. reticulatus,
Bodianus pulchellus, Acanthochromis polyacanthus, Pomacentrus
leucotus (two), Chaetodon auriga (3 in.) and a dahlia
anemone (about 15 in. across).

Feeding is mainly with white worms, fresh prawn
and chopped earthworms, four feeds being given daily and
one of these including a dried food (Tetra-Marine).
The larger fishes are given young gobies from time
to time. Disease has not been a problem, Mr Eden says,
although occasional fighting results in torn fins and
bites but no permanent damage.
A RATHER unpleasant habit of certain writers in certain magazines at this time of the year is to suggest a Christmas Day treat for the pet dog, cat, budgie, or even the car, and a 'suitable' dinner menu is described in lurid detail. I will make no attempt, therefore, to suggest how you should boost your fishes' diet, as PETFISH MONTHLY has been telling you for months how to feed your charges, and I can hardly improve on that. Rather, I will suggest that on 24th and 25th December, and on New Year's Day, too, you should take the opportunity of cashing in on the good health of your fish; just give them their normal ration of dried food and give yourself all the more time to enjoy yourself. For those with families it will be a rare treat for the children to have Father all to themselves for a day or so, and many an aquatic widow will view 1967 more favourably if the washing up is done for her on two consecutive days.

I always regard the Christmas holiday, festivities apart, as an opportunity for looking at the hobby in retrospect, and for having pipe dreams for the year to come. It is good, for once, to be able to make some impossible plans in the general well-being of the occasion, and to not regret too much their abandonment in the cold light of the New Year. However, one meets lots of one's friends at this time of the year, and even if the fish take second place in conversation, which is highly unlikely, the company is good, and there is less water about than usual. Let's take ourselves a little less seriously, then, for a day or so, and enjoy the change while it lasts.

Just as I will decline the opportunity of suggesting a Christmas aquatic menu, so will I also decline the other obvious pun at this time of the year, namely, that of suggesting how you should spend your money on Christmas presents. There are scores of gadgets and many, many books for the aquarist, and you will find your dealer a far better judge than I of what young Squanda really needs, now that he has bought his first tank and plants. I will make one exception, and that is the PETFISH Diary, if you haven't already got your copy, it is an extremely useful purchase for £6.6d. There are no pictures of angel fishes in it, nor of neonos, but it contains all that information you want urgently when white spot breaks out—how many gallons your tank holds, and what concentrations of medicaments may be applied to that quantity of water, etc. The Editor seems to have carefully selected all those useful formulae, scattered throughout the many books on the hobby, which defy discovery when the need is most pressing. I should have liked to recommend to you one further buy, but it doesn't yet exist! I refer, of course, to a binder for PETFISH MONTHLY, which would have been welcome with many of our readers. I look forward to its introduction before very long, as, with the magazine now well on its feet, it should now be being prepared to take its place on our bookshelves. (Action is being taken on this! Announcement of the availability of the binders will be made as soon as possible.—EDITOR.)

In the November issue 'Dealer' drew a truly terrible picture of what he might suffer if customers were allowed to net their own purchases from his tanks. He implied that if I had suggested, in the October issue, that all customers be allowed to catch their own fish, he would re-read the article in question, he will see that my claim was that customers should be allowed to choose their own fish. I certainly added that my own dealer lets me net my own. I should, perhaps, have made this comment with some humility, because I am well aware that it is not his general habit, and the first time it happened I felt as though I had received the accolade! No, I quite agree with 'Dealer', that the general adoption of such a practice is unthinkable, but provided that dealer and regular customers come to some understanding about this sort of thing—there is a protocol about it, as well as acceptance of responsibility on both sides—there is often a mutual advantage. Certainly, I would never think of netting any fish from his tanks unless I had first 'caught his eye', and I would not expect to get any privileged treatment in a shopful of customers; but there is the time, when you jolly well know that he is giving some newcomer a bit of advice—and this is never stinted—at which he will positively welcome my helping myself, right down to the point of paying up.

I am glad that 'Dealer' otherwise agrees with my feelings over getting the fish you want. Paying a higher price for the bigger fish is a fair way to aid discrimination, but I could not go along with any practice in which quality is the subject of a price differential. I am sure that 'Dealer' would be against this, too, but I should be interested to hear his views over the matter of maintaining quality standards in display tanks. The amateur breeder is always being told to cull, cull, cull, until it hurts, and if he gets to the point of selling his surplus to dealers, it is usually of uniformly good quality. Whence, then, come all those runts and hollow-bellied little fish we see too often displayed before us? I can't believe that these come from the local amateur, whose standards are easily regulated by dealers' refusals to take rubbish; who, then, imports those undersized little fish with little hope of survival?

Isn't it time that some form of regulation were made to ensure that the majority of imports stood a rather better chance than many of them now do? Recent instances of overcrowding imported foreign birds have been headlined in the press, and the conditions of importing tortoises frequently leave much to be desired.

Continued on page 285
Life Cycles of Fish Parasites

By Dr. James C. Chubb

The University of Liverpool

Each species of parasite has three major phases in its life-cycle: growth, reproduction and transmission. These phases may involve one or more hosts, means of reproduction and periods of transmission.

A simple life-cycle may be illustrated by considering the monogenetic trematodes, of which several species of Gyrodactylus and Dactylogyrus are found in British freshwaters. Dactylogyrus species occur on the gills of the fish. The worms deposit eggs during much of the year, although the life of each worm may be short. The eggs sink to the bottom, and after a time hatch to give a free-swimming larva which is capable of infecting the host. This is an example of a direct life-cycle, in which only one species of host is involved.

Gyrodactylus species, which occur on the body surfaces, fins and gills, also have a direct life-cycle, but the young are born alive. The daughter worms at birth are fully formed and do not differ from the adult in either size or structure. It is not known how the transfer of the Gyrodactylus from fish to fish takes place, as in normal circumstances direct contact between fish is not seen.

A rather more complicated direct life-cycle is found in the white spot protozoan Ichthyophthirius multifiliis. Mature individuals occur under the skin of the fish, and may be as large as 1 millimetre in diameter. These are the so-called white spots. They break through the skin of the fish and escape into the water, swimming for a time before settling on an aquatic plant or a pebble. A cyst is then formed which fixes the parasite to the substrate. Within the cyst repeated division occurs, to give 2,000 or more small rounded ciliospores. The ciliospores bore out of the cyst, and swim about in the water, and must infect a fish within a few hours, or else they die. If the ciliospores do make contact with a fish, they penetrate the skin and burrow some way into the tissues. Here the growth phase occurs, to give the white spots visible through the skin of the fish.

Many fish parasites have a more complex life-cycle, in which one or more intermediate hosts are necessary in addition to the definitive host, which harbours the adult worms.

The spiny-headed worms (Acanthocephala) have one intermediate host. The adult worms are found attached to the wall of the intestines of the fish. The female worms release shelled larvae into the lumen of the intestine, and these pass out into the water and sink to the bottom. Here they may be eaten by bottom-feeding invertebrates. If the correct animal eats a shelled larva, it emerges from the shell, boring through the gut wall, and comes to lie in the body cavity of the host where further development occurs. The freshwater shrimps, Gammarus species, and the water louse, Asellus species, are normal intermediate hosts in British freshwaters. Once the larva attains maximum development in the intermediate host, it remains there until it is eaten by a fish. The larva, on the digestion of the intermediate host, attaches itself to the wall of the intestine of the fish by the spiny proboscis, and after a period of growth becomes sexually mature, thus completing the life-cycle.

The life-cycles of many tapeworms of freshwater fishes require two intermediate hosts for their completion (see diagram).

In the digenetic trematodes there may be one, two or even more hosts in the life-cycle. The larval stages normally reproduce themselves many times by means of propagatory cells termed germ balls. Thus one egg will have the potential for the production of many larvae, and thereafter many adult worms. Fortunately, there is a tremendous mortality to keep the numbers of these worms under control.

When considering the means of control of any parasite, it is ideal if we know the life-cycle, because the control measures can then be directed at the most vulnerable part of the cycle. But because the life-cycles of parasites utilise normal food chains in the environment, there is always a danger of damaging the food animals required by the fish. In an aquarium or a small pond it is usually possible to break a life-cycle by removing the appropriate intermediate hosts, but this is not normally feasible in larger ponds or natural environments.

At the present time we have relatively little information on the biology of many of the species of parasites found in the British lakes. More research is required, and is being undertaken, but it takes a long time to obtain results.
The diagram gives a greatly simplified picture of the life-cycle of a fish tapeworm, shown related to the hosts and to the food chains in the habitat. The planktonic food chain, shown by solid arrows, starts with the phytoplankton, microscopic plants floating near the surface of the water and obtaining their life needs from sunlight and salts dissolved in the water. The phytoplankton is eaten by zooplankton, minute animals, and in turn these form the food for plankton-feeding fish. The plankton-feeding fish are eaten by piscivorous, fish-eating, fish such as the pike. A similar food chain is found for the bottom-dwelling forms of life, and is shown at the bottom of the diagram.

The tapeworm life-cycle, shown by the dotted arrows with the hosts in rectangular boxes, is superimposed on the planktonic food chain. The adult tapeworms are in the intestines of piscivorous fish. Eggs are produced which pass into the water and hatch, giving a free-swimming larva called a cestodarium. Zooplanktonic animals eat these and the first parasitic tapeworm larva, the procercoid, develops in the body cavities of certain species. Infected zooplankton eaten by the plankton-feeding fish transmits the infection to the fish, where the second parasitic larva, the procercoid, develops. When the plankton-feeding fish is eaten by the piscivorous fish the cycle is completed, and a new generation of adult tapeworms develops.

Personal Comment

Continued from page 283

It seems to be an increasing habit to sell (not at reduced prices?) fry, rather than fish. There are, of course, a number of importers who grow on small fish before offering them to the public, and this practice is highly commendable, as well as being, in the long run, the only sure way to remain in the business. All the same, too many timid seem to me to get through somehow. Open for comment!

The August issue of *PetFish Monthly* touched upon the possibility of the formation of the Union of Daff-Catchers and Tidi-Collectors. It appears that this may become a matter of considerable urgency for those so engaged if a device called the Insect-O-Cutor comes to be modified for underwater use. It apparently consists of a 'black box' which emits short-wave light rays. These are claimed to lure insects to their death against a heated plate, from which their lifeless bodies drop into a tray below. It at present constitutes a hygienic device for use in canteens, restaurants and so on, but one conjures up idyllic scenes of the aquarist seated by the pond, directing his Daff-O-Cutor at the depth, and scooping out by the pound the most delectable of all fish foods, and literally staggering home beneath the unaccustomed load.

Best wishes for Christmas to all in the hobby, and, for 1967, much spawn and little spot.
**Transatlantic TOPICS**

By JIM KELLY

Thus the guppy loses its familiar title of *Lebistes reticulatus* in favour of *Poecilia reticulata*, the trivial portion of the name ending 'a' changing to 'a' so that it agrees with the feminine gender.

Book publishers find that corrections to their products are expensive so don't expect to see the name changed for quite some time, but meanwhile those of us who are as with it as Quant fashions will use the new name—or is it the old?

The disease *Salmonella* has been making the headlines in papers Stateside recently, and has even resulted in a drop in the sale of pet 'turtles' (terrapins), the latter being wrongly blamed for the spread of the infection. If any readers do keep these interesting pets here is a method to sterilise their tanks: wash the tank out well with soap and water then refill with clean tap water to which two cupsful of Chlorox have been added per gallon, allow to stand for at least half a day and then swill out. Guaranteed lights out for any *Salmonella* bacteria.

* * *

A mysterious disease is killing female guppies in their thousands, report many of the guppy breeders in America. It starts as a white spot in the dorsal area then spreads as a white band of infection encircling the body. Nobody has come up with a cure but one D.V.M. put forward the theory that too close inbreeding was the cause.

* * *

Fishkeeping has long been considered as a joke by folk who have yet to acquire the habit, but one man, Dave Snyder in Denver, Colorado, has successfully combined jokes and fish. His store sells the usual fish and hobby equipment but also houses a store selling magic tricks, jokes, party gags, even stamps and coins. A man of many parts, Dave is also a magician himself when he finds the time from his other interests of racing cars and shooting. Wonder if he can explain the 'disappearance' of fish from my tanks occasionally?

**What's New?**

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menu. Miracle San Francisco Bay Brand Brine Shrimp is supplied in transparent plastic containers holding a minimum of 4 grams (about one-seventh of an ounce; price 45¢ 6d) of the lumps. Information on the pack shows that 0.3% of ox blood as a 'fish attractant' is added to the food, and there's no doubt that it brings most fishes rushing to the shrimp when a piece is floated on the aquarium surface. It seems likely that before the freeze-drying process the shrimps are placed in fresh water, so that salt content of this food is minimal and use of it will not cause salinity of the aquarium water.

**Fish Book**

**Best-seller**

NOW in the publisher's category of 'best-seller' is Derek McInerny's well-known ALL ABOUT TROPICAL FISH, the enlarged third edition of which was published last month. First appearing in 1958, the book's two earlier editions were reprinted almost annually to cope with continually rising sales. It has sold over 25,000 copies all over the world, including some to countries behind the Iron Curtain.

In the latest edition, revisions to the text incorporate the latest information on fish breeding and most of the popular fishes of recent introduction, such as emperors, tetras, phantom tetras and black neons, are now included. The most recent findings on breeding modes and cardinals are presented fully; the prevention of neon disease and a new white spot cure are other fresh topics. Pages now total 320, with 125 colour plates, 220 black and white photographs and line drawings, and the new price is $3.

**Aquarium Lighting**

FLUORESCENT lighting for aquaria, including the tubes giving coloured light, is used by many fish-keepers these days, and it is now that it will be used much more now that a compact unit for the lighting gear has been put on the market by Inter-Pet. This is the Convert-A-Lite, which measures approximately by 2 in. by 2 in. and weighs about 3 pounds, a decided improvement on the rather cumbersome units previously available. Two leads for attachment to the tube are provided. Price of the Convert-A-Lite is 58¢ 6d. The unit is intended to hang on the wall near the aquarium, and will supply tubes 15 in. to 36 in. long.
Are Live Foods a Risk?

How great is the risk of introducing disease into a tank when feeding live food to fishes?

Any live food that is conveyed in water from unknown sources can carry in that water parasites and pests. However, simple precautions can be taken so reduce this danger as to make it practically negligible. Daphnia and glass worms can be washed in a fine net under a gently running tap before being emptied into a tank. Newly purchased Tubifex worms have almost certainly been kept under running water by the supplier in any case but, to make certain that the worms have disgorge all the mud inside them, they can be placed in a shallow dish and kept under a gently running tap for some hours. Dead worms will also be washed away by this means and the tight cluster of bright red worms remaining will be safe for feeding. Tubifex worms can also be washed in one of the general aquarium antisepsics sold for this purpose. Tubifex worms may thrive in water carrying sewage, but it is not always remembered that because of this they come from waters too polluted to carry fishes. They do not, in fact, come into contact with a number of parasites such as those of white spot or velvet and they are not known to be hosts to either of these pests.

Glass ‘Worms’

My dealer occasionally has glass worms for sale. Are they a satisfactory live food?

Glass worms (Chabouras), also known as ghost worms, are the aquatic larvae of the plumed gnats and begin to come into the shops for sale in the autumn. They are large (about ½ in. long) and although transparent are rather tough. Small fishes cannot cope with them and they should certainly not be used as food in breeding tanks or tanks where there are fry, as they may well eat these. They are a very suitable food for larger fishes, however, and for these are a useful live food at a time when Daphnia is in short supply. They are also easier to keep alive than Daphnia and can be stored in quantity in jars or small tanks.

Bubbles of Gas

I have noticed small bubbles on the stones recently in my tank and sometimes a large bubble rises up to the top of the water. Are these bubbles likely to be the result of poisonous gases?

In a tank newly filled with water it is not unusual for gases discharged from the water to form small bubbles on all the surfaces, and then to disperse by the next day. Gas bubbles in the established aquarium can arise from two main sources. Plants and thread algae may form small bubbles of oxygen, in strong light, which may become trapped by the leaves or threads but do no harm. Decay of vegetable material or fish food in the gravel, however, can lead to the production of marsh gas bubbles, and this is a bad state of affairs because it indicates pollution in the aquarium. A stick poked in the gravel should reveal whether there is trouble there; if there is, the gravel will have become black and disturbing it will release many more bubbles of gas. Cleaning out the aquarium and replacement of the gravel is the only remedy for this. Care in feeding must be exercised to avoid recurrence of the trouble.

Young Orfe

I have recently acquired some young golden orfe about 2 in. in length. Could you tell me something of their habits and whether they will survive the winter in an outdoor pool 12 ft. by 9 ft.3 Also I have an American water hyacinth. It does not look hardy. Should I keep it indoors during the winter?

Golden orfe are very suitable fish for the garden pond. They are quite hardy and grow to a good size (12-15 in.). They are also active, fast-swimming fish that keep well up to the surface, where they take flies from the top of the water. However, young orfe acquired late in the year will have no opportunity to build up reserves for the winter fast and they should be wintered in an inside tank. They do, however, like well-oxygenated water and must on no account be overcrowded. A 24 in. by 12 in. by 15 in. tank at least would be required for six small orfe. They will also require live foods, preferably Daphnia, glass worms and Tubifex.

Water hyacinth (Eichornia crassipes) is only a semi-hardy plant. It is not an easy plant to winter, but it is best done by planting it in peat, keeping it just moist, in a cool but frost-free place.

Green Pond

I have constructed a garden pool and introduced fish to it. Everything seems to be well except that the water has turned dark green and the fish now cannot be seen. Can you help me, as it is very unseemly.

The green of your newly constructed pond is caused by the microscopic water plant, algae, the growth of which depends on the intensity of light. Almost all new ponds turn green. This condition will clear in time when the substances in the water on which the plant feeds have become exhausted. For this reason, the water in the pond should not be replaced by fresh water as this will only give the plant new encouragement. The same greeness may well become apparent again next spring as the intensity of the light increases after the dark winter days. It is, of course, quite harmless to the fishes who do, indeed, thrive in such water.

Peacock-eyed Bass

I have recently purchased two peacock-eyed bass, each about 1 in. in length, and have placed them in an aerated tank (15 in. by 10 in. by 10 in.)

Continued on page 320
Results of PETFISH MONTHLY’S Photo competition

Category I: Black and white photographs
(a) Fish/aquarium scene. First prize (£3) to Mr. G. Cameron (4 Bellevue Place, Edinburgh 7): angelfish with fry 9 days old.
(b) Garden pond. No awards.

Category II: Colour prints and transparencies
(a) Fish/aquarium scene. First prize (£3) to Mr. F. Parsons (26 Woodlands Road, Farnborough, Hants.): blue fighter, male (2½ in. by 2½ in. transparency).
(b) Garden pond. First prize (£3) to Mrs. P. Whittington (The Grange Coach House, Bonehurst Road, Horley, Surrey): her own garden lily pond (35 mm. transparency).  

Prizes for runners-up have been sent and a selection of their winning entries will be included in next month’s issue.
A large number of entries was received for PETFISH MONTHLY's Photographic Competition from our readers, and photographs continued to reach us right up to the closing date at the end of October. Entries in the category for colour prints and transparencies were in the majority, transparencies being the more popular of these, and disappointingly few black and white photographs were received. Because of this we were unable to print as many examples from the entries as we had planned to do during the course of the Competition, since good black and white reproduction is not always achieved from colour material. Surprisingly, pond picture entries in both colour and black and white categories were very few, and these generally were poor in that the ponds shown were seldom photogenic. Therefore the fish/aquarium scene entries provided most of the work for the judges.

Here, although most entries were technically good, perfectly focused and exposed, too many competitors were content to submit pictures in which the composition was badly at fault, fishes often being shown with the tail 'out of shot' or obscured by plants etc. The best pictures were very good indeed, and we had to take into consideration the particular difficulties that might have been presented to the photographers by the individual subjects chosen, when our final assessment was made.

It is obvious that now there are far more people obtaining first-class results in this difficult field of aquarium photography than ever before. However, it is significant that most of them seem to be photographing in colour, with which it is far easier to obtain an acceptable result than with the limited range of monochrome. When looking at the winning pictures in this issue, allowance must be made for some loss of quality because of processing limitations for those pictures that were in colour in the originals.
British Aquarists' Festival 1966

With attendance figures up, with 1000 fish entered, with the exhibition area greater than ever before and with the best show layout yet presented, this year’s British Aquarists Festival, organised by the Federation of Northern Aquarium Societies, more than established its claim for the title of Britain’s biggest and most spectacular annual aquarium display. Officials of the F.N.A.S. responsible for it deserve the highest praise. Visitors could not fail to be impressed; the only complaint heard was that there could have been more trade stands.

Show Report by H. WHITE (Hendon A.S.)

Of just over 70 clubs affiliated to the F.N.A.S., some 29 supported

Nautical Themes Win the Display Awards

(Above) Gorton & Openshaw A.S. entry: second

(Right) Blackpool A.S. entry: third

(Top of page) Isle of Wight A.S.: winning entry

Isle of Wight A.S. goes north to win first prize with their Hovercraft

This year's Festival. Two societies came from the south, Bournemouth, and the Isle of Wight, and it was the Isle of Wight A.S. that gained first prize for a club display with what was a most marvellous effort.

The subject was modern and so correct for the Isle of Wight—a model Hovercraft. Mr Ted Davison, an old Hendon member now living on the Isle who is the Society's secretary, gave me all the details. The model was half-scale, made from photographs supplied by Saunders Roe, the only modification being to the region of the craft where the fish tanks were let in as windows. The idea was finalised in August and built as a club project. Its entry for the B.A.F. necessitated a journey of 270 miles with a very willing
team—the ladies producing food cooked on Primus stoves during the three days spent assembling the craft at the hall. By creeping beneath the Hovercraft it was possible to see its excellent construction, all the parts screwed together, and particular care had been taken with the wiring as this item had cost the Society first place in an exhibit once before. Incidentally, in the Isle of Wight entry for the plant competition, a huge Edgeworthia range from Roy Skipper’s original stock, so it was at least 10 years old!

Second place for best Society entry was gained by GORTON & OPENSHAW A.S., a genuine large-cupped dishy bowl with rigged sail forming the main part of the design. BLACKPOOL A.S. secured third place with an enormous light-house, including sea gulls and lifeboats—quite a change from their last year’s mermaid.

It was disappointing not to see the British Killifish Association, and in fact the toothcarps on show were few and disappointing. The Fancy Guppy Society was also missing this year but the new MARINE STUDY AQUATIC SOCIETY OF GREAT BRITAIN was represented.

For those who like to see big fishes, it was possible to see on the stand of the TROPICAL AQUARIUM BREEDERS Ophiopomus gorami, Crenicichla lepidota and Plecosomas, all about 12 inches in length. MERSEYSIDE A.S. showed some fine Siamese tiger fish, tinfoil barbs, piranha, yellow-tailed barbs, snake-skin gourami, Siamese catfish and good specimens of cichlids. Fishes on the trade stands included some interesting ones, among them some pirauna fry imported from their American breeder, all the varieties of discus (at prices from £24 to £45 a pair), large puffers, electric catfish and Siamese fire eels. South Coast Aquatic Nurseries Ltd were demonstrating the Spedia Cleaner and the Halibon fish-breeder, and on the stand of Aquatic Hobby Ltd., presenting Kingfish food, was a spectacular marine tank. Walter Smith Ltd. of Manchester displayed a good collection of regalies in an aquarium.

With the increase in interest in tropical marine fishes these days I cannot let pass without a mention what is possibly the best display in this country—in Belle Vue’s Aquarium and Reptile House; it is magnificent.

Their clouded demodocoeil had spawned four times but had not raised their young. I was interested to learn that the dragon fish will eat red or orange goldfish but if they are given black or yellow ones these are ignored. A fine 6-8 in. painted trigger fish lives on about six musselshells a day, taking prawn as an alternative. All the tank water is natural sea water from Blackpool. The bat fish (Platys potamotus) were glorious. In fact all the fishes and reptile exhibits were superb—a credit to Belle Vue’s curator and staff.

Some Society Displays

CRESWELL & D. A.S. had built a colliery pit-head scene, complete with overhead winding gear and some good guppies, and, sign of the times, a marine aquarium.

BELLE VUE A.S. had the J. Kelly Trophy-winning Novetly Aquascape with the television title ‘Bewitched’ and also an ingenious moving ‘Aquashow’ scene.

BRADFORD & D. A.S. are to be specially commended for the excellent labelling of the eye-level display of tanks.

LYTHAM A.S. presented their exhibits in a mill house complete with a realistic moving water wheel. CHAPELTOWN & D. A.S. built a wall with the aquaria inset as windows, complete with fold-back shutters.

NORTHERN GOLDFISH & PONDKEEPERS S. displayed the first-prize-winning Aquascape furnished aquarium in the form of a miniature garden and pool.

NORTH WARKS A.S. arranged their aquaria in two side panels covered by a hand-painted ‘fairy’ paper and showed a sunken ‘Moonraker’ as centrepiece.

SHEFFIELD & D. A.S. had a very neat and pretty decorated display with a nicely lighted central television ‘Batman’ scene (very popular with junior visitors, that one).

BURY & D. A.S. showed their aquaria in a square block carrying a clock face around which the tanks were arranged.

Results in Full

Best Fish of the Show went to Mr J. Smith for his dwarf guppies (Blackpool & Hyde A.S.), with which he also won the Wibby Grove Press trophy for the best tank fish. The best colliery pithead section trophy was awarded to Mr H. Peckhi (Warrington) and the award for best all-round display went to Mr K. Parsons (tropical aquarium, Merseyside A.S.). Mr J. B. Smith (tropical, London A.S.) and Mr H. Penhall (aquarium, Queen A.S.) were joint winners for a very furnished aquarium, tropical.

Best large tank went to Mr K. Parsons tropical aquarium, Merseyside A.S.). Mr J. B. Smith tropical, London A.S.) and Mr H. Penhall (aquarium, Queen A.S.). Other results were:

Best small tank went to Mr J. M. Park of London A.S. for his dwarf guppies. The highly commended award was shared by Mr W. B. Smith and Miss M. J. Berlin of Warrington A.S. for a very furnished aquarium, tropical.

Mr J. Smith (tropical, London A.S.) was joint winner of the H. Peckhi (Hednesford A.S.) for his dwarf guppies. Mr K. Parsons (tropical aquarium, Merseyside A.S.) was joint winner of the award for best all-round display with Mr J. B. Smith (tropical, London A.S.) and Mr H. Penhall (aquarium, Queen A.S.).

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British Aquarists' Festival 1966

**Calamanderia.** Challenge trophy for first place in a pair of small Calamanderia (Burchardia, 1925). Mr. C. Ashley (Bradford, 51 pm).

**Chalidochlus.** Challenge trophy for first place in a pair of Chalidochlus (Barbus, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Cichlids.** Challenge trophy for first place in Cichlids (Chromide, 1925). Mr. R. L. Hawtin (Bath, 51 pm).

**Carpinus.** Challenge trophy for first place in a pair of Carpines (Carpinus, 1925). Mrs. M. W. Smith (Bradford, 56 pm).

**Corydoras.** Challenge trophy for first place in a pair of Corydoras (Corydoras, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Cyprinidae.** Challenge trophy for first place in a pair of Cyprinidae (Barbus, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Dactylochilus.** Challenge trophy for first place in a pair of Dactylochilus (Dactylochilus, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Dahila.** Challenge trophy for first place in a pair of Dahilas (Dahila, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Danio.** Challenge trophy for first place in a pair of Danios (Danio, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Dartmouthia.** Challenge trophy for first place in a pair of Dartmouthias (Dartmouthia, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Dentex.** Challenge trophy for first place in a pair of Dentexs (Dentex, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Dendrochilus.** Challenge trophy for first place in a pair of Dendrochilus (Dendrochilus, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Ephippies.** Challenge trophy for first place in a pair of Ephippies (Ephippies, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Epinephelus.** Challenge trophy for first place in a pair of Epinephelus (Epinephelus, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Ezodek.** Challenge trophy for first place in a pair of Ezodeks (Ezodek, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Fusiliers.** Challenge trophy for first place in a pair of Fusiliers (Fusilier, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Gnathostoma.** Challenge trophy for first place in a pair of Gnathostomas (Gnathostoma, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Hemitaurichthys.** Challenge trophy for first place in a pair of Hemitaurichthys (Hemitaurichthys, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Hemigrammus.** Challenge trophy for first place in a pair of Hemigrammuses (Hemigrammus, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Hemichromis.** Challenge trophy for first place in a pair of Hemichromises (Hemichromis, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Heterandria.** Challenge trophy for first place in a pair of Heterandrias (Heterandria, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Heteropagus.** Challenge trophy for first place in a pair of Heteropagus (Heteropagus, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Hollands.** Challenge trophy for first place in Hollandes (Hollands, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Icichthys.** Challenge trophy for first place in a pair of Icichthys (Icichthys, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Imperator.** Challenge trophy for first place in a pair of Imperators (Imperator, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Iodine.** Challenge trophy for first place in a pair of Iodines (Iodine, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Jupitor.** Challenge trophy for first place in a pair of Jupiters (Jupitor, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Lactatides.** Challenge trophy for first place in a pair of Lactatides (Lactatides, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Lamprologus.** Challenge trophy for first place in a pair of Lamprologuses (Lamprologus, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Monocleus.** Challenge trophy for first place in a pair of Monocleuses (Monocleus, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Ophiocephalus.** Challenge trophy for first place in a pair of Ophiocephaluses (Ophiocephalus, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Pterophyllum.** Challenge trophy for first place in a pair of Pterophylluses (Pterophyllum, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Psittacinae.** Challenge trophy for first place in a pair of Psittacines (Psittacinae, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Pterophyllum.** Challenge trophy for first place in a pair of Pterophylluses (Pterophyllum, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Rhamphichthys.** Challenge trophy for first place in a pair of Rhamphichthys (Rhamphichthys, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Rhinichthys.** Challenge trophy for first place in a pair of Rhinichthys (Rhinichthys, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Serrasalmus.** Challenge trophy for first place in a pair of Serrasalmuses (Serrasalmus, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Schistura.** Challenge trophy for first place in a pair of Schisturas (Schistura, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Selache.** Challenge trophy for first place in a pair of Selaches (Selache, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Tilapia.** Challenge trophy for first place in a pair of Tilapias (Tilapia, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Tropheops.** Challenge trophy for first place in a pair of Tropheops (Tropheops, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Trophopterus.** Challenge trophy for first place in a pair of Trophopteruses (Trophopterus, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

**Yukon.** Challenge trophy for first place in a pair of Yukons (Yukon, 1925). Mr. J. A. Hargreaves (Bath, 56 pm).

A raised platform behind the eye-level sales tanks on Keith Barracough’s stand facilitated serving by staff.
‘Casino Royale’s’

Kitchen Aquarium

A super aquarium used in the latest James Bond thriller film

In the film, when Evelyn Tremble (Peter Sellers, above) visits the spy Vesper's (Ursula Andress) London apartment she shows him her huge kitchen aquarium. Others in a long list of stars in Charles K. Feldman's 'Casino Royale' (a Panavision and Eastmancolor production for Columbia release 1966) are David Niven, Orson Welles, Woody Allen, Deborah Kerr, William Holden, Charles Boyer, John Huston, Barbara Bouchet, Kurt Kaszner and Gabriella Licudi.

CINEMA-GOERS will recognise the beautiful profile of the young lady on PFM's front cover this month as Miss Ursula Andress, photographed through an aquarium which features in 'Casino Royale', her latest film made with co-star Peter Sellers and shortly due for release.

This giant aquarium was specially made for the film studio by the well-known aquarium manufacturers Lee Reid and Co (London) Ltd., and its L shape forms part of two walls of the film's kitchen scene. The lengths of its longest sides are 10 ft. 6 in. and 3 ft. 6 in., the width is 2 ft. and the depth is over 500 gallons. The frame is of angle-iron, although for the film this was covered with girt strip to give the appearance of gold plating, and the glass with 1 1/2 in. polished plate was carried out by the makers on the set at the studio.

Mr Ted Lee set up the tank with rocks and shells as decor, stocked it with goldfish and rainbow trout and looked after it for the 6 weeks it was required for film-shooting. Aeration was supplied from an oxygen cylinder. Mr Lee tells us that both Ursula Andress and Peter Sellers showed great interest in the aquarium and Miss Andress made a point of going to see what she called 'her fishes' every morning she was at the Shepperton Studios.

CASINO ROYALE was the first ever James Bond story written by Ian Fleming, but it is not the only one to involve aquatic or fish settings. We are obliged to Alan Town of Aireborough and District Aquarist Society for pointing out such episodes from other stories. In LIVE AND LET DIE a gun battle takes place in a warehouse in which tanks of tropical fish are kept, and the tanks and their contents are fully described. In this story gold sovereigns are smuggled into America hidden in the gravel of tanks containing poisonous scorpion fish. From Russia with Love is a story having the description of a fight to the death between two Siamese fighting fish and in DR NO, Ian Fleming describes an underwater laboratory with a large glass wall through which the fishes outside can be seen. FOR YOUR EYES ONLY and THUNDERBALL are other Bond stories in which tropical fishes receive mention. Mr Town writes: 'It makes you wonder if apart from having a soft spot in his stories for girls, Ian Fleming also had one for beautiful tropical fish'.

The aquarium in the kitchen of CASINO ROYALE has next to it a deep-freeze cabinet into which human bodies are dropped. Perhaps if he thought of it, Ian Fleming’s aquarium could have heaved piersnas to aid in the operation of corpse disposal!
REIGATE & REDHILL A.S. have been getting together with other clubs at their October meetings. At the first, an inter-club brains trust and table show was held jointly with KINGSTON and MID-SUSSEX societies. The trust panel included Mr K. D. Fawcett, who is Reigate & Redhill president, and some years ago was the chairman of Kingston A.S. First prize-winners in the show were Mr R. Biggs (Kingston) for danio, rasboras and also barbs, Mr G. Bass (Reigate) took first in platy's. On 17th October a party of PORTSMOUTH A.S. members visited Reigate. Though traffic congestion delayed their arrival, the visitors stayed until midnight and gave a slide show of fish and plants. There was also a raffle and an auction. Highlights of the evening was a table show of 12 tropical and 12 coldwater fish per club, judged by Mr C. Brown and Mr R. Esson. The result was a narrow win for the hosts in both sections.

LYTHAM A.S. held their first annual table show recently and attracted over 60 entries. Awards were won as follows:
- Bala: Ms A. Scott (Barbs). 1st: Mr G. Langridge. 2nd: Mr R. Scott. 3rd: Mr R. Scott. 4th: Mr G. Mathews. 5th: Mr R. Scott. 6th: Mr G. Mathews. 7th: Mr R. Scott. 8th: Mr G. Mathews. 9th: Mr R. Scott. 10th: Mr G. Mathews. 11th: Mr R. Scott. 12th: Mr G. Mathews.
- Best fish in show trophy, Mr K. Willett (69 gns). John Hall Trophy, Mr K. Willett. Senior annual trophy, Mr W. Mathews. Junior trophy, Master Colin Langridge. Guppy trophy, Mr W. Langridge. Medals were awarded for all classes along with prize cards.

The second show of the year held by the CAMBRIDGE A.S. was certainly their most successful show ever. Added attractions were the entry of miniature aquaria and a display of locusts, praying mantis, scorpions and rare tropical fish. Mr Dixon of Luton, Beds, judged the entries and the awards were as follows:

MR K. FARRANT presided at the enth annual dinner of the LLANTWIT MAJOR A.S. and welcomed the president, Alderman P. J. Morris, C.B.E. and 36 members and guests. Grace was said by Master Keith Johns and was followed by a very enjoyable chicken dinner. Toasts were proposed by the chairman, Mr P. Battista and Mr Solkhurt and replied to by the president and Mrs E. Taylor of Barry on behalf of the guests. The following cups were presented: The Wing/Cond. Smith Cup to Mr D. Solkhurt as nurturer of the year. The Miles Thomas Points Cup and the Standup Cup to Mr K. Farrant. The President's Breeders Livebearer Cup, the Jimmy Holmes Memorial Cup, the Breeders Egglayers and E. & S. Steer Guppy Cup to Mr R. Wigg. Replica cups were also presented to last year's winners: Mr A. Ibberton, Mrs A. Ibberton, Mrs A. Ibberton, Mr W. Ward and Mr R. Wigg. The following day Mr John, Mr John, Mr F. Battista and Mr R. Wigg attended the F.G.B.S. assembly in Brind where they met many members from the Midlands and the Bristol area. A large number of guppies were to be seen on the show bench. Mr P. Battista took first prize in a class of ten wedge tail females. In a class of 26 coloured

THE first open show of the ATHERSTONE A.S. there were 17 classes and a record entry of 358 from all over the Midlands. Mr Paul Stokes and Mr J. Williams gave a talk and slide show during the judging of the killifish. The shield was given by the chairman, Mr H. E. Jones, for the best fish in show which will be held for 12 months by Mr M. G. Davies of Brancote, Notts. Awards were presented by Mr Frank Randall. The raffle prize was a 2 ft. furnished aquarium and the lucky winner was Mrs G. Godfrey from Woodhouse. Mr D. Delve, the show secretary, was congratulated by all for doing his first-class job.

At the beginning of October the second round of the MIDLAND AQUARIUM LEAGUE was also held at the Memorial Hall. Mr Jim Kelly delighted the audience with a lecture and slides on his visit to American Classes. The 1965 show were:
- 1. Ambanbíd; 2. ciclids; 3. breeders egglayers and the results were: Atherstone, 16 and 11; Coventry, 11 and 15; Leamington 14 and 13; Northampton, 9 and 8; Rugby, 16 and 15. Secretary of the club is Mr E. A. Davies, 4 Ambion Road, Atherstone, Warwickshire.
his commentary on breeding fishes provided an entertaining evening for the WIMBLEDON & METRON A.C. recently, who were also hosts to members of the Roehampton Club. Prospective new members should contact secretary Mr. J. Garbutt, c/o 1 Balfour Road, London, S.W.17.

AT the annual general meeting of the WEDNESBURY A.S. held in September the following officers were elected: president, Dr. P. Hauser; vice-presidents, Mr. Cook, Mr. Griffiths and Mr. Hornby; chairman, Mr. E. Hyde; vice-chairman, Mr. D. Highfield; secretary, Mr. B. Coley, 35 William Green Road, Wednesbury, Staffs; treasurer, Mr. E. Skidmore; show secretary, Mr. G. Rothin; social secretary, Mr. W. Postans; committee members, Mr. W. Mountford, Mr. F. Boulton, Mr. H. Downing. The chairman, Mr. E. Hyde, paid a warm tribute to the retiring secretary, Mr. B. Woodall. Owning to business commitments Mr. Woodall did not seek re-election; but he was held in high regard by all and it was hoped that, whenever he found the time, he would be able to attend meetings of the society of which he was a founder member. Meetings of the club are held on the first Monday evening in each month at the Prince Regent Inn, Stafford Street, Wednesbury at 8 p.m. and new members will be made very welcome.

TWO matters frequently giving rise to discussion among aquarists received full airing at a recent meeting of the TOTTENHAM & D.A.S. but no solutions were reached. The showing of fish and aquaria was the subject discussed and the discrepancies in the pointings of fish for size raised many complaints but no alternative could be suggested to the present imperfect, but workable, system that depended on the differing experiences of the judges. Similarly, a majority felt that fish fed on a colour food should be disqualified but no practical suggestions could be devised for identifying such fish at shows.

THE SECRETARY OF THE RADLETT section of the FANCY GUPPY ASSOCIATION reporting on their annual show in September states that there were 215 entries (or 579 guppies on show). Mr. W. G. Phillips and Mr. Jim Kelly believed it to be one of the biggest shows they had seen in a long time—the standard of the fish was such that they would hold their own in any guppy show and that includes America. 'Does this mean that the guppy is at last coming in to its own?' asks Mr. Goodall. 'Let's hope so, for what other fish lends so much to the hobby?' Detailed results were:

Debutante: 1, Mr. Goodall and Mr. Moon (72 points); 2, Mr. Goodall and Mr. Moon (72 points); 3, Mr. Goodall (72 points); 4, Mr. Goodall (72 points); 5, Mr. Goodall (72 points); 6, Mr. Goodall (72 points); 7, Mr. Goodall (72 points); 8, Mr. Goodall (72 points); 9, Mr. Goodall (72 points); 10, Mr. Goodall (72 points).

Smallest: 1, Mr. Goodall and Mr. Moon (72 points); 2, Mr. Goodall (72 points); 3, Mr. Goodall (72 points); 4, Mr. Goodall (72 points); 5, Mr. Goodall (72 points); 6, Mr. Goodall (72 points); 7, Mr. Goodall (72 points); 8, Mr. Goodall (72 points); 9, Mr. Goodall (72 points); 10, Mr. Goodall (72 points).

Passed for Debuts: 1, Mr. Goodall and Mr. Moon (72 points); 2, Mr. Goodall (72 points); 3, Mr. Goodall (72 points); 4, Mr. Goodall (72 points); 5, Mr. Goodall (72 points); 6, Mr. Goodall (72 points); 7, Mr. Goodall (72 points); 8, Mr. Goodall (72 points); 9, Mr. Goodall (72 points); 10, Mr. Goodall (72 points).

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Past Years: 1, Mr. Goodall and Mr. Moon (72 points); 2, Mr. Goodall (72 points); 3, Mr. Goodall (72 points); 4, Mr. Goodall (72 points); 5, Mr. Goodall (72 points); 6, Mr. Goodall (72 points); 7, Mr. Goodall (72 points); 8, Mr. Goodall (72 points); 9, Mr. Goodall (72 points); 10, Mr. Goodall (72 points).

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RESULTS have been received from the HUDDERSDEN TROPICAL FISH SOCIETY open show held on the 13th September.

Swimshells: 1, Mr. Cohen (White Rose); 2, Mr. G. Godfrey (Mansfield); 3, Mr. F. Lepler (Huddersfield). Groups 1 and 2 and 3 and 4, each section winner: 1, Mrs. W. Sheard (Mansfield); 2, Mr. H. Jackson (Mansfield); 3, Mrs. G. Rose (Mansfield). Groups 5 and 6 and 7 and 8, each section winner: 1, Mrs. W. Sheard (Mansfield); 2, Mr. H. Jackson (Mansfield); 3, Mrs. G. Rose (Mansfield). Groups 9 and 10, each section winner: 1, Mrs. W. Sheard (Mansfield); 2, Mr. H. Jackson (Mansfield); 3, Mrs. G. Rose (Mansfield). Large males: 1, Mr. H. Price (Pontefract); 2, Mr. E. Price (Pontefract); 3, Mr. H. Price (Pontefract). Large females: 1, Mr. H. Price (Pontefract); 2, Mr. E. Price (Pontefract); 3, Mr. H. Price (Pontefract).

EDMONTON SECTION of the FANCY GUPPY ASSOCIATION held an open show at Edmonton Town at the beginning of September. Best in show and challenge cup for breeders' pairs were won by Mr. G. Goodall and Mr. Park.

CRESWELL & D.A.S. held a very successful first annual open show,
receiving 351 entries. 17 Societies competed and 728 people visited the show. Judges were: Mr. R. Colton, Mr. A. Adlake (Sheffield), Mr. A. M. Deakin (Workshop), Mr. A. Lindley Jacksdale. The best fish in show award went to Mr. Parks (Merseyside). Results were:

**Cichlids**
1. Mr. J. Sutton (Huddersfield); 2. Mr. T. White (Huddersfield); 3. Mr. A. Mason (Mansfield); 4. Mrs. Deakin (Workshop); 5. Mr. J. Wright (Sheffield); 6. Mrs. Deakin (Workshop); 7. Mr. J. Wright (Sheffield); 8. Mrs. Deakin (Workshop); 9. Mrs. Deakin (Workshop); 10. Mrs. Deakin (Workshop); 11. Mrs. Deakin (Workshop); 12. Mrs. Deakin (Workshop); 13. Mrs. Deakin (Workshop); 14. Mrs. Deakin (Workshop);

**Chondrophorus**
1. Mr. J. White (Huddersfield); 2. Mr. J. White (Huddersfield); 3. Mrs. Deakin (Sheffield); 4. Mrs. Deakin (Sheffield); 5. Mrs. Deakin (Sheffield); 6. Mrs. Deakin (Sheffield); 7. Mrs. Deakin (Sheffield); 8. Mrs. Deakin (Sheffield); 9. Mrs. Deakin (Sheffield); 10. Mrs. Deakin (Sheffield); 11. Mrs. Deakin (Sheffield);

**Fishes**
1. Mr. J. White (Huddersfield); 2. Mr. J. White (Huddersfield); 3. Mrs. Deakin (Sheffield); 4. Mrs. Deakin (Sheffield); 5. Mrs. Deakin (Sheffield); 6. Mrs. Deakin (Sheffield); 7. Mrs. Deakin (Sheffield); 8. Mrs. Deakin (Sheffield); 9. Mrs. Deakin (Sheffield); 10. Mrs. Deakin (Sheffield); 11. Mrs. Deakin (Sheffield); 12. Mrs. Deakin (Sheffield); 13. Mrs. Deakin (Sheffield); 14. Mrs. Deakin (Sheffield); 15. Mrs. Deakin (Sheffield); 16. Mrs. Deakin (Sheffield); 17. Mrs. Deakin (Sheffield); 18. Mrs. Deakin (Sheffield); 19. Mrs. Deakin (Sheffield); 20. Mrs. Deakin (Sheffield);

**Future of the Society's Events**

The beginning of February, the A.G.M. was held when the new committee was elected. The March table show was for dwarf cichlids and a film on 'The Golden Eagle and Wildlife in Scotland' was shown by one of the old members of the society, filmed during his holiday. Later on in the month a lecture was given by Mr. S. Pepper (of the Mansfield Water Board) on 'Water'. In April there was a Bring-and-Buy sale, also attended by members of other societies. On the 7th April the inter-society tournament between us and Northampton. Tropical Fishkeepers was held at Northampton. This turned out to be a very good social evening and a return boat at our own club room was held on the 18th May. This was very much enjoyed by both societies, especially Mansfield, as they came out on top over the two shows.

In June a talk was given by Mr. A. Atkins on 'Fishes Diseases' (for this everybody went home to find all the diseases mentioned). We must not forget, of course, the big day of the year for the Society - 26th June - Mansfield's open show, where nearly 300 exhibits were on show. The society are very grateful to all people taking part to make this another enjoyable and interesting show. July incorporated a visit to a lake in the area to study 'Water-life' and collect live food. This is another venture that has been asked for again next year.

August's main venture was a trip to Chester Zoo, which was thoroughly enjoyed by all. This included a visit to the working side of the aquarium, for which we send our warmest thanks to the staff concerned. Later on in August there was a social evening for families and friends. Mr. Bower, on behalf of the club, extends a very warm welcome to anyone in the Mansfield district who would like to join in these activities and they are cordially invited to apply to him for details of membership. He ends his letter: 'Best of fishkeeping to all', which we certainly seem to apply to the membership of this society.

**In Brief**

**MERSEYSIDE A.S.** Newsletter is to get a new shape and a new name in 1967. The choice has been made out of 21 suggested names and only one will be known when it appears on the next issue. It is to be distributed to Europe, Australia and North America, and the editor, Mr. R. Gallon, contact for Finnmark, Africa South America, and the Far East.

**NORTH OF SCOTLAND A.S.** announce a change of secretary, Mr. D. Hoy (33 New Park Road, Maitland, Aberdeen). He will serve as acting secretary until the A.G.M. in February. Also a change of meeting time — now on the second Tuesday in every month in the Aberdeen Zoo lecture room at 7.30 p.m. (instead of the first Tuesday at present).

PRESSURE on space caused by recent reports of the main open shows has meant that some society news has unavoidably missed inclusion in this issue.

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**FINAL CALLING ALL NEW CLUBS!**

The following progress report on the new societies welcome to our society sent to us by MANSFIELD & D. A.S. gives a really good idea of the many valuable interests that an enthusiastic membership can take part in. Mr. J. W. Bower, the secretary (7 Robin Hood Avenue, Warsop, Mansfield, Notts), writes: 'The Society has had quite an active programme over the past 8 months beginning last January with the annual Dinner and Dance, which was very well attended and at which the president of the Society presented the previous year's awards for the following items: Challenge shield for trophy, Mr. C. Hill; fish of the year, Mr. J. W. Bower; horse furnished aquaria, Mr. R. V. Dyson.'

The October monthly table show (8.00) was won by Mr. P. Moorhouse with Mister Hesley second and Mr. Moorhouse again third. The other class results were 1st and 3rd, Mr. J. Brown; 2nd, Mr. D. Kennedy. This was held at the end of a most enjoyable slide programme provided by Mr. B. Percicy.

The October meeting of the DUNDEE A.S. took the form of the half-yearly inter-club meeting, with 43 members from PERTH and from the Dundee club present. Dundee acquired 25 points and Perth 13 with the following results: Arranoids: 1st, Mr. A. Overstone (Perth, best fish in show); 2nd, Mr. W. S. Russell (Dundee); 3rd, Mr. G. Reid.
(Dundee); 4, Mr J. Ireland (Perth), Catfish: 1, Mr F. McNaughton (Dundee); 2, Mr D. Anson (Dundee); 3, Mr A. Overstone (Perth); 4, Mr R. McFarlane (Perth). Breeder's egglayers: 1, 2 and 3, Mr J. Robin Baxter (Dundee).

... New secretary of the BRITISH KILLEFFISH ASSOCIATION is Mr Cliff Bell, 125 Buckingham Grove, Kidlington, Stuffs.

... AT the A.G.M. of DIDCOT & D.A.S. the following officers were elected: chairman, Mr Fred Hall; treasurer, Mr Tony Dunse; show secretary, Mr Alec Chadwick; committee, Joan Cartin, Geoff Dowling, Peter Tuckey, Arthur Wilkinson. Secretary is Mr Norman Tucker, 120 Abingdon Terrace, Didcot, Berks.

... WIGAN & D. A.S. have recently moved to new premises at the Whitesmith Arms, Standingley. Meetings in 1967 will be held on the last Tuesday of each month. Further information from the secretary, Mr Ken Brench, 49 Mosley Avenue, Worsley Cross, Wigan.

... GOSPORT & D. A.S. have elected three new officials: chairman, Mr W. N. Ayres; secretary, Mr K. Clough; F.B.A.S. delegate, Mr Neylon. The club community tank is sporting a new shoal of glowlight tetras and a pair of Nosolites sulcifasciatus thanks to a generous gift of fishes from Wingate of Winchester.

... Fish enthusiasts of BURY ST. EDMUNDS! Now is your chance to help in the foundation of an aquarist society. Contact Mr J. Riley of Anglia Aquatics, 43a St. Andrews St. North for more information.

... HOUNSLOW & D. A.S. Home-Furnished Aquarium competition has been won by Mr A. Hastings (15 pts); 2, Mr K. Mason (15 pts); 3, Mr J. Thorne (14 pts). Junior section: 1, Master Bunce (15 pts); 2, Master Ind and Master C. Walker (14 pts); 3, Master Clive Walker (9 pts).

... UXBRIDGE & D. A.S. are pleased to announce that Mr Arthur Boarder and Dr R. B. Last have been made honorary members of the club. January next will see the publication of the club's first magazine, to be published quarterly.

The End of an Era

W. G. Phillips

OBITUARIES are difficult things to write, and when the person concerned was also an old friend, then the recording of his passing becomes even harder. With the death of W. G. Phillips on 14th October, at the age of 84, the 'fishy' world lost not only an active hobbyist but an author, judge and fine human being.

Very few aquarists can boast of joining a club in 1899 but 'George', as he was affectionately known, made his first tentative steps towards becoming a fishkeeper then at the age of 17, at a time that saw Queen Victoria receiving the news of the outbreak of the Boer War. The club was the Southsea Pisciculturists and from that modest beginning he soon made himself and his efforts in breeding fish known. His main work came just before World War 2, when he was in at the founding of the first guppy specialist society in Great Britain, the Guppy Breeder's Society. He became their first official judge and main supporter of the 'five twentys' method of pointing, a system that he lived to see used universally wherever fish shows were held.

In 1966, he became the Founder President of the Fancy Guppy Association, and from his fertile pen poured literally thousands of words on guppy lore. Always ready to defend our ideals, he became the champion of the 'underdog'. As the funeral cortège moved away from his home in Regal Way, Harrow, Middlesex, I noted with pride that his passing was being commemorated by many notables in the hobby who attended his funeral. This home, one of the most beautiful houses that had been a veritable Mecca for guppy breeders from all over the world, resounded once more to the topics beloved of aquarists when they get together.

As my old friend and most ardent critic, I feel his loss deeply and, having been his biographer in life, feel he would have approved of your Editor's choice in allowing me the privilege of writing these few words.

Floral tributes and messages of sympathy were received from many aquarist clubs and to his widow, Helena, we extend our deepest sympathy.

His death leaves a gap that will be very difficult to fill. As a final tribute, the Fancy Guppy Association have decided that W.G.P. would be the first and last President.

Truly the end of an era.

Jim Kelly

Dates for your Diary

21st December: FEDERATION OF BRITISH AQUATIC SOCIETIES general meeting at Conway Hall, Red Lion Square, London, W.C.I.


27th May 1967: READING & D. A.S. will be staging the 1967 THREE COUNTIES AQUARIIST SHOW at The S.G.B. Social Club, Gas Lane, Reading. Benchings from noon, Friday, 26th May. Further details and schedules will be available in due course from the show secretary: Mr C. Masters, 16 Morcombe Avenue, Caversham, Reading, Berks.

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<td>2 3/4&quot;...</td>
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<td>3/6 up to £4.</td>
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<td>The Aquarist...</td>
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<td>Over £4 carriage free.</td>
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13. Cryptocoryne wendtii, 6d;
14. Cryptocoryne undulata, 6d;
15. Cryptocoryne plectandra, 6d;
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44. Cryptocoryne undulata, 6d;
45. Cryptocoryne plectandra, 6d;
46. Cryptocoryne lutea, 6d;
47. Cryptocoryne zonalis, 6d;
48. Cryptocoryne parviflora, 6d;
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**STAINLESS STEEL MESOPHAGE**

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<tr>
<td>Windmill Air</td>
<td>15</td>
</tr>
<tr>
<td>Windmill Hand</td>
<td>10</td>
</tr>
</tbody>
</table>

**ARMS STEEL**

<table>
<thead>
<tr>
<th>Type</th>
<th>Price <em>£</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>19 x 12 (6)</td>
<td>5</td>
</tr>
</tbody>
</table>

**AQUAMATIC**

<table>
<thead>
<tr>
<th>Type</th>
<th>Price <em>£</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Hardness</td>
<td>5</td>
</tr>
</tbody>
</table>

**DUODENSIT**

<table>
<thead>
<tr>
<th>Type</th>
<th>Price <em>£</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy</td>
<td>5</td>
</tr>
</tbody>
</table>

**MISCELLANEOUS**

<table>
<thead>
<tr>
<th>Type</th>
<th>Price <em>£</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy</td>
<td>1</td>
</tr>
</tbody>
</table>

**OTHER FISH FOODS**

<table>
<thead>
<tr>
<th>Type</th>
<th>Price <em>£</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>20 lb.</td>
<td>6.5</td>
</tr>
<tr>
<td>50 lb.</td>
<td>12.5</td>
</tr>
</tbody>
</table>

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