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Comments and Quotes

○ How others see us ○ Famous
coral reef threatened ○ Fish reach
the big city

Quotes on
the Show

ALTHOUGH the exigencies of
press dates do not allow us to
do more than briefly mention The
Aquarium Show 1969 in this month’s
issue (and give details of the awards
made on the competitive side), we
could not resist quoting from one of
the write-ups in the national Press—
a case perhaps of how the non-
aquarist sees us? Mr Philip Howard
wrote in THE TIMES: “An immense
shroud of assorted and exotic fish
descended upon London yesterday
for an annual reunion at The
Aquarium Show. There were cardini-
nals from the Amazon, tiny trans-
parent creatures immodestly showing
their innestines; triangular angel fish
trailling finny harps and clouds of
glory behind them; sluggish,
whiskery catfish with mouths like
vacuum cleaners, mournfully sucking
sand off the floor; guppies and
Siamese fighters, sebras from India,
awards from Mexico, flying foxes
from Thailand. There were fish in
bright Crusader mail, and fish with
voluminous chiffon bustles. . . . All
the specialist breed societies have
their own stalls laden with exotic
literature. . . . At the bookstall
enthusiasts pore over massive vol-
umes with titles like The Dazzling
TOOTHBRUSH IN SICKNESS AND HEALTH
. . . Teams of judges with clip-
boards peer intently at tiny fish,
inspecting them for various points
including condition and department.
Regional aquarium societies have
entered astonishing exhibits. . . .
Fish lovers grew to look and behave
like their pets, standing mute and
motionless for long minutes peering
into the face of a fish three inches
away, and then suddenly without a
word darting away in panic to stare
at the 22 in.-long fruit-eating paco
paco from South America in the
next tank. The great fish show goes
on until Sunday night at the Royal
Horticultural Society’s Old Hall in
Vincent Square. This means that
for the rest of the week all the stray
cats of Pancras will sit on the steps
of the hall with eyebrows raised in
wild surprise, sniffing a very exotic,
ancient and fishlike smell.”

Reef in
Peril

WHAT looks to be another example
of what can be the sad results of
man’s interference with the natural
state of things is being provided at
the Great Barrier Reef. According
to a report in THE SUNDAY TIMES,
this colourful coral wonderland is
suffering a plague of giant starfishes
that are eating the living corals and
destroying them at the rate of about
a mile every 10 days. Not only is the
beauty of the underwater scene
thereby spoiled but the whole ecology
of the area is threatened. Two
explanations are presented for the
sudden deterioration on the Great
Barrier Reef: one is that extensive
collecting of trumpet shellfish,
which normally eat (and so keep
down their numbers) the starfish
that is now causing the trouble, has
been responsible; the other is that
dredging and drilling for oil in the
vicinity of the Reef have changed
things so that growth in numbers of
starfish has been favoured. Fortu-
nately, high officials are taking an interest in happenings on the Reef and ways of checking the threat are being sought.

**Sweeter Thames**

AS we have noted before in these columns, everyone is quite excited at the news that the river Thames is becoming clean enough for fishes from the sea to ascend as far as Fulham and for freshwater species to reach and live in the regions 15 miles or so downstream from there. This has not been possible for these fish for many years owing to pollution of the river, which is now being controlled. However, it was with a wry smile that we read in national newspapers that anglers were planning to fish from barges in the Thames between Westminster bridge and Wandsworth to see what could be caught. Must the hook and line boys move in just as soon as the fish begin to appear?

If you had to work out the weight of your aquarium with its rocks, gravel and other contents, would you know how to do it? PFM Aquarium's Diary 1970 tells you how and gives lists of other fishkeeping data as well (7s post free from PFM Office).

Glazing a tank? Sizes of glass, weights of glass, amounts of putty— all these are given at a glance in PFM Aquarium's Diary 1970 as well as tank and pond capacities and ever so much more useful information (7s post free from PFM Office).

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**Fish that Red Lighting Works Wonders For**

I had always regarded the featherfin tetra (*Hemigrammus unimaculatus*) as nothing very special until I saw a small shoal of them in a dealer's tank several weeks ago. They had always seemed a rather dull and unenterprising variety that somehow never quite came off. What impressed me about the specimens I saw was the red on the dorsal and anal fins, with the contrasting splashes of white, which gave the fish a very gay appearance. Furthermore, they were all busily investigating a leaf on which one of their number had probably spawned, and the silvery and very graceful gyration they made were altogether unexpected.

I inevitably selected what looked like a pair and whispied them into quarantine. They acted as though they had been in quarantine all their lives, and took food from the moment they got into their new quarters. This is always encouraging, since fish off their feed often fall victim to one disorder or another, but those that are so obviously at home never seem to get into the same sort of trouble. Another point about their conduct was their showiness, and they flaunted their charms right in the forefront of the tank for most of the time they were there. They put as much movement into life as the zebra, but it never seems to get irritating, and the flashes of silver as they turn and turn about are most fetching. I am quite amazed how attractive these fish now seem in the community tank, as the books have never exactly given them top ratings. I have no doubt that Gro-Lux lighting helps them a lot, as it brings out the red in the fins to perfection. On the other hand, it is possible that I bought a variety not normally available.

There appear to be two main groups—one from the area of Trinidad and the other from Brazil. Those in the latter may well have colour features that give them the edge over the others, but in all events both seem to be worth a place in a mixed collection. For the breeder there are boundless possibilities because this is not a difficult species to condition and spawn in the tetra fashion, and I will keep this in mind for later in the season when I have more time for looking at the 'breedability' of the fish I keep.

The featherfin is often likened to the prinella (X-ray fish), and the suggestion is that this, too, is a rather uninteresting fish. I completely disagree with this sort of talk, as they are both gay creatures and their dorsals are like the penannulars on a knight's lance; they are distinctive enough to serve the same sort of purpose. I shall be interested to discover whether the featherfin is as hardy and long lived as the prinella, for if it is, it ought to feature on those Beginners' Lists of Desirable Fish which so often grace the opening pages of books on the subject.

It is interesting that this variety has not been on sale locally for over six years, and I simple cannot understand how this sort of maldistribution should come about. The variety was well established in the early part of the century, but seems not to have settled as a stock line. A great pity—perhaps the Gro-Lux tube will give it that bit of distinction which makes all the difference. It will certainly have to do something pretty terrible for me to take it out of my collection during the next few years, and I hope to get to know a lot more about it before the year is out.

By R. S. B. PINKS
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LETTERS

Standards for Goldfish

In your leading article in the November issue of PFM you reported discussions taking place between the Goldfish Society of Great Britain, Bristol Aquarists’ Society and the Midland Aquarium and Pool Society regarding the production of a set of national Show Standards for goldfish varieties. A clarification of the position seems to be desirable at this stage.

As soon as the G.S.G.B. was formed 21 years ago it proceeded to draw up its own show standards as other standards then in existence were absolutely unacceptable, mainly because they were anatomically impossible. A few years later the Federation of British Aquatic Societies had discussions with the G.S.G.B. and B.A.S. regarding national standards. Agreement was nearly reached, but owing to a time factor the F.B.A.S. went to press with a fresh set of standards which the G.S.G.B. could not entirely accept. The latter therefore continued happily to use its own standards, which eventually were extended to embrace 11 varieties. The metallic, nacreous and matt groups for each variety were and are acceptable on the show bench.

In 1968 the F.B.A.S. approached the G.S.G.B. with a view to agreeing upon one universal set of standards for goldfish-keepers. On and March 1969 it was agreed that the standards as laid down by the G.S.G.B. would meet this requirement. The F.B.A.S. agreed that it would formally withdraw its standards in favour of those of the G.S.G.B. It was part of the agreement that “in all matters affecting the Exhibiting, Showing and Competing of Goldfishes the G.S.G.B. shall be considered the duly authorised body” and “this agreement shall take effect from 1st January 1968”. There was also a gentleman’s agreement that the G.S.G.B. would prepare a standard for the comet to add to its own set and also for the broadtail moor, which, however, was not for showing at the G.S.G.B. shows at this stage. These standards were prepared and issued. Subsequently the Federation of Northern Aquarium Societies and the Scottish Aquarium Federation also adopted the G.S.G.B. standards.

However, the G.S.G.B. did not regard its standards as beyond improvement and so invited B.A.S. and M.A.F.S. representatives to meet us at Kildington on 13th October 1968. At this meeting it was possible to get a general idea of the areas of agreement and to take note of criticisms of the G.S.G.B. standards that were put forward. During the past year the G.S.G.B. standards committee has made a very close scrutiny of its 12 standards. These have been compared with specimens and photographs of each variety. The diagrams have been drawn and redrawn. We have been able to consult variety specialists within the G.S.G.B. and have invited discussion with breeders of the Bristol shubunkin from Bristol. We would like all goldfish breeders to agree at least upon the ideal shape for each variety. But it must be made clear that any modifications which the G.S.G.B. Standards Committee recommends must be submitted to and agreed by the general G.S.G.B. membership. It follows that any discussion with non-members are purely friendly and exploratory.

Progress has been reported at our quarterly meeting held on 8th November 1969. The stock of our present standard booklet is getting low and we hope to produce a fresh set in 1970. Our first priority is to produce a diagram of each of our varieties. Subsequently there are a number of other matters regarding type-testing, pointing and nomenclature to be considered.

M. D. CLUSE
Chairman, G.S.G.B. Standards Committee

Difficulties over Spares

I wonder if any of your readers have found difficulty in obtaining spares for brine-shrimps hatcher. Recently, when I was at the B.A.F. at Belle Vue, I was informed that the brine shrimps nets that fit in the hatcher are unobtainable without buying the whole system. Obviously these nets, in time, must wear out. My hatcher is not yet 12 months old and the net itself appears to have ‘melted’, although it has not been in contact with heat or any chemical other than salt and water. One does not wish to buy a complete hatcher when all that is required is a small net. Surely it would be an easy matter for the manufacturer to supply these spares?

M. M. J. WATKIN
Newcastle, Staffs.

Participation in Societies

Perhaps Mr Jim Kelly’s article did not offer any practical suggestions, but I feel he is achieving what he intended, that is to get other aquarists to express their views and suggestions (Participations). Mr Kelly, if you had to remove five or six people of your choice from any organisation (baby or otherwise) you could wipe out the organisation! We all start as hobbyists originally and either change our hobby within a few months or continue on one of the following two courses.

(a) The Few: The society administrators, committee
members etc. The majority of this group soon disappear from the aquarist scene unfortunately, this is because the more you become involved with society management the less time you have to devote to the hobby. This has happened to me and I are sure many other people on the aquarist scene also. In fact, I have not got even one fish.

It is not row a hobby but a job of work, one which I enjoy doing I might add.

(a) The Hobbyists: The majority of the aquarists, who are fishkeepers interested in breeding and perhaps showing. The majority of this group are usually around for many years.

Only a few do the work? The society officials and committee are elected by the members to manage the society; they are the few. When more societies realise this and they get on with the managing, then if the occasion arises for member participation you will more often than not get it.

I would imagine the Hendon and District Aquarist Society have an advantage over most societies; they are situated in a very heavily populated area. Attendances of 100 people at weekly club nights, Mr H. G. White—are they all subscribed members, and if so, how many attend 50 meetings a year? I would hazard a guess and say your total membership is in the region of 250?

In less populated areas, weekly meetings in my opinion are too often. Monthly meetings which are structured with informal get-togethers in between are to be preferred.

For informal meetings members act as host in their own house and usually provide light refreshments. This gives you chance to see each other’s set-ups of fish etc. This sets the scene for some very informative, lively, informal discussions and is a change from the more serious, formal, structured meetings.

The minimum of business is conducted at structured meetings and on occasions there is no business discussed at all. Try and cover more than one subject at each meeting with at least one speaker who is a non-member.

Don’t let talks go on too long, or the audience will get restless and bored. Any type of visual aid is an asset, such as blackboard, demonstrations (including member participation), slides, films, samples and specimens etc. By covering more than one subject at each meeting you will create interest for everyone and your attendance will increase.

To cover only one aspect of a subject enables you to recall the speaker at some future meeting. Most societies hold monthly table shows of fish, so always try and find time to discuss things, say fish of the month (member participation).

For recruitment, besides local paper advertisements, posters, word of mouth etc., what about invitation cards placed in shoppers’ bags by the local petshops, which should include secretary’s name and address in case prospective members require additional information. Then duplicated information of your society can be forwarded if requested. This also saves having to tell new members each month about the functions of the society (bores other members), but don’t forget personal contact with new members and guests.

Social activities are good for making friendship and getting members’ wives to participate, but should be separate from other meetings—after all we are aquarists.

In summary
1. Always find time to meet new members and guests.
2. Try and create interest for everyone at each meeting—juniors, new members and members of long standing.
3. Talking is not enough—have visual aids wherever possible.
4. Encourage a short discussion at meetings to get member participation.
5. The only job at the monthly meeting that usually requires you to leave the room, therefore missing the lecture etc., is to prepare supper. This will often be done by female members, and because of this they lose interest and stop participating. Female members are few and far between, it would appear—the ones that do attend are interested in the hobby so don’t kill that interest.
6. Don’t meet too often (this depends on how many speakers are available in the area and the number of your membership, besides other factors of course).
7. Avoid repetition, avoid frequent member speakers if possible, avoid long lectures. Remember, though, we must encourage member speakers because they are tomorrow’s potential speakers.
8. Don’t discuss business at meetings; this is the job of the committee. This will mean that a newsletter should be sent to each member as required with extracts of minutes, society business etc.

G. E. Walker, Secretary.
Aireborough and District Aquarist Society

A Plea for Reserve Cards

WHY is it that at all open shows there are never any reserve cards given out, like at most dog shows? Surely this would give the novice such as me a more hopeful chance of ‘Well, maybe it never came first but at least it has potential and with a little more care and feeding I can maybe take a first prize’?

Many is the time when I have benched my fish in an open show no reserve or anything has been given to my fish and this has made me lose interest—to see the same fish being placed first again and again. Now I find, with great admiration, that my own society Aireborough, in their open show, have a Novice Class, where at least I can put my fish on the bench with hope and will not be competing against fish that have already won a first in an open show. Perhaps other societies will take just a little care in preparing their open show and, like Aireborough, think a little more about the novice. He is the one who needs confidence for later years. Well done Aireborough!

Bradford, J. Yeabs.
R. P. Skidmore
AQUARIST IN GHANA

Getting Your Fish by the Bucketful

DURING the last 3 weeks I have been quite busy collecting further fishes, etc. First of all I went to Akosombo where the new Volta Lake is held in place by a large dam. I arranged to stay there through the offices of the Institute of Aquatic Biology in Accra and was told I could stay as long as I liked. However, in the event, I spent only a week there and for a lot of that time I hung around the fishing havens below the dam to see what the locals were bringing in and what fishing methods they used.

One young fisherman of the Ewe (pronounced Evi) tribe, called Moses, showed me the gear they used and I took photos of several large fishes caught there regularly. The common cichlid Tilapia, which often reach a foot in length and are the basic food fish in the main lake, seemed rather scarce below the dam. The reason for this was not because there were fewer of the fish about but because, in the lake, gill nets are frequently used whereas Moses and his associates used 'long-lines' similar, I believe, to the equipment once used for catching cod off Newfoundland.

These 'long-lines' consist of a long (several hundred yards in some cases) piece of cord, weighted at intervals, and left on the bottom of the river. About a foot apart, baited hooks are fastened to this cord by a short length of nylon monofilament. This kind of gear usually catches bottom-feeding fishes such as Lates, mormyrids, Clarias, Synodontis and others such as Latex, the vicious Nile perch, and the attractive Distichodus, related to the characins.

I went out one afternoon with one of the fishermen while he was rebaiting and checking his lines. I paddled that shaky canoe while he pulled in the line, starting at a marker float in the middle and stretching for a couple of hundred yards to the opposite bank of the Volta. The water was very deep, so the current was, mercifully, slow. At first, a few small (8 in.) silver Chrysichthys catfish (called V.C.10's by the locals) came up, followed by a large Synodontis, which creased away for half-an-hour in the canoe; then, suddenly, a large electric catfish all of 2 feet long, was stirring up the water beside us. The fisherman grabbed up his harpoon, but instead of throwing it into the brute he stood there, 'I da fea', he said, and jerked the line so hard that the hook broke and the fish sunk back out of sight. The strength of the shock these catfish can give is something I have no personal experience of, but it must be quite considerable. All the Volta fishermen recognise this species as 'the electric fish' and are full of

Photographs by the author

A species of Mormyrys (one of the 'elephant fishes') caught in the river Volta at Akosombo
stories of what happens when you teach it. One of the researchers at Akosombo told me that they had once had a small electric catch, only a couple of inches long, inside their shoe, and that the shocks it gave were ‘like standing on thorns’.

The bait used on these lines gave me a surprise at first. The fishermen I went out with were using small termites as bait. These seemed so small that I would have thought fish like the yard-long moruy and moruy would have ignored them—but apparently not. For offbeat types of bait, though, you would have to go a long way to beat palm kernel; this is a woody, hard fruit found on certain palm trees, and I once saw it used as bait for narrowheads and catfish in western Ghana.

However, many of the fishermen on the Volta use the small freshwater herring Pollosoma species. These delicate little fish are some 2½ inches long usually, and are caught in huge numbers in the faster water just below the powerhouse on the dam. I had a go at catching them myself with a casting net there and soon had a large number. Unfortunately, these little fish are unbelievably fragile and die after even the gentlest handling.

Another form of bait I have seen used on the Volta is the soft abdomen of estuarine hermit crabs. These used to be brought up by the bucket load from the mouth of the river but I saw none this year.

When we finished setting the lines that afternoon the sun was very low and the afternoon’s wind had dropped. All around us large numbers of splashes showed where some of the bigger fishes were having their evening meal, or coming up ‘for a breath of air’. I threw a small piece of bread into the water and a school of Aleste chaperi, or a similar fish, came up to investigate.

After a few days at Akosombo, I went to Kpando in the Volta region. This town was originally quite a few miles from the Volta river but now that the Volta Lake has filled up, a 4-mile drive down a very bad road takes you to Kpando Tokor on the lake margin. Here barges carrying snooked fish, yams and passangers navigate into the shore past the dead trees rising out of the water.

I was able to stay with one of the teachers at the Bishop Herman College there, so I used this as my base. In fact, in the 3 days I was there I really did lots of fishing. The most interesting spot I went to was the Tsqtsa River, which, I believe, runs into the Volta Lake. At first, I fished in the river beside the main road between Hoibo and Kpando where it is fairly slow-flowing, but further upstream there is a waterfall in which a group of us found an unusual yellow Barbus species a year ago. However, I have my doubts about this fish and it is possibly a colour variety of one of the local barbs.

Among the first fish I caught in the lower river were little lampeyes, probably belonging to a species as yet undescribed, which is found over the whole forest region in Ghana and E. Ivory Coast. I think those are pretty small fish, with far more to offer the community tank of small fishes than many species of Barbus and Rishora commonly kept. But, of course, I am biased, and the fishes I catch myself are always more appreciated than the ones I buy ‘over the counter’ in Britain!

This river also boasted some small Aleste and that ubiquitous brute Homrichius fuscatus, but, rather to my surprise, no Epiplatys. The Volta Region of Ghana is where the ranges of Epiplatys chaperi and E. sexfasciatus meet and yet, in this typical forest stream, there was no sign of the shining head spot of Epiplatys.

After this stay in the Volta Region I went back to Tema, expecting to be able to rest for a couple of days. However, Harry Drewry, a friend from Takoradi, had arrived and said he could take me back there the next day, so off I went, dragging along my reluctant young brother, Jeremy, to act as assistant.

The first day in Takoradi we hitched a lift to a spot some 15 miles west of the town, to a place where a little stream, buried under bamboo, runs seawards. We were looking for the big colourful sub-species of Epiplatys chaperi found in this area and for Aphyosemion walkerii (spawli). Certainly the Epiplatys were abundant but mostly very small. Such adults as we did catch were monsters, between 2 and 3 inches long, with vivid coloration.
on the males. This stream was cool and shaded with a clutter of leaves and bamboo fronds on its bed. The water was extremely shallow and as one walks through it the *Epipilaya* can be seen ripping along on the surface. The *Aphymenum* is less abundant and harder to find, but scooping under leaves right in the margins of the stream usually yields some results. In fact, that day we caught only half-a-dozen *Aphymenum*.

When we arrived back at Takoradi we walked round to see Mr R. Blayney—an English businessman living in Ghana. He has a very nice set-up and a lot of local fishes as well as such imported species as angel fish, platys, etc. I arranged to leave the fishes we had caught at Ray Blayney’s house, and after we had looked at his pets (a civet cat called Brunus, two small gecko cats, a monkey, dogs and rabbits) we left.

The next morning, Jeremy and I set off for Esima. This is a village about 60 miles west of Takoradi, and about 10 miles west of the Ankobra River. This river is not very wide—only 200 yards or so at the mouth where it is crossed by a ferry, but the ferry is such a slow, hideous cable-driven affair shuddering in the current that that 200 yards seems a very long way.

Once on the west bank of the Ankobra the nature of the country changes somewhat. In the coastal area around Esima, despite the high rainfall, the true tropical forest has not developed, but rather there are swamps filled with various palm-type trees and grotesque ‘elephant ear’ plants. Incidentally, this seems to be good snake country—we saw three in two days and one of those, a large black snake (possibly a forest cobra) swam across the river right beside us.

Our destination was the Nima coconut oil factory, midway between Esima and the village of Nkroful where ex-president Nkrumah was born and where his mother still lives. I had previously written to the manager of the factory to tell him we were coming so he wasn’t surprised to see us come into his office with two seine nets, six buckets, a huge scope-net, plus a rucksack and bags. There is a little rest house inside the factory compound, which even has running water and electricity, with a fridge and a cooker.

About a hundred yards from the rest house, the Franz River runs towards the lagoons and swamps just west of Esima. The Franz is greatly honoured by this title of ‘river’; it’s really little more than a large stream, fast-flowing in places, and filled with cool, clear brown, acid water. Because of soil conditions, many of the streams in this part of the country contain virtually no inorganic material. A result is that calcium for bones, teeth and scales is in short supply and to counter this many fishes in these streams are of small size, and one, a tiny tetra called *Lepidarchus adonis*, full-grown at 1 inch, has only two scales altogether on its whole body.

Well, Jeremy and I plunged into the Franzia that afternoon, much to the amusement of the locals, who, of course, considered us more than just mildly insane. With the scoop net, we soon had a few pipefish. When I showed these to local fishermen they shook their heads and told me they had never seen such a fish before. Some fishermen I have met consider these straightened-out sea horses to be a kind of water-snake, but all are agreed on one thing—they are inedible and therefore not worthy of attention.

Since most fishes in the Franzia are very small, the fishermen thereabouts are not much interested in them. However, a few do reach an edible size. One man staked out traps and caught *Hemichromis fasciatatus*, *Ctenopoma liniense*, snakeheads and the like—in fact, one snakehead not much short of 2 feet long and built like a torpedo came up in a large trap. Another fisherman there was catching beautiful large *Alates longipennis* (for food—much to my disgust!).

*Continued in next month’s issue*

Where would you find a comparative summary of the three main kinds of aquarium lighting? Only in *Pet Fish Magazine*’s *Aquarist’s Diary* 1970, which is where you can always look and expect to find the basic facts and figures of aquarium-keeping (7s post free from *PFM* Office).
Transatlantic TOPICS

EVERThere was a time when dextrous demonstrators in our stores cutting glass! So simple did one such demonstration make it seem, that even I was persuaded that it all depended on the cutter you used and left the shop, my pocket depleted by ten bob but my morale boosted. With this instrument even I could repair broken aquariums; after all, didn't the salesmen say: 'Even a child could use it?' Alas, my attempts cut no ice, nor any glass either.

Writing in the Canadian magazine CALARIUM, Bill Wood, Senior, gives some useful hints on the subject. If you are a wizard with a glass cutter perhaps you will hear with those of us who are not?

Fragments of broken glass are a big danger; cover your cutting area with three or four sheets of newspaper and keep the working space scrupulously clean by frequent brushing.

When making the scratch, as you approach the edge of the glass always assume that the piece is longer than it is and do not slacken up on pressure.

A new glass cutter has a very sharp cutting wheel and first attempts tend to flake the glass; this can be avoided by first dipping the tip of the cutter in turpentine or light oil.

Ordinary needle-nose pliers can be used to grip the glass if both jaws are separately bound round with strips of insulating tape.

Don't forget that the edges of newly cut glass are very sharp; rub them down with either a carborundum stone or rough file.

** Prohibition in the U.S. and how it caused people to behave in a new ancient history. How any creature carries on when it has had 'one over the eight' doesn't seem such an important issue either, yet the answer to this question is forming part of a $70,000 dollar research project—but not on how humans react but how fish do!

Dr Irving Geller from the South-west Foundation for Research and Education is studying the way goldfish behave when swimming in alcohol because he believes that their actions may hold the key to man's attitudes under influence.

At San Antonio, he is passing fish through a series of mazes, first sober and then drunk, just to see if the inebriated goldfish are more adept.

Shades of green crystals, it's enough to take your breath away! One thing is for sure—I bet our learned doctor is never short of volunteers when it comes to the 'cheers' of siphonating out his fish tanks!

* * *

What would be your reaction if you answered your telephone to hear the operator ask if you would take a person-to-person call from the U.S.? No new experience for me but then my callers are usually from business concerns that don't have to worry about the 3 minute minimum or the clock ticking away at 59 shillings per minute!

But this time it was no business tycoon but a hobbyist eager to seek information about his fish. (Just in case he was using someone else's phone, I will be tactful and he shall remain anonymous.) That U.S. hobbyists take their fish seriously has often been emphasised in this column, but, although normally noted for my flow of words, I was made speechless by this phone call as seeing as he was paying for the call it was probably all for the best.

I answered his query and he seemed satisfied as to what to do about his sick fish but I couldn't help thinking it would have been cheaper to have consulted a Harley Street specialist.

Visitors to PETFISH MONTHLY's Aquarium Show last year from Australia, India, the Far East and America, further proved the enthusiasm that aquarists overseas share. One such visitor from California was Ed McShane, and though time unfortunately permitted but a brief chat with him at the Show, his mailed remarks on returning to the States showed just how enjoyable had been his visit. I thought that fishkeeping held no further surprises for yours truly, but the passage of time only proves me wrong.

Gentlemen, ladies, I doff my cap to you all. We are humbled by your example of just how much this hobby means. May we meet again soon and continue our enlightening conversations . . . about fish, naturally!

* * *

One New York citizen made a paragraph in the New York papers recently. So fed up was this gentleman with what the T.V. stations were churning out that he ripped out the inside of his set and in its place substituted an aquarium. Now he claims he has a picture fit to look at, change of programme every few seconds, colour, and no rushing day-long noise to offend his ears.

An aquarium thus situated is not a new idea, I grant, but surely this is the first time someone destroyed a set in working order to do so? Still, that's one way of getting a colour set at a fraction of the cost.

P.S. Why did he make the papers? The set wasn't his—it was on rental!
DECORATIVE AQUARIUM INSTALLATIONS—3

Tanks in Alcoves and Cabinets

By H. J. GILBERT

ALTHOUGH the cabinet type of aquarium is one of the most popular, care should be exercised in the choice of cladding materials for the exterior. These materials are legion in these days of plastic finishes, but some do pose a few problems, particularly when one is trying to achieve a professional finish to edges or awkward corners with the tools usually available to the handyman.

Provided that a suitable stand is used to take the weight of the aquarium, the frame of the cabinet need be, say, only 2 in. by 1 in. soft wood; with this, covered with a veneered plywood or blackboard, a very elegant piece of furniture may be built. A little ingenuity will provide a cupboard for the necessary equipment and probably open shelf space for books or house plants. Night should not be lost, however, of the unit’s prime function, and nothing should be allowed to interfere with easy access to everything connected with the aquarium.

The top should be completely detachable for easy servicing but a small aperture is all that is necessary for the daily feeding of the fish.

If a sufficiently strong stand is not available, one may be made from the slotted steel angle now on the market. Bolted together, this can make an extremely rigid structure to which any wooden studding and covering can easily be attached. So that the upright supporting angles do not cut into the floor it is essential to attach them to a bottom rail angle that is in contact with the floor all round and so spread the load.

The aim should be to design a set-up that does not look as if it started to be a radiogram or television set and finished up as an aquarium cabinet by accident!

There are some truly magnificent “purpose built” aquarium cabinets coming on the market now—at a price. They are complete units, including not only the tank and all the essential details but also a whole host of gadgets we ordinary motorists rarely use in our aquaria. Before ordering one of these wonder boxes see as many types as possible, read all the manufacturers’ literature and then consider all the previously mentioned points with regard to situation, surroundings and strength of floor. It will be even more expensive if you have to buy new furniture and furnishings to match your aquarium.

The aquarium built into an alcove is one which gives the aquarist great scope for his artistic talent. The easy way out is to get a tank frame which most nearly fits the alcove, arrange suitable supports at the correct height and, having fitted up your aquarium, to build in cupboard beneath it. Above the tank you can have further shelf space inside doors that will serve as access to the top of the tank.

Very often, however, in practice, the alcove is formed in a room by a chimney breast and it may not be desirable or prudent to occupy the whole width with an aquarium or totally to enclose the space above it. In fact it will be found that the idea, previously mentioned in this series of articles, of making a “mock-up”, which can be moved from side to side as well as up and down, will be most necessary to discover the most suitable position.

In my own home this method was successfully adopted to install a 36 in. by 12 in. aquarium in a 5 ft. 6 in. wide alcove. By trial, and error it was discovered that the best position was the right-hand side of the alcove, and the tank bottom a ft. 4 in. from the floor because it is usually viewed from a sitting position. To the left of the tank are stepped shelves, which support house plants.

The main weight of the aquarium is taken by two angle-iron members running right across the alcove and attached to the wall at each end. The rear angle member is also fixed to the rear wall for greater safety. These iron are in fact side iron taken from a discarded bedstead and can usually be bought quite cheaply in a secondhand shop. They are covered with hardboard faced ply before the tank is installed. The space beneath is divided into three, the centre being taken up by three open shelves and flanked by two closed cupboards, the doors of which are veneered hardboard. The right-hand cupboard is fitted with a small control panel for tank lights, heaters and aerator. Shelf space is also provided for all the usual bits and pieces.

It is most convenient to provide a hanger fixed to the wall above the alcove tank that will support both the lighting sockets and the detachable shade. This latter should have half-inch holes drilled in it to allow excess heat to escape along the rear edge, and it will be necessary to fix light baffles on the inner face. If narrow wooden uprights are provided at each end of the tank a detachable frame of hardwood can screen the front face of the tank frame, being held in position by four spring cup board fasteners. It may be found advantageous to line the exposed portion of the recess with a wall paper which contrasts with that on the other walls of the room.

All of the previously mentioned set-ups really provide only for the one or two tank man. Contemporary housing being what it is—no basements, no extra rooms, with even garages being replaced by car ports, what is the real aquarist to do with his breeding, rearing, isolation and stock tanks? Not to mention his worm cultures, foods, nets, siphons and all the usual impediments. A fish house would be the answer but here finance, garden space and even local byelaws come into the picture.

The only practical answer is a wall cabinet. This is
easier and looks better if it is possible to occupy an entire wall. After making sure the floor is strong enough to take the weight, a suitable staging can be erected either from angle iron or some proprietary brand of pressed steel angle. Display tanks are positioned at the correct viewing heights; breeding tanks are placed below them for easy and frequent access; isolation and stock tanks can be put above.

This type of set-up simplifies electrical wiring, aeration and filtration systems and provides ample storage space. Obviously only the display tanks are exposed, the rest being screened by detachable panels suitably finished to match the room furnishings. Any opening panels must be designed to be light-proof as the working tanks, i.e. breeding, etc., still have to be lit. The panels should at the same time be made easily and completely detachable with ball catches or something similar. Hinged doors invariably become a nuisance when servicing.

Depending on the room heating, it should be possible to provide sufficient warmth for the wall cabinet set-up by installing an electrical tubular heater at floor level only. Of course, points for extra heaters in breeding and treatment tanks will be necessary but it is surprising how much heat will be given off by the necessary lights and as one has to seal all joints to prevent leaks of light showing where they are not wanted this has the effect of trapping the heat inside the unit. Indeed this is one of the most economical larger units to run and if careful thought is given to its position it need not inconvenience the rest of the household to any extent.

To be continued.

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Readers’ Queries Answered

![Question Mark]

**Lime-free Gravel**

I should be indebted if you would advise me where I may purchase a lime-free gravel and a rich loam suitable for using in a tropical tank.

A lot of the gravel sold for aquariums comes from Chesil Beach in Dorset and is not lime-free, but it is cheap and readily available from aquatic dealers and can be treated in the following way. Half fill a shallow glass dish with gravel and pour over it hydrochloric acid (purchasable from a chemist’s shop) and leave it until all signs of fizzing and agitation have stopped, indicating that all the lime has been ‘killed’. The acid can be carefully poured off and used over and over again (care must be taken when handling the acid and a pair of rubber gloves should be used). The compost should be washed very well under the cold-water tap and is then safe for use in the aquarium. Acetic acid (vinegar) can be used instead of hydrochloric acid, though it does not act as efficiently.

The need to use loam in aquaria is a very debatable point. Unless it is used very carefully, it can turn the tank into a mud bath as the fishes root about the gravel and allow the loam to escape into a suspension in the water. If used at all, and garden soil uncontaminated by chemical fertilisers is all that is needed, the loam should be placed in small pots in which the particular plant is housed and hidden in the gravel with a good layer of gravel over the surface of the loam in the pot.

**Lighting for Deep Tanks**

Are there any special precautions to be taken in providing overhead lighting for aquaria that are rather deeper than the usual standard sizes, say 18 in. to 24 in. deep?

Since light intensity falls away as distance from the surface below the water increases, it is necessary to use a light of higher intensity over deep tanks than would be used for normal tanks, to ensure good penetration of light and proper plant growth. Our recommendation would be for fluorescent lighting to be used under these circumstances, since the intensity of light from these tubes is greater wattage for wattage than in tungsten lamps, and they are free from the disadvantage of heat generation. Several high-wattage tungsten lamps would cause excessive surface heating, and possibly scorching of plant leaves reaching the top of the water. Although wattage in the fluorescent tubes is linked to length of tube, one can nevertheless arrange for increased light output above the aquarium by having more than one tube, with the units arranged side by side.

**Sucking Loaches**

Can you tell me if there are more than one species of sucking loach?

By sucking loach we take it that you refer to the fish whose algae-eating habits makes it so popular with aquarists, namely Gyrinocheilus aymonieri. This species is almost certainly the one most frequently imported but there are probably at least two more species in this genus that in overall characteristics resemble the common sucking loach closely. However, from time to time in batches of imported sucking loaches these other types turn up in small numbers. It is difficult to refer to the differences between the species unless large specimens are available for comparison, since the colour patterns in the young fishes are unreliable as a means of distinguishing between them and differences in shape of head and body similarly only become really apparent in the adult fish. We should not, of course, refer to this fish as a ‘loach’ at all as it occupies a distinctly different family from the loach family (Cobitidae).
Results from The AQUARIUM
SHOW ’69

BRACKNELL & D. A.S. staged the tableau that was placed first by public ballot. Second was the tableau by Independent A.S. and that of Erith & D. A.S. was third.

Mr. P. A. Grosvenor of Runnymede A.S. entered the best fish in the show, a very fine Schuberti barch, for which he received the Sacco Challenge trophy. The T. Horsemore Rose Bowl for the best furnished aquaria was awarded to Uxbridge A.S. Other special trophies were awarded as follows: T. F. H./Miracle shield for best livebearer, Mr. T. O’Brien of Thurrock A.S.; the Kinetor trophy for best labyrinth fish, Mr. E. C. Ippol (Independent A.S.); the Inter-Pet trophy for best catfish (any variety), Mrs. P. Tee (Brighton & Southern A.S.); the Eheim trophy for best tropical egglayer (class M), Mr. S. Mooney (Tottenham A.S.); the Rasa trophy for best egglaying toothcarp (class F), Mr. H. F. Gough (Basingstoke A.S.); the Pellingey trophy for best swordtail, Mr. T. O’Brien (Thurrock A.S.); the Halvin Cup for best characin, Mr. D. C. Watts (Enfield); the Boughton trophy for the best goldfish (classes D and U), Mr. I. P. Pullard (Freelance A.S.); the Marsh trophy for the best cichlid (class D and Da), Mr. B. Pawley (Kingston & D. A.S.). Details of the results were the following:

Society furnished aquaria: 1, Uxbridge A.S.; 2, Bracknell A.S.; 3, Tottenham A.S. Barbs: 1, Mr. P. A. Grosvenor (Runnymede); 2, Mr. G. Cooper; 3, Mr. A. Blake (Basingstoke). Characin: 1, Mr. D. C. Watts (Enfield); 2, Mr. I. P. Pullard (Freelance); 3, Mr. P. Wilson. A.o. cichlids: 1, Mr. B. Pawley (Kingston); 2, Mr. T. D. Smith (Brent); 3, Mr. T. Summers (Uxbridge). Angelfish: 1 and 2, Mr. R. C. Burton (Freelance); 3, Mr. T. D. Smith (Brent). A.o.s. cichlids: 1, Mr. E. C. Ippol (Independent); 2, Mr. R. Kendrew (Freelance); 3, Mr. T. Summers (Uxbridge). Siamese fighting fish: 1, Mr. A. Blake (Basingstoke); 2, Mr. M. Gass (Riverside); 3, Mr. I. T. Mathiason (Tooting). Egglaying toothcarps: 1, Mr. H. F. Gough (Basingstoke); 2, Mr. T. D. Smith (Brent); 3, Mr. R. Stockwell. A.o.s. catfish: 1, Mrs. P. Tee (Brighton); 2, Mr. T. Summers (Uxbridge); 3, Mr. P. Tee (Brighton). Corydoras and Brachis: 1, Mrs. R. Lippett (Sydenham & Purge); 2, Mr. T. Summers (Uxbridge); 3, Mr. A. Blake (Basingstoke). Rasbora: 1, Mr. T. Summers (Uxbridge); 2, Mrs. P. Tee (Brighton); 3, Mr. T. D. Smith (Brent). Danios and minnows: 1, Mr. A. Blake (Basingstoke); 2, Mr. P. A. Grosvenor (Runnymede); 3, Mr. S. Mooney (Tottenham). Loach: 1, Mr. P. Tee (Brighton); 2, Mr. L. G. Little (Bracknell); 3, Mr. D. W. Loder (Mid-Herts). A.o.s. egglayers: 1, Mr. S. Mooney (Tottenham); 2, Mr. L. Smith (Hamstead); 3, Mr. R. Smith (Tottenham). A.v. male guppy: 1, Mr. L. Smith (Radlett F.G.A.); 2 (joint), Mr. L. Smith; 3, Mr. Gass (Walthamstow). A.v. female guppy: 1, Mr. T. D. Smith (Brent); 2 and 3, Mr. G.

Goodall (Radlett F.G.A.), Swordtail: 1, Mr. T. O’Brien (Thurrock); 2, Mr. W. Corby (East London); 3, Mr. T. D. Smith (Brent); Platy: 1, Mr. R. Smith (Tottenham); 2, Mr. T. Summers (Uxbridge); 3, Mr. L. G. Little (Bracknell). Mollies: 1, Mr. R. Maynard (Hendon); 2, Mr. A. M. Kinsey (Independent); 3, Mr. S. G. Tarrant (Hendon). A.o.s. livebearers: 1, Mr. R. Maynard (Hendon); 2, Mr. K. Appleyard (Thurrock); 3, Mr. A. Blake (Basingstoke).

Common goldfish: 1, Mr. I. P. Pullard (Freelance); 2, Mr. S. Mooney (Tottenham); 3, Mr. R. Dudley (G.S.G.B.); Females: 1 and 2, Mr. R. Dudley (G.S.G.B.); 3, Mr. W. Corby (Walthamstow). Native and foreign coldwater: 1, Mr. R. Dudley (G.S.G.B.); 2, Mr. J. A. Driver (Independent); 3, Mr. B. V. Hunt (Portsmouth).

A full report of the Show will appear in next month’s FFM.
Observations on Water Plants in South America

Plants in Nature Meet Many Adverse Conditions

It was in the upper courses of the southern head-waters of the Amazon that we found an absolute paradise of tropical water and marsh plants. The richness of the plant species in this area, which extends in a broad band from Bolivia through the Mato Grosso and Minas Gerais to the Atlantic coast, is unsurpassed by any other area of vegetation in South America, even by that in the central area of the Amazon itself.

It is only in the western part of this area that the original landscape has been preserved. Man's efforts to cultivate the land had certainly altered the character of the area we were working in—the Mato Grosso on the Guaporé River near the Bolivian border. An enormous amount of forest-clearing had taken place and huge areas of grass steppe-land had been transformed into pasture.

There are also areas of a kind of savannah land with sparse tree and bush growth which give an impression of being quite withered and dried up during the dry season. However, the typical 'river jungle' type of vegetation is found again close to the river courses.

In the winter dry season there is very little water in these rivers and transport by boat, even though it is the main method of transportation in the whole of the Amazon area, becomes very difficult because of the shallows and protruding tree trunks and branches that lie in the water. It is often easier to travel by Jeep and to tow the boat.

An outstanding characteristic of the conditions of plant growth in this area is that, in the course of one year, the same plant will have to maintain its growth entirely submerged, half-submerged and completely emersed.

By Dr. Joachim Schulze

Photographs by the author

Translation by F. Marsh
Specimens of Echinodorus subulatus growing fully out of water in a sunlit position on the bank of the river Sarare. The plants are bearing flowers.

Close-up view of the beautiful flowers of the new species Echinodorus glauces, found fully out of water.

The leaf-whorls of Justicia sedoides resemble those of water chestnut; the plants are growing emersed.
This constant change of conditions is an unusually stressed biological factor for these plants and I think that it may very well account for some of our own failures in the cultivation of plants in the permanently submerged conditions of the aquarium tank.

Along the Guaporé river, for instance, the difference in the level of the water between the dry and rainy seasons amounts to several yards. In the dry season large areas become parched, but since the country is so flat and the river courses are not cut in very deeply, it does not need much of a variation in water depth to flood the area and spread sheets of water over the ground. The ground of the rivers consists partly of quite fine loose sand, which is moved easily by the flow of the water and affords little purchase for the plants to seed. In the dry season, in fact, enormous white sandbanks form, which can be seen clearly by plane over the whole river area and they are mostly quite devoid of plant life. In other places, however, the river bottom consists of a solid structure with a rich nutritive content on which a thick plant covering can develop.

We should have to exceed the scope of these reports which are principally concerned with the *Eichornia* species, if we were to describe all the water plants we found and brought home. Only a few of the most abundant, important and interesting ones can be mentioned here. One of these is the *Jussiaea sedoides*, with its thick rosettes of leaves similar to water chestnut (*Trapa*) but belonging to the *Jussiaea* genus of the family Oenotheraceae, just like the closely related species *Ludwigia*. This plant thrives just as well emerged as in open water as a rooted floating plant and I would suggest that here we have yet another possible future addition to the aquarist's list of floating plants.

If the water hyacinth *Eichornia* were not present almost everywhere in the tropics, growing like a weed,
I should like to count this also as a characteristic plant of this river country. Beyond the reed strips along the river banks there is nearly always a broad band of Elodea on the water in the middle of the river. At times the river is so widely overgrown that only a narrow channel remains for the passage of the boat and then this sometimes has to be backed free. Everyone must have seen these beautiful blossoms in the warm houses of a botanical garden.

In many places, and especially in the calm creeks, the surface of the water is dotted with small violet flowers. These will be free either the new Heteranthera species found here, the Heteranthera sp. monteagrossa, or else from our beloved red Cabomba. There is a strong assumption that this is Cabomba quadricornis, already specified in 1844 by Gardner, and all the more likely because already listed under the Mata Grosso area in the collection. Meanwhile some new Cabomba species have been acknowledged that were not included in the Cabomba-Monographie of Fassett. A revision of the species would be very desirable before too long, and we have a pressing need for botanical scholars who specialise in water and marsh plants.

Another plant that covers large areas of the water surface with its large yellow flowers is Ottelia brasiliensis. Its long ribbon-like foliage, dark green with distinct marbleing, is beautiful in itself and the plant would certainly be a decoration for our aquaria. The Ottelia species belongs to the Hydrocharitaceae and, like the last named, is related to our Vallisneria, Elodea etc. Most of the 40 known species and varieties come largely from Africa and China; in the New World only this single species is known. Many Ottelia aliisides are already imported from South Asia and can also be found growing wild in the rice fields of Northern Italy and Portugal. It would think that the chances of cultivating Ottelia successfully in the aquarium are reasonably good but restricted by the difficulties of transporting the plant successfully because of its tenderness and sensitivity. Echinodorus thrived in the area and we collected up to about 10 different kinds, among them some new and still unspecified varieties.

In the same area we found the new species E. planus Ratz. similarly in a temporarily completely dry and light situation in full sunlight. In spite of the enormous size of the plants (the long narrow leaves and stalk are about 1 yard long) it was difficult to photograph them because they were so overgrown with tall grass and clumps of rushes. Representatives of the species were also found growing completely in the shade, in the little forest streams that drain from the river jungle during the rainy season but lie quite dry during the many months of the winter.

There we found enormous growths of the plants living as land plants. In spite of the unfavourable light conditions the plants bloom here richly. Small gaps in the roof of leaves allow some rays of the sun at least to reach the plants on the ground and it is these moments that one must use to photograph the plants. Otherwise it is so dark in the jungle that one can only work with flashlight. We know that, even in our moderate climate zone with light forest locations, very few plant varieties can exist on a completely shaded forest floor because of the lack of sunlight.

I should mention here that this river area contained an enormously rich variety of fishes, many of which would be most suitable as decorative inmates for our aquaria. We tested this by drawing up a sample with a long draw-net—a net spread out between two people as close as possible to the bottom of the river against the banks and then pulled up quickly to the surface. We recorded no less than about 20 known aquarium fishes, among them several characins (Thorose, Monobrycon, Hypostomus, Megalechis, Anostomus) and catfish and cichlids.

Cichlasoma fasciatus is a slow-moving fish and was caught in great numbers each time we pulled the net up. The fish is used as animal food but it would not have taken a great deal to convince us that firemouths roasted would taste exceedingly delicious!
GUPPY

World

WITH Father Christmas already firmly ensconced in city stores, with the advertising switching from soft drinks and sun tan oil to cough mixture and central heating, we are reminded that winter approaches and to the guppy breeder that means his free Sundays can be used to check equipment and have a quiet cigarette in the fish house freed from the hustle and bustle of summer shows.

The onset of winter also brings that perennial guppy problem, that of hollow belly; the usually rounded tummy, especially in the female, becomes concave and, despite hurried medication, the fish usually succumbs. Though hollow belly can be caused by many things, vitamin deficiency has been nailed to the mast head as the prime mover; lack of calcium and phosphorus, plus the lessening of the sun’s health-giving rays, all contribute to the complaint.

One way to combat this lies in preventive medicine and a simple method is to add one of the proprietary fish oils to the dried food fed to your guppies. Yes, I realise that many manufacturers advertise that they do add vitamins but the addition of a little more has certainly caused my fish no harm. On the contrary, it has banished hollow belly from my tanks.

Experiment by using the half-but oil capsules sold for human consumption. Prick one end of the capsule with a pin and squeeze the oil into a small quantity of dried food. Don’t mix up too much at one time because over a period the oil can send the rest of the food off.

Live, adult brine shrimp (Artemia salina) are an excellent fish food and do not present too many problems to the guppyman once he has successfully hatched them out and realised that to grow them to adult size they need a separate tank.

Though many aquarists make up their own salt mix for both the shrimp hatchery and the growing on aquarists I still claim that well-filtered sea water takes some beating.

If you wish to grow the shrimp even bigger and prolong the life of the batch by at least 4 days try adding enough dried yeast to cover a sixpence to the tank in which you are growing them on. Like a well-known brewer would have us believe—it works wonders!

By PETER UNWIN

Remember that though some slight aeration is required in the hatchery to break the young shrimp free from the egg cases, too heavy a hand with the air flow and you will literally 'spark' the poor creatures to death; it's no help then to try and blame the eggs for being infertile!

In my local aquatic shop I was looking round for some dried shrimp and was surprised to find that two manufacturers, though offering roughly the same quantity in each box, differed in price from 9d to 5 shillings! So read a query from a reader who ended his letter with the usual "Why the difference in price?" He mentioned the names of both brands, both efficient organisations who shall be nameless, but at a guess I should imagine that the cheaper-priced product was made by grinding the complete shrimp, including the shell, whereas the more costly drum of food contained only the meat, hence the greater price.

Though the tiny pieces of shell in the cheaper drum won’t harm large fishes I have had occasions when young guppies have choked to death on bits of shell, so be warned. If your pocket book will run to it, buy the dearer shrimp—nothing is more expensive than a dead fish.

What governs your choice of fish food? Is it, as the display people would have us believe, an eye-catching package? Plenty of good advertising! I doubt if those things influence the choice of many guppy breeders. Maybe I’m just unreasonable but why is it that so many foods come in vacuum packed, double wrapped, guaranteed sterile wrappers (which I am all for), and then spoil it all by either being un-get-at-able or having lids so ‘unfitting’ that the least movement shakes them loose and scatters the contents all over the floor? Tiring to collect some of the flake foods from off the carpet is as easy as shooting Daphnia with a bow and arrow!

It is a good tip to empty new foods into a screw top glass jar; use a felt marker pen to write the purchase date on the outside. Knowing the age of the jar’s contents will help you to decide when your nose and eyes tell you all is not as it should be, though it must be admitted that this date is no criterion as to the actual age of the food. For instance, shops with a quick turnover will sell more foods and correspondingly will circulate their stocks quicker, but one must start somewhere.

Most fish rooms are hot and damp, conditions that soon send fish foods ‘off’. Think back to when you bought your last drum. It might surprise you!

Some quote metric doses for treatments, others use apothecaries measures—how can you work out which is what? An interconversion table lining up all ways of expressing doses for aquaria is included in PFM Aquarist’s Diary 1970 with much more practical everyday information (7s post free from PFM Office).
THE Trade Descriptions Act, approved this year by Parliament, gives greater protection than hitherto to the purchaser against inaccurate or fraudulent advertising. Precisely how this will apply to the aquarium hobby trade remains to be seen, but it is obvious that there are many potential pitfalls. One of the commonest mis-descriptions is that applied to the White Cloud Mountain minnow. Last year a friend descended on me one Saturday afternoon in something of a mental panic and asked for the loan of some of my breeding stock. He explained that, whilst there were plenty of poons about, the genuine article was almost unobtainable from the range of suppliers he had visited, and he looked to me to provide the means of starting a new local generation. Most unfortunately I, too, had given the White Clouds too long a rest and the result was that my fish were long past their best and retiring gracefully. We are still looking for White Clouds, good, bad, or indifferent, but I have seen nothing worth buying for well over a year. There are plenty of good poons about, which are advertised as White Clouds, but as I read it, this is an offence under the new Act. I have mentioned the fact to several dealers and their comicality is somewhat unnerving. One has had the nous to amend the label to read ‘Mountain minnows’, which I suppose is fair enough, but the others have taken no action and blame the inaccuracy on the distributor.

I wandered into a normally reputable establishment a week or so ago and saw some attractive little fish in the rasbora tank which put me in mind of glowlight tetrals. The label announced that they were glowlight rasboras but this I firmly rejected as being correct since they were quite the wrong shape; their glow, however, was undoubt. They kept suggesting to me that they were poor relations of the tetra, not the rasbora. I took home a trio and spent the next fortnight trying to place them. Since they had an adipose fin this took them out of the rasbora group straightforwardly, and I eventually concluded, with others as my guide, that they were Hemigrammus grunati, an inferior version of the glowlight tetra. I duly reported back to the retailer, and the only consolation I got was that he, too, had experienced misleading descriptions at wholesale level, and wasn’t it a darned nuisance?

Glancing around the various stores one is also struck by the confusion which abounds over the Cryptocoryne species, which baffles the old hand as well as the newcomer. There are indeed many openings into which the Act could be turned to advantage, as well as many others wherein troublemakers could make things nightmarish for the retailer. I hope that the good sense which generally influences the trade will induce those who have had misrepresentations pointed out, to take corrective action. Although I am no authority whatever on the law I would suggest that a complainant against a retailer might have a thin time if he rested his case on the misrepresentation of a common name for a fish. There can be no doubt whatever that if you advertise for sale a Tanichthys albonubes the purchaser has the right to receive a White Cloud Mountain minnow, and if Aplocheilus pomfreti is offered, you expect a pooni minnow for your 3 shillings. Much as I like the popular names of fishes it could well be that unless retailers are more accurate with their nomenclature, they are going to have to change their habits. As regards some of the plants, however, I have the utmost sympathy with the retailer who is hauled over the coals by his customers about the correct name for a particular specimen he has for sale. Whilst there is little confusion about the genera, it is the species which cause all the trouble, and most retailers will stick to the former if any misinterpretations are likely to arise. It is quite different if one is buying from a specialist plant firm, as in this case one is paying a big price for quality and accuracy, and the buyer should accept no compromise.

I was looking idly into a shop window the other day and glanced over a card on which a number of thermometers was displayed. Most of them were pointing to 70°F, but several were indicating temperatures higher or lower than this. Since they were for car dashboards it could well be that aquarists can relax, but I have little doubt that inaccuracies of similar order do exist within the types sold for aquaria, though possibly the divergences are much less common. With winter fuel bills in mind it is certainly worth checking the performance of your thermometers. I would never get particularly worked up over the difference of a few degrees, provided that I knew that the difference existed. It could always be recorded on a piece of waterproof tape stuck round the thermometer glass; the presence of the tape would act as a reminder to take special care with that particular instrument. If the calibration is badly out, then there may be a form of leakage and it would be advisable to reject the appliance.

Whilst on the subject of thermometers I note how hard the old system dies and how reluctantly we have adopted the centigrade (celtic) scale. Decimal coinage and the application of decimalization to other forms of measurement are only the equivalent of a stone’s throw away. Are we going to be as obstinate about conversion to these other conventions as we are to that of temperature? I am ashamed that I still use ‘F when I should be using ‘C. It has nothing to do with any form of opposition on my part to decimalization, which I think has a great deal to recommend it. I use ‘F because I think it is more precise than ‘C. The supporters of ‘C will say that it can be
subdivided to make it more precise than °F. In actual practice this is not done, and for this reason I reserve my position. How think readers?

I am glad to see that many retailers are anticipating the Christmas shopping anxieties of parents whose offspring have made it clear to them that nothing short of a tropical aquarium will satisfy them this year. A number of very reasonably priced complete aquarium outfits are being offered, either with or without living contents. In most cases there is a nominal reduction for the whole set-up, and there are offers to install the tank if the purchaser wishes. I think this is an admirable way of starting the hobby, but I would advise that the initiation process should be taken fairly gently. Bearing in mind that, for the child, expectation is greatly more exciting than fulfilment, I would buy one of these outfits complete to the sand and plant stage but leave the acquisition of fishes until after the holiday.

If you can arrange for a suitable uncle or aunt to buy the aspiring aquarist one of those soft-cover beginner’s books, this can be studied during that delightful hiatus in life which comes between Christmas dinner and Christmas tea-time. During this session the money gifts, which will have poured in, we hope, from the other uncles and aunts, can be translated into guppies and angels and, when the initial delights of Christmas have become things of the past, new and lasting ones can take their place. This is written from the child’s point of view. From the parent’s tactical position I should perhaps add that there is an alternative, though whether or not this is cheating I will leave to your good judgement.

Observing that a few dealers do much for the fish in their tanks over the Christmas holidays (and there might even be power cuts resulting in disease later on) it is for consideration that one buys some beautiful fancy guppies after all and secretes them in the club-secretary’s fish house until Christmas Day. After young hopelessly-O-Die—has set up that very first tank, the introduction of those very lovely guppies will certainly cause peace to reign for the remainder of the holiday, and it will remain only for Mum to rub off the novel marks from the tank fronts after the kids have gone back to school. As you can see, this is a matter requiring the most careful consideration.

Whilst on the subject of Christmas I would once again suggest that you take a rest from the hobby for the main part of the holiday and cast your thoughts somewhere else. Why not invite someone from the Old People’s Home for Christmas, especially if there are some children in the family to make things complete? I find that old people are always fascinated by our hobby and get great pleasure from watching and talking about the fish, many of which are quite new to their experience. If, in these circumstances, you do spend a lot of the 25th and 26th gossipping around the tank, you are forgiven, completely! In conclusion, may I wish all PetFish readers, both at home and overseas, a very happy Christmas and 1969.

**BOOK Review**

**AQUARIUM GUIDE** by Jim Kelly. The Pet Library. 375 6d.

**ADVANCED AQUARIUM GUIDE** by Ference N. Ghadially. The Pet Library. 375 6d.

PRESENTED with the task of reviewing these two books, I find it difficult, if not impossible, to deal with them separately, for this would entail a needless repetition of comment. They do, in many respects, cover the same ground; both begin with a history of the aquarium, pass through the various essentials of aquarium-keeping, include a list of fishes and plants and very properly leave the frightening details of diseases till the end.

Beyond this, however, they differ greatly in the approach made by the authors and the examples they have selected. The titles, when placed together as above, suggest that one is elementary and the other advanced, but this is true only of emphasis and I would hesitate to recommend one as against the other to either the beginner or the experienced aquarist.

Both Jim Kelly and Dr Ghadially are well-known contributors to PetFish Monthly, so readers will scarcely need to be told that these books demand a place on the bookshelf of anyone really interested in fish-keeping. As might be expected, Ghadially elaborates on the chemical and physiological matters with which he is so well acquainted, while in some respects, such as the discussion on pumps and filters, Kelly’s work is quite as advanced or even more so. Kelly tends to range widely over the social aspects of the hobby, touching on aquarium societies, the trade and the commercial breeding establishments overseas, while Ghadially limits himself to matters of immediate concern to the aquarist at home. Neither could in any circumstances be described as technical. But both authors contribute, on every aspect, details and comments which are complementary to each other, hence it is difficult, if not impossible, to choose which is best. Similarly, though each gives a list of species of fishes (Kelly about 150, Ghadially about 90), those chosen for description and illustration are mainly different.

In short, the keen aquarist would be well advised to buy both these books and keep them together, treating them as one. Both are very readable, entertaining in style and hugely informative.

These are, I understand, the first of a series of hardbacks put out by The Pet Library Ltd. and they augur well for the future. They are well printed and fully illustrated with photographs in colour and clear figures in black-and-white. Kelly’s book has, in addition, a number of illustrations in true-to-life colour by M. Youn, which catch the essential character of fishes and plants without being photographically exact. The plasticised covers and the small format make these volumes very suitable for use in the fish room where they belong; the size is deceptive, however, for they contain as much or more than may be found in some larger books and are good value for money.

A. F.-B.
Breeding the Glass Fish

_Chanda ranga_

The glass fish is very much prized amongst aquarists, and although it is not a fish that is specifically recommended in the literature for beginners, from my own experience I can affirm that its care calls for no special knowledge. To be at its best, the fish requires a medium-sized tank, that is well planted and well lit and kept at a temperature of 72°F (22°C). Normal tapwater can be used but it should have been allowed to stand for some time before the fish are put into it, and the addition of a little sea salt is beneficial (about a teaspoonful to 10 gallons of water). Glass fish can be kept with other small, peace-loving species. Feeding is perhaps the only problem—the glass fish does require live food.

Older aquarists will know this fish under the synonyms _Chanda lala_, _Ambassis lala_ and _Ambassis ranga_. Although its size is stated to be as great as 3½ inches, I myself have never seen such large glass fish. When it was imported into Europe for the first time in 1905 from northern India, Burma and Thailand it aroused a great deal of interest amongst tropical fish enthusiasts because of its beautiful coloration, particularly in the male fish. When adult, the male is a golden colour and the hind part of his dorsal fin and anal fin are bordered with blueish white. The female is a greenish colour and in silhouette her swimbladder shows a concavity on its lower surface.

The propagation of this fish does present certain difficulties because the young fish require very tiny living food in large quantities. On the other hand, the fish spawn willingly and the number of
eggs can be as much as 200—even more is not unusual. Prerequisites for successful breeding care are a small tank (about 2 gallons) partly filled with old, crystal-clear water at a temperature of 78°F (26°C). The water should be neutral and soft and the tank planted with fine-leaved plants.

The eggs are very small and transparent and after the spawning the parent fish must be removed as they will eat the spawn. Once the young fry are free-swimming, on about the fourth day, they must be fed and they must then be offered large quantities of very tiny live food (Cyclops nauplii have been used with success). These fry are unusual in that they make no effort at all to obtain food but wait until it swims past their jaws. Spawning can be repeated several times a year but is likely to be most successful in the earlier part of the year when the food that must be provided for the fry is more easily available.

When I took the photographs that accompany
When willing to co-operate in spawning the female enters the water plant clump into which the male has attempted to lead her and she is at once followed by her mate.

In this article it was once again proved to me, what I have found to be true with other species, that even though some severe disturbance occurs during the spawning process, this will not stop the fish continuing to spawn as soon as they are settled again. In this case, I noticed one morning that the glass fish were spawning in the community tank. Because I wanted to photograph this I had to catch them, take them out of the community tank and place them in a small spawning tank where I could photograph them more easily. In less than an hour, mating, courtship play and spawning were resumed. This has happened to me before, recently in connection with Baryx tateyi. It seems that, if one has a suitable pair, if the weather and other factors are favourable and the fish are already spawning, then, contrary to what is often thought, prolonged disturbance will not stop the spawning process for very long.

In the plants the male clings close to the female for a brief instant and then puts his tail fin on her body, whereupon the tiny crystal-clear eggs stream through the water from the female. Many of these become attached to the plants.
PRESS Officer Mr John Haynes has written to tell us of the success of his Society's first open show. 'This was the first-ever show held by the TORBAY A.S., and possibly the first of its kind to be held in the South West. As a club, in this aquaristically rather remote district, we realised that we were taking a big risk in staging such an ambitious show and perhaps we all had our fingers crossed. The results... made us realise that we need not have had any fears as it was an overwhelming success. Unlike clubs in many of the big towns, our nearest aquatic neighbours are some 25 miles away... and we had to rely on clubs travelling well over 200 miles in the day to enter their single-entry fish. In fact entries were received from Weymouth, Trowbridge, Tawstock, Bristol, Keynsham, Exeter and Plymouth. Over 250 single fish entries were on display along with two dozen or so furnished aquaria. We would like to express our thanks publicly to our judges, Messrs Ellis, Towill, Ryder and Matler from the F.B.A.S. and also to Mr J. Wheeler who so ably judged the puppy classes. The Torbay A.S. would like to say that this was a first effort from which we have learned a lot... We hope that next year we may be able to entice a few more clubs to support us and visit Torbay—it would make a very nice week-end away for the family.'

Detailed results were: Furnished aquaria: Tropical, Mr R. Jones (76); coldwater, Mrs. M. Harris (Torquay); goldfish, Mrs. R. B. Adams (Torquay); R.G. (Mas?)... Hilliard (Torquay); Barbus (Barb), Miss D. Smith (Torquay); Common fish goldfish, 1st, Mrs. M. Harris (Torquay); 2nd, Mr. R. B. Adams (Torquay); 3rd, Mr. R. N. B. Adams (Torquay); Common fish coldwater, 1st, Mr. R. B. Adams (Torquay); 2nd, Miss D. Smith (Torquay); 3rd, Mr. R. N. B. Adams (Torquay); 4th, Mr. J. Wheeler (Exeter); 5th, Mr. J. North (Torquay); 6th, Mrs. M. Harris (Torquay); 7th, Miss D. Smith (Torquay); 8th, Mr. R. N. B. Adams (Torquay); 9th, Mr. J. Wheeler (Exeter); 10th, Mr. J. North (Torquay).

'S.A.P.S. (SOUTH PARK AQUATIC SOCIETY)' report that their first coldwater open show this year and would like to thank everyone who helped to make the show such a success including speaker Capt. C. L. Betts, chairman of the Goldfish Society of Great Britain. Over 336 entries were received in the 17 classes. Every variety of goldfish with the exception of the angelfish was represented on the benches. Miss Daphne Morris won the best fish in the show award with a twistail. Other results were:

Barbs class: 1st, Mrs. P. Whittington (64 points); 2nd, Mr. J. Linde (62); 3rd, Mr. R. B. Adams (60); 4th, Mr. R. N. B. Adams (58); 5th, Mr. J. Wheeler (56); 6th, Miss D. Smith (50); 7th, Mr. R. N. B. Adams (48); 8th, Mr. J. North (46); 9th, Mr. J. Wheeler (44); 10th, Miss D. Smith (42); 11th, Mr. R. B. Adams (40); 12th, Mr. J. North (36); 13th, Mr. J. Wheeler (32); 14th, Miss D. Smith (30); 15th, Mr. R. N. B. Adams (28); 16th, Mr. J. North (26); 17th, Mr. J. Wheeler (24); 18th, Miss D. Smith (22); 19th, Mr. R. N. B. Adams (20); 20th, Mr. J. North (18); 21st, Mr. J. Wheeler (16); 22nd, Miss D. Smith (14); 23rd, Mr. R. N. B. Adams (12); 24th, Mr. J. North (10); 25th, Mr. J. Wheeler (8); 26th, Miss D. Smith (6); 27th, Mr. R. N. B. Adams (4); 28th, Mr. J. North (2); 29th, Mr. J. Wheeler (0).

A MOST enjoyable and exciting evening to end this year's competitions', writes Mr D. Richardson, public officer of SHEFFIELD A.S., describing the last leg of the 1969 annual inter-society show held between Worksop, A.S. and Sheffield and D.A.S. Sheffield were very successful on this evening, thanks to the great efforts of president Mr. R. Walker and Mr. D. Bradfield, whose winning fishes made an impressive list:

Barbs: 1st and 2nd, Mr. W. Bradfield (Sheffield), ten inches; 3rd, 4th and 5th, Mr. J. B. Seymour (Sheffield), ten inches; 6th, Mr. T. M. Trotter (Sheffield), eight inches; 7th, Mr. J. B. Seymour (Sheffield), nine inches; 8th, 9th and 10th, Mr. H. J. L. Trotter (Sheffield), eight inches; 11th and 12th, Mr. J. B. Seymour (Sheffield), eight inches; 13th and 14th, Mr. J. B. Seymour (Sheffield), eight inches; 15th, Mr. J. B. Seymour (Sheffield), eight inches; 16th, Mr. J. B. Seymour (Sheffield), eight inches; 17th, Mr. J. B. Seymour (Sheffield), eight inches; 18th, Mr. J. B. Seymour (Sheffield), eight inches; 19th, Mr. J. B. Seymour (Sheffield), eight inches; 20th, Mr. J. B. Seymour (Sheffield), eight inches; 21st, Mr. J. B. Seymour (Sheffield), eight inches; 22nd, Mr. J. B. Seymour (Sheffield), eight inches; 23rd, Mr. J. B. Seymour (Sheffield), eight inches; 24th, Mr. J. B. Seymour (Sheffield), eight inches; 25th, Mr. J. B. Seymour (Sheffield), eight inches; 26th, Mr. J. B. Seymour (Sheffield), eight inches; 27th, Mr. J. B. Seymour (Sheffield), eight inches; 28th, Mr. J. B. Seymour (Sheffield), eight inches; 29th, Mr. J. B. Seymour (Sheffield), eight inches; 30th, Mr. J. B. Seymour (Sheffield), eight inches; 31st, Mr. J. B. Seymour (Sheffield), eight inches; 32nd, Mr. J. B. Seymour (Sheffield), eight inches; 33rd, Mr. J. B. Seymour (Sheffield), eight inches; 34th, Mr. J. B. Seymour (Sheffield), eight inches; 35th, Mr. J. B. Seymour (Sheffield), eight inches; 36th, Mr. J. B. Seymour (Sheffield), eight inches; 37th, Mr. J. B. Seymour (Sheffield), eight inches; 38th, Mr. J. B. Seymour (Sheffield), eight inches; 39th, Mr. J. B. Seymour (Sheffield), eight inches; 40th, Mr. J. B. Seymour (Sheffield), eight inches; 41st, Mr. J. B. Seymour (Sheffield), eight inches; 42nd, Mr. J. B. Seymour (Sheffield), eight inches; 43rd, Mr. J. B. Seymour (Sheffield), eight inches; 44th, Mr. J. B. Seymour (Sheffield), eight inches; 45th, Mr. J. B. Seymour (Sheffield), eight inches; 46th, Mr. J. B. Seymour (Sheffield), eight inches; 47th, Mr. J. B. Seymour (Sheffield), eight inches; 48th, Mr. J. B. Seymour (Sheffield), eight inches; 49th, Mr. J. B. Seymour (Sheffield), eight inches; 50th, Mr. J. B. Seymour (Sheffield), eight inches; 51st, Mr. J. B. Seymour (Sheffield), eight inches; 52nd, Mr. J. B. Seymour (Sheffield), eight inches; 53rd, Mr. J. B. Seymour (Sheffield), eight inches; 54th, Mr. J. B. Seymour (Sheffield), eight inches; 55th, Mr. J. B. Seymour (Sheffield), eight inches; 56th, Mr. J. B. Seymour (Sheffield), eight inches; 57th, Mr. J. B. Seymour (Sheffield), eight inches; 58th, Mr. J. B. Seymour (Sheffield), eight inches; 59th, Mr. J. B. Seymour (Sheffield), eight inches; 60th, Mr. J. B. Seymour (Sheffield), eight inches; 61st, Mr. J. B. Seymour (Sheffield), eight inches; 62nd, Mr. J. B. Seymour (Sheffield), eight inches; 63rd, Mr. J. B. Seymour (Sheffield), eight inches; 64th, Mr. J. B. Seymour (Sheffield), eight inches; 65th, Mr. J. B. Seymour (Sheffield), eight inches; 66th, Mr. J. B. Seymour (Sheffield), eight inches; 67th, Mr. J. B. Seymour (Sheffield), eight inches; 68th, Mr. J. B. Seymour (Sheffield), eight inches; 69th, Mr. J. B. Seymour (Sheffield), eight inches; 70th, Mr. J. B. Seymour (Sheffield), eight inches.
A SILVER hatchet, entered by Mr E. Nicol of Thurrock won the Silver Medal (the show award) at HARLOW A.S.'s third open show. The medal was put in more than 300 entries and Mr and Mrs R. Skipper of the House of Fishes presented the awards.

Furnished aquariums: 1. W. Snow (A.B.A.); 2. W. Sonnen (E. Kent); 3. Mr A. J. Day (Harrow); 4. Mr D. Tarrant (Hendon); 5. Mr P. H. Way (Thurrock); 6. Mr J. E. Bray (Harlow); 7. Mr D. L. Tarrant (Thurrock); 8. Mr J. E. Rich (Hendon); 9. Mr R. B. Seabrook (Thurrock); 10. Mr P. R. F. Card (Harrow); 11. Mr P. J. J. F. C. (Harrow); 12. Mr D. J. D. D. (Harrow).

Lavishly planted aquaria: 1. Mr E. R. Kendrick (Frensham); 2. Mr J. A. W. R. L. (Harrow); 3. Mr A. J. Day (Harrow); 4. Mr A. J. Day (Harrow); 5. Mr A. J. Day (Harrow); 6. Mr D. Tarrant (Hendon); 7. Mr P. H. Way (Thurrock); 8. Mr J. E. Bray (Harlow); 9. Mr D. L. Tarrant (Thurrock); 10. Mr J. E. Rich (Hendon); 11. Mr R. B. Seabrook (Thurrock); 12. Mr P. R. F. Card (Harrow); 13. Mr P. J. J. F. C. (Harrow); 14. Mr D. J. D. D. (Harrow)."
Ealing, Councillor Rowland Clay, J.P. Detailed results were:


The guppy section was staged separately by the F.G.A. and Mr. D. Caver of Ealing took second place in this section.

AT THE YELOVI & D.A.S. thirteenth annual dinner, president Mr. D. S. Langdon proposed the toast and congratulated the Society on a most successful year with increased membership and success at open shows and exhibitions. The highlight of the evening was the presentation of 30 trophies and medals to members by the president’s wife, Mrs. D. S. Langdon, including the ‘Champion of the Year’ award that went to show manager Mr. Hubert.

Further details of the club’s successful year were given at the Society’s annual general meeting. The treasurer, Mr. C. H. Busbee, presented a balance sheet showing that the Society was in a strong financial position with an increased membership bringing the numbers up to 65. The Society had many founder members who had a club house and was becoming a reality. Officers elected for the coming year were as follows: chairman, Mr. M. Hulbert; vice-chairman, Mr. V. Nunn; secretary, Mr. R. G. Goulder (9 Ixora Cres, Bisham, Nr Yeovil, Somerset); treasurer, Mr. C. Bushell; show secretary, Mrs. D. P. Page; show secretary, Mr. R. Rendell; committee, Mrs. V. Collins, Mr. M. E. Silcock; Mr. A. Nicholls, Mr. R. B. Stedson; Mr. M. Gaylard and Mrs. W. Gaylard.

ALTHOUGH HUCKNALL & BULWELL A.S. used a larger hall at their second open show than at their first, it was still overcrowded with members and visitors attending. Prizes for the winners from the 210 entries were presented by Radio Nottingham’s Mr. D. McCarthy and the rafts were drawn by the station’s Miss M. Hutchinson. The best fish in the show award went to the A. ramseyi entered by Miss S. Gerrard, for which a tropical fish tank was presented. Detailed results were:


The BRISTOL A.S. particular interest in the coldwater side of the hobby was maintained this year with 215 of the 415 entries being coldwater fishes. Detailed results of the Show were the following:


Mr. L. Emery received additional awards for his exhibits—the Mabel Pascoe Cup for best coldwater fish in the show, the Derwent Cup for highest points in the show, the Eric Butler Cup for best coldwater fish in the show, the R. T. Child Shield for second best fish in the show and the E. R. Ilumans Cup for the best shrimp exhibited by a member. Mr. Emery received congratulations for his great success (achieving a total of 11 trophies) but stated that while he was very appreciative of the awards he would prefer to see them more widely distributed amongst the exhibitors. Additional awards were made to the first-class winners. Mr. J. Howe taking away the Shephard Cup for best shrimp exhibits in the show, the Livie’s Cup for best livebearer, and the Lewis’s Cup for best tropical entries. The Society itself felt that the success of the Show was crowned by the fact that 17 new members joined the ranks as a result of visiting it.
THE SEPTEMBER open show held by the BIRMINGHAM SECTION of the F.G.A. was a huge success. P.R.O. Mr P. W. Jinks tells us that he believes it to have been the largest and best-guppy one-day show ever held in Europe. Visitors arrived from Glasgow, Blackpool and London and 69 exhibitors bunched a total of 765 fis. Visitors and members were entertained by ichthyomontologist Mr Harold Cotton with a most enlightening lecture on diseases of tropical fishes, causes, prevention and cure. The Shield, Mr M. J. Delingpole and Mr Ted Gallagher presented a slide show featuring guppies and killies to the daphnia pond.

Mr Phil Jinks' short dorsal tailmakelated male won the trophy for the best fish in the show. Mr Don Crane's roundtail female took the best female award and the best breeders team went to Mr Fowles and Mr Vinal of the Edmonton Section, London. Detailed results were:

Roundtail male, 6 entries: 1, Mr D. R. Burch (68); 2, Mr P. J. Duffy (67); 3, Mr D. Crane (65). Cofeartil male, 21: 1 and 5, Mr D. Crane (67); 2, Mr M. H. Delingpole (72); 3, Mr D. R. Burch (64); 4, Mr R. G. McPherson (69); 5, Mr F. J. Greenhill (69); 6, Mr A. J. Herston (72). Long dorsal male, 16: 1, Mr D. Crane (72); 2, Mr G. H. Goodall (72); 3, Mr P. W. Jinks (70); 4, Mr L. Weller (75); 5, Mr and Mrs Brook (74); 6, Mr H. Baldwin (75); 7, Mr R. J. H. Duffey (72).

Dorset male, 16: 1, Mr R. G. McPherson (85); 2, Mr M. H. Delingpole (74); 3, Mr and Mrs Brook (75); 4, Mr P. W. Jinks (70); 5, Mr F. J. Greenhill (69); 6, Mr A. J. Herston (72).

Rounding tails male, 21: 1, Mr D. Crane (74); 2, Mr M. H. Delingpole (75); 3, Mr R. G. McPherson (73); 4, Mr P. A. R. Butterworth (73); 5, Mr P. J. Duffy (70).

MEMBERS of the newly formed DARWEN AQUATIC CLUB are most grateful for the help that has been given to them by hobbyists from established societies. At their second meeting, hoping to hear from their chairman that a reply had been received from Lytham A.S. in their request for suggestions for a new society, those present were delighted to welcome the Lytham secretary and show secretary, Mr Townsend and Mr E. Willet who had arrived in person to give the new club the benefit of their experience. This made the new Society feel that they were entering a fraternity that it was well worth joining. At the following meeting Mrs M. Crossland from a local pet stores lectured and gave a demonstration on setting up an aquarium which members found most helpful. Fishkeepers wishing to join should write to Mr Joseph Holden, 33 Radford Street, Darwen.

MERSYLSE A.S. members enjoyed a very active autumn. The Society's participation in the Liverpool Pool Show 1969 was, due to the exertions of both show secretary Mr Bill Smith and many members of the Society, a great success. This year the show occupied a new site and the Society found a constant stream of visitors passed their exhibit and showed immense interest in the club's activities. The section winners at the open show that was held were:

Individual furnished aquarium, Mr Norman Rose; Best Loricaria, Mr S. H. Martin; Best Platy, Mrs D. Broadhurst; Best P. J. Duffy (70). Advanced master breeders, 1 and 3, Mr M. H. Delingpole (72); 2, Mr P. J. Duffy (70). Experimental males, 21: 1, Mr W. M. Holmes (74). Experimental females, 21; 1, Mr M. H. Delingpole (72).

The treasurer of the FEDERATION OF BRITISH AQUATIC SOCIETIES reports that there are now 107 affiliated clubs, 18 of which joined the Federation this year. 17% of the membership is from Wales and the west and of the 32 clubs in this area, 19 have affiliated. Three new 'B class tropical judges have been added to the list. These are Mr B. Ginger, Mr A. Blake and Mr J. C. Randall.

THE GOLDISH SOCIETY OF GREAT BRITAIN held their annual convention at Sutton, Surrey on 11th October. The technical co-ordinator, Mr J. Bundell, gave a talk on his recent breeding experiments and his findings, and the chairman, Major G. H. O'Neill, showed slides of American commercial goldfish breeders, together with a film featuring the premises of various society members in this country. Fish show itself was well attended with 130 fish on the bench. These were judged by Captain Betts, Mr T. F. White, Mr H. B. Payn and Mr Emery. Results were:

Singles: 1 and 2, Miss D. Morris; 3, Mr W. Leach. Metallie twins: 1, Mr S. Tickle; 2, Miss D. Moore; 3, Mr J. L. Indale. Nacreous twins: 1, Mr T. Halton; 2, Mr H. Jago; 3, Miss D. Morris. Globose eyes: 1, Mr B. Herbert; 2, Mr H. Jago; 3, Mr J. L. Indale. Brainbreathers: 1, Mr T. Halton; 2, Miss R. Berger; 3, Me T. Halton. Pearlheads: 1, Mr M. Chace; 2 and 3, Mr K. Spink; Cofeartil: 1, Mr D. R. Burch; 2 and 3, Mr D. Hurst. Natural female, 20; 1, Mr R.而现在
In Brief...

... MR H. COOPER (7 Balmoreal Close, Holcombe Brook, Tottington, Lancs.) is the new secretary of BURY & D. A.S.

... BRACKNELL A.S. now meet on the second and fourth Mondays of the month at The Ascot, Cippenham Road, Bracknell, Herts.

... AT the A.G.M. of SWILLINGTON A.S. the following officers were elected: president, Mr W. Emmett; vice-president, Mr G. Binks; treasurer, Mr R. Stringer; secretary, Mrs P. D. Flint (17 Carr Manor Drive, Leeds 17); social secretary, Mrs N. Stringer; show secretary, Mr Paul Reynolds; committee, Mr D. Sharp and Mr P. Reynolds. Meetings now take place on the first and third Tuesdays of each month at Swillington County Primary School, Church Lane, Swillington (near Leeds).

... NEW secretary for RHONDDA A.S. is Mr R. Richards, 3 Sherwood Street, Llynyfan, Rhondda, Glam.

... WORM King of Wandsworth', Mr Albert Villiers, delighted members of TONBRIDGE & D. A.S. with his tales of how he started as a tubefish dealer and his recent experiences with newspapers and a communication company. The Society now hold table shows within the F.B.A.S. approved list of classes and at this meeting Mr Terry Amos awarded a first to Mr R. Taylor in class C and Ca and to Mrs I. Bellingham in class Z.

... THE FOLLOWING were elected for the year 1969-1970 at the A.G.M. held by WEDNESBURY A.S., Mr E Skidmore; chairman, Mr D. Hightfield; vice-chairman, Mr E. Hyde; secretary, Mr G. Wardle (60 Morris Avenue, Bentley, Walsall, Staffs.); assistant, Mr T. January; show secretary, Mr T. Shipston; assistant, Mrs A. Wood; treasurer, Mr A. Wood; committee, Mr H. Heaven, Mr B. Fellows, Mr A. Mawby, Mr T. Green, Mrs D. Hightfield, Mr A. Dawes. Monthly meetings are held on the first Monday in the month at Kings Hill Tavern, Mill Street, Wednesbury. New and old members are always welcome.

... MR J. ELLIS is the new chairman of ROMFORD & BEACONTREE A.S. Other officers remain unchanged—Mr J. Wilson is treasurer and Mrs K. Heath (536 Mawney Road, Romford, Essex RM7 8QT) the secretary. The Society has changed its day and place of meeting. Meetings are now held on alternate Mondays from 8-10.30 p.m. at the Elm Park Hotel and garage in Elm Park Avenue, Elm Park, Hornchurch.

... MR J. HOWARD was the auctioneer at the BARNESLY T.F.S. bring-and-buy sale and auction, which successfully contributed to club funds. The table show for livebearer pairs was won by Mr R. Abson (2, Mr J. Howard; 3, Mr Abson). Secretary Mrs J. Howard (67 Woolley Colliery, Darton) will be pleased to give details of club meetings to interested fishkeepers.

... ENFIELD & D. A.S. members found the talk by Mr L. Smith of Bethnal Green on how to set up tanks both for the home and for open shows most helpful. Table show winners were: Characins: 1, 2 and 3, Mr J. Whitaker; Cichlids: 1, Mr B. Bird; 2 and 3, Mr Howe.

... ROEHAMPTON A.S. have a new secretary (Mr Alan Morgan, 9 Sandy Lane, Hampton Wick, Kingston-on-Thames, Surrey). The club meets on alternate Wednesdays (12th, 26th November, 10th, 17th December) at the Old People's Club House, Alton Estate, Roehampton.

... CHAIRMAN of the new BRISTOL AERO A.S. is Mr W. P. Gadd, 17 Braydon Avenue, Little Stoke, Bristol.

... BRISTOL T.F.C. members were reminded of the experience that lies within their own ranks when fellow member Mr F. Brown lectured on the various methods he employs in tropical fish breeding. The informative lecture was completed by a lively discussion at question time. To accommodate the growing membership a new venue has been found: this is the Swan Hotel, Stukes Croft, Bristol 1; and new members and visitors are invited to attend at 7.30 p.m. on the third Tuesday of each month.

... GUEST speaker at the September meeting of HARLECH A.S. was P.M. contributor Professor R. McN Alexander, Zoology Department, University of Leeds, who gave a lecture illustrated with slides on the feeding habits of fish. The Society meets every third Tuesday of the month at the Gabalfa Junior School, Colwall Road, Cardiff.

... THE 23 members of NEW FOREST A.S. and visitors who attended the talk on 'Judging' given by Mr D. Harding, the club's show secretary, very much enjoyed taking an active part in the proceedings. They were able to judge a male and female swordtail after the method of judging fish was described to them. The 'amateurs' results were then compared and the differences discussed. Mr J. Jefferson judged the table show and awarded first place in the coldwater plant class to Mr D. Lane (2, Mr R. Travers; 3, Mr D. Harding). Mr L. Mennhennett won all four places in the common goldfish class.

... A TWO-TIERED twenty-first birthday cake decorated with representations of fish and plants was closely guarded 'secrets for success' celebration of SOUTHAMPTON & D. A.S.' coming of age'. The event was marked with a social evening and dance, well supported by aquarists and friends from many southern clubs, when the cake was ceremoniously cut by secretary Mrs M. Gilbert. Among the guests were founder members S. E. Miles and Mr V. Fish, now Society president.

... MEMBERS of THURROCK A.S. enjoyed a very well illustrated talk on 'Genetics' by the society's president, Mr Ron Nicholls. The table show for the evening was for pairs egglayers and was won by Mr F. Harkins from a large entry (2, Mr S. Hendle; 3, Mr G. Eaton). Club members Mr P. O'Bryan, Mr K. Appleyard, Mr D. Durrant and Mr E. Nicoll were congratulated on their successes at the Harlow Open Show, winning five firsts and best fish in the show award.

... EIGHT members of WARWICK A.S. set up furnished aquaria at a local firm's annual Gala Day. This served both as promotion and as a club competition. Winner was Mr D. Healey (2, joint entry, Mr M. Baker and Mr C. Macklin; 3, Mr J. Alcock).

... AT the return leg of the inter-club match between members of YORK & D. A.S. managed to hold off the challenge by 38 points to 83 entries were bench and the best fish in the show plaque was presented to Mr T. Douglas of Hull for a firemouth. The discussion that was held during the meeting proved most interesting as many previous classes were discussed openly much to the benefit of those present.

... MEMBERS of LEAMINGTON & D. A.S. are becoming too expert at an aquatic quiz show. Last slide-picture quiz they held was expected to last for at least an hour when it was compiled—instead it was finished in half the time. The table show at a recent meeting was for furnished jars and members were pleased to find the juniors taking awards in this class.
there was a very good selection of fish for the table show for cichlids at BISHOPS CLEEVE A.S. Winner was the A. ramirezi entered by Mr. N. Binding. The same species won second and third places for Mr. K. R. Burton and Mr. D. Steven. and a Haplochromis bimaculatus won fourth place for Mr. A. Duffern.

MEMBERS OF VAUXHALL MOTORS A.S. greatly enjoyed a recent illustrated talk on killeys by experts Mr. D. W. Ellis and Mr. T. Glass. About 40 people attended. Table show results were: Killies: 1, Mr. C. R. O'Dell; 2, Mr. B. Webb; 3, Mr. J. Bains. Corydoras: 1 and 2, Mr. A. Philip; 3, Mr. T. Martin. Breeder's class, egglayers: 1, Mr. A. Philip; 2, Mr. T. Martin; livebearers: 1, Mr. J. Bains; 2, Mr. R. Deverick. Secretary is Mr. D. M. Fagg, Vauxhall Motors Recreation Club Aquarian Section, Kimpton Road, Luton, Beds.

**Dates for Your Diary**

**22nd November** HENDON CONGRESS, Whitefield Secondary Modern School, Marden Road, Hendon, London, N.W. 4, 6 p.m. Tickets from Mr. R. Parker, 3 Holme Way, Stanmore, Middlesex.

**29th November** THE FUR, FIN & FEATHER SHOW, Shoeburyness Town Hall. Show secretary for aquatic section: Mr. W. N. Needham, 14 Edinburgh Rd, Watford, Herts. Closing date for entries 1st November.

**25th November** AIREBOROUGH & D. A.S. OPEN SHOW, Greencroft Hall (ex Rawdon Dell Hall). Enquiries to Mr. G. C. Walker, 2a West End Terrace, Guiseley, Nr. Leeds, LS15 3HR.


**14th December** HORSFORTH A.S. FIRST OPEN SHOW, Greencroft Hall, Rawdon, nr. Leeds. Schedules from Mrs. B. M. Holm, 29 Wellington Road, Leeds 12.

**1970 Bookings**

**22nd February** ROTHERHAM & D. A.S. OPEN SHOW, Drill Hall, Rotherham. Tickets from Mrs. C. Raybould, 32 Doveston Road, Rotherham.


**2nd May 1970** BURY & D. A.S. OPEN SHOW.

**21st June 1970** SWILLINGTON A.S. OPEN SHOW.

**26th June** ALFRETON & D. A.S. OPEN SHOW, Alleyn Hall. Details from Mr. S. Hill, 38 South Street, Alfreton, Derby.

**5th July** LYTCHAM A.S. OPEN SHOW, Lowther Pavillon, Lowther Gardens, Lytham, Lancs.

**13th July** BARNSELEY T.F.S. OPEN SHOW. Venue to be arranged.

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