

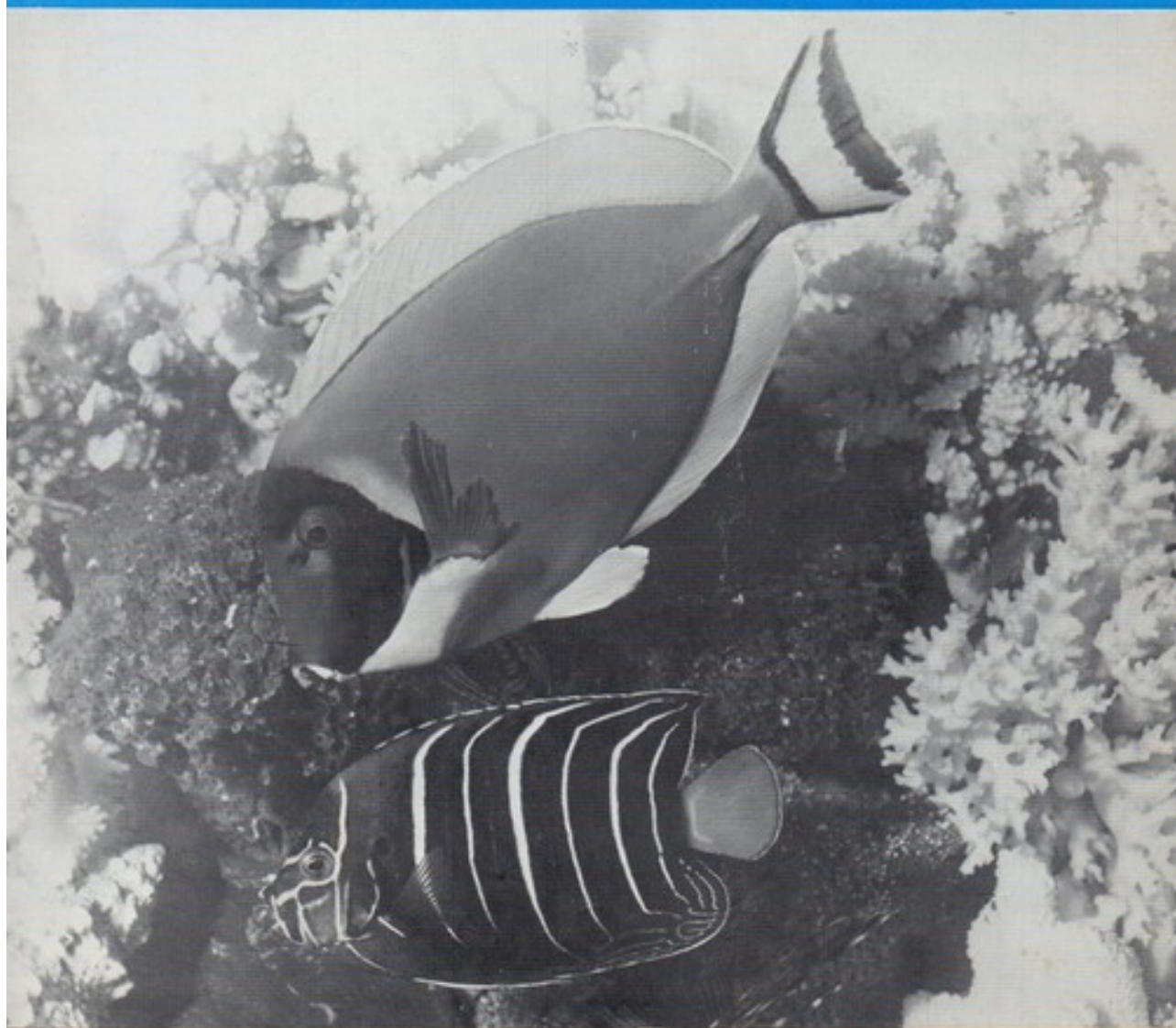
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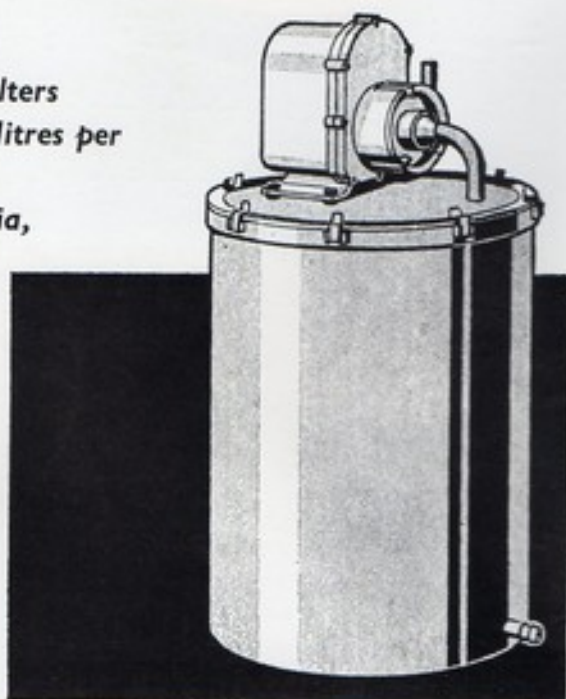
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September, 1968

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Comments and Quotes

- Threat to Lake fish ● Why do fish grow old?
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More Algae Trouble?

BLUE-GREEN algae in a fish tank are a source of great irritation to the fishkeeper and some danger to the fishes if not dealt with adequately and swiftly. Imagine then the problem that arises when a whole lake becomes infested with these forms of algae. With their appearance on the surface of the water, they are blown to the shore, there to decompose to the accompaniment of the smell of rotten eggs. Animals can die from drinking the water and fish suffer severely.

The problem is not just a hypothetical one. With the increasing use of farm fertilisers, with the growth of population and the problems of sewage disposal there comes increasing likelihood of natural waters becoming changed in ways that admirably suit the blue-green algae. Lake Zurich was heavily polluted by 1850. Lake Washington in Seattle succumbed in 1940 and now the latest area to come under suspicion is Lake Windermere in our own Lake District. Dr John G. Stockner—working on a year's fellowship from the U.S. National Institute of Health at the Freshwater Biological Association in the Lake District—suggests that Windermere is beginning to show the same signs of pollution that Lake Washington did 25 years ago.

Rain washes much of the fertilisers used on the farms into the Lake and, together with sewage, these supply the nutrients vital for algal growth. In warm weather, when algae increase, the visibility through the waters of the Lake is already down to under 10 feet. Four species of algae in particular tend to be common in polluted lakes and these are all plentiful now in Windermere. It

is upon the advent of a long hot summer that the greatest increase in the growth of blue-green algae usually occurs to form the troublesome 'bloom'.

Dr Stockner fears that the expansion of the tourist trade in the Lake District makes more pollution inevitable. It seems unlikely that the same cure that saved Lake Washington in Seattle can be applied here. There, the sewage of 1½ million people was diverted—but at a cost of several million dollars!

Brief Livers

DID you know that in all the vertebrate animals some of the killiefishes are among the shortest lived? What decides whether a species lives on average one, two, three or three score and ten years? This is a question that many scientists would like to be able to answer fully, because the explanation would obviously be applicable to the ageing process in man.

Director of the Medical Research Group on Ageing, Dr Alex Comfort is a world-recognised authority in this field of study and he has collected a great deal of information from breeders of animals, horses and dogs for example. He is now hopeful that more facts will come his way from aquarists and especially from those who keep *Aphyosemion*, *Cynolebias* and *Nothobranchius* species.

Dr Comfort will send record sheets to any aquarist who is interested in keeping details of dates of hatching of batches of fish kept through adult life to their dates of death from natural causes. Anyone keeping species other than killies who will record the same kind of details can also be of help and should write to Dr Comfort at University

College London, London W.C.1. This is a project we should all be interested in—after all, the ageing process affects each and every one of us!

Things to Come?

IS the running of heaters, lights and pumps the only way in which electricity can be put to work by the aquarist? Two publications that caught our attention last month showed some other applications that could also come to be developed in the future for lovers of electrical gadgets.

In the German magazine *DATZ* a fishkeeper describes how he has made an electric net that can catch up all the fish in a tank in 10 seconds. The net is of metal mesh and is the positive pole (anode) of a battery-operated circuit in which a metal rod placed in the aquarium is the negative pole (cathode). The device makes use of the observation that in an electric field in the water fish will always swim to the anode. By lowering the special net into the tank and switching on the current the fish are made to swim into the trap.

Use of electricity to kill parasites is the other application, reported in *THE PROGRESSIVE FISH CULTURIST* (U.S.A.). Heavy losses of salmon fry were occurring in the Washington Salmon-Cultural Laboratory, because of attack by flukes that are an intermediate stage in the life cycle of a worm that uses water snails as its main host. Water flowing to the rearing tanks carried the microscopic flukes to the fish from snails inhabiting natural streams. After a number of experiments an electrical grid was devised through which water was made to flow before reaching the young salmon. This killed a sufficiently high proportion of the parasites, more than 90% of them, when used at 310 volts (60 cycles A.C.) per inch with an exposure time of 0.325 second.

The problem with this device was mainly the one resulting from variations in speed of the water flow—high rates of flow carried the parasites past the electrical field before they were exposed to it long enough to be killed. In stationary water 230 volts per inch for 1 second



Star of the new film *For Love of Ivy* is Sidney Poitier, who plays an 'admirer of wealth, women and tropical fish'. A piranha shares the scene in this still from the film. *For Love of Ivy*, a romantic comedy, co-stars Abbey Lincoln, Beau Bridges, Nan Martin, Lauri Peters and Carroll O'Connor. A colour production, the screenplay was based on an original story by the film's star

killed all the parasites, but such voltages cannot be applied in the presence of small fish for these would be killed as well.

Vintage Fish Tanks

THE well-known weekly *EXCHANGE AND MART* recently celebrated the centenary of its publication and issued a facsimile of its first number (price one penny) to mark the occasion. In that issue, dated 13th May 1868, an aquarium had the distinction of being the subject of one of the first advertisements to appear (under 'Country House'): 'AQUARIUM.—2 ft. 7 in. long, 21 in. wide and 15 in. deep, enamelled ends and bottom, plate-glass front, opaque glass back, polished oak cornice. Wanted, a needle rifle. Open to offers.—109'.

How interesting it would be to know the full history of that tank and to know what finally happened to it. There are vintage car clubs—anyone feel able to start a vintage aquarium club? We have a three-footer of unconventional design that is at least 40 years old to put up as a member, or is this one too much of a youngster?

Films on Loan

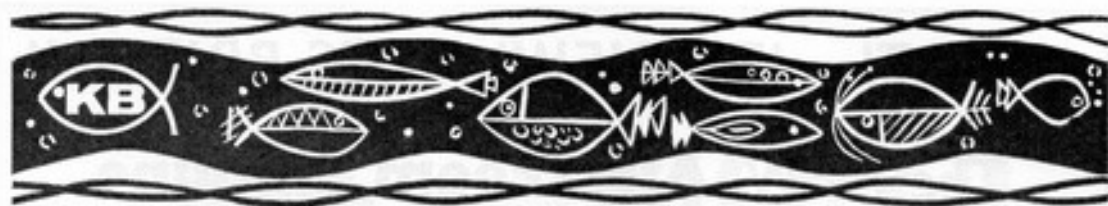
IF you are planning a film evening for members of a society and want to include some of the meatier subjects connected with the hobby you might like to know about these new short films.

They are not directed towards aquarium-keeping but each deals with basic principles of interest to the technically minded aquarist.

Genetics and Plant Breeding (colour, 16 mm.; 17 minutes) presents the facts of the historical discovery by Gregor Mendel on which all genetics is founded. Animated sequences show how colour as a plant characteristic is transferred and the film also portrays how genetic theory has been used to breed pea varieties of special commercial value.

Hard Water (colour, 16 mm.; 15 minutes) gives the story of the calcium and magnesium salts that occur in water supplies and the troubles that the hard water makes for industrial and home users.

Both films can be obtained on free loan by application to Unilever Film Library, Unilever House, Blackfriars, London, E.C.4.



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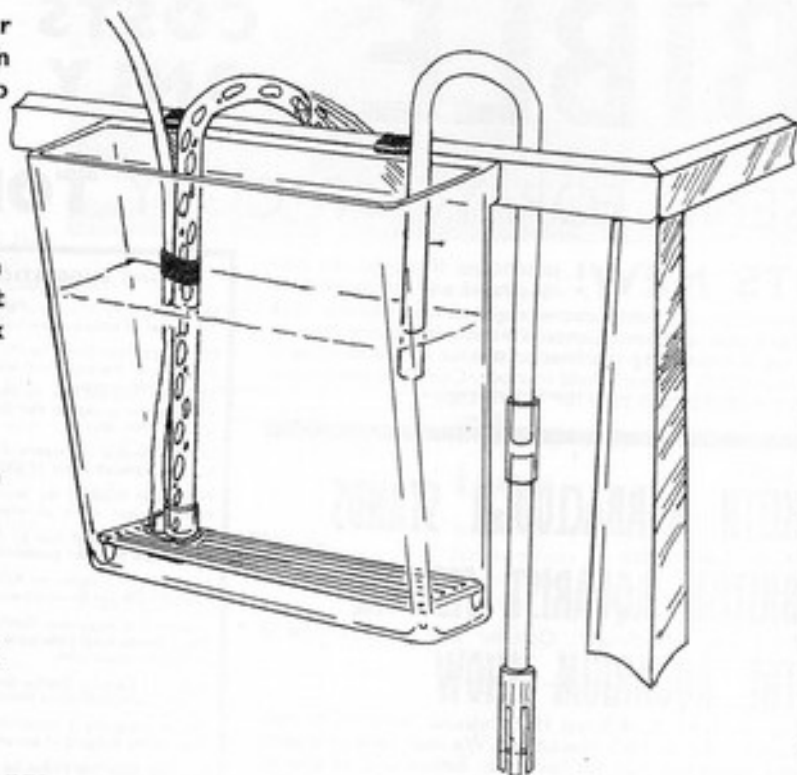
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LETTERS

Cichlid Confusion?

THE article by Dave Lelliott ('Spawning Success With *Pelmatochromis annectens*') appearing in the July, 1968 issue of PETFISH MONTHLY immediately caught my attention as this species has not been seen in the United States for many years. A glance at the accompanying photograph and the text, however, quickly indicated that the subject of Mr Lelliott's article (and the photograph) was not *Pelmatochromis annectens* but rather *Hemichromis fasciatus*. The latter has been seen in this country frequently, but in very limited numbers, over the past 4 or 5 years.

Hemichromis fasciatus is found over a range that extends from Senegal and Gambia, in the West African 'bulge', eastward into the basins of the Tchad, Niger and Congo rivers, and southwards to Portuguese Angola and the two (formerly) Rhodesias. As might be expected with a species with such an extensive distribution, it boasts an impressive list of synonyms including *H. auritus*, *H. leiguardi* and *H. degnezi*. The fish does display a distinct resemblance to *Pelmatochromis arnoldi* (which, in turn, is frequently confused with *P. annectens*) but may be distinguished from that species by its general lack of colour sexual dimorphism, by its more pointed head, by the absence of the pronounced frontal gibbosity so characteristic of the males of *P. arnoldi*, and by the absence of the cluster of metallic white scales above the vent that is especially characteristic of the females of *P. arnoldi*.

ALBERT J. KLEE

Editor, AQUARIUM MAGAZINE,
Member, American Cichlid Association

SECRETLY I had hoped for some form of correspondence, preferably constructive, regarding my article 'Spawning the *Pelmatochromis annectens*'. Consequently I was very pleased to read this letter from Mr Al. Klee.

For some time I have been having interesting conversations over these fish, particularly regarding their identification. The only means of identification I have are the popular books. Most of these conversations are started by some other aquarist denying these fish the name *annectens* without offering an alternative. Others offer the name *Hemichromis fasciatus*. I am not at all sure what it should be but will point out my reasons for deciding on *Pelmatochromis annectens* until something more certain becomes apparent.

1. 'annectens' means 'link'; probably between species, possibly between genera? This fish seems to carry some of each of three different fish's characteristics, i.e. *P. annectens*, *P. arnoldi* and *H. fasciatus*
2. My fish spawned when 4½ in. long and are now 5 in. in size. *H. fasciatus*, quoting Sterba, grows to 30 cm. *P. annectens* reputedly grows to 5 in.

88

3. *H. fasciatus* are supposedly good parents, as were my fish. *P. annectens*, being cichlids, are probably also good parents and rear their young.
4. Colour. My fish do not carry the white scales above the vent as *P. annectens* do. The operculum spot on my fish is brilliant red, as stated (by Sterba) it should be in *P. annectens*. *H. fasciatus* carries a blue-green spot ringed with gold. The pictures of *H. fasciatus* in EXOTIC TROPICAL FISHES show both of the fish, male and female, carrying a large blotch on the dorsal fin; neither of my fish has this mark.
5. My fish are definitely unpleasant by temperament and greedy, eating anything that moves or has a meaty taste. This suggests they are *H. fasciatus* or *P. arnoldi*. *P. annectens* is of a much milder nature.
6. All three species seem to enjoy brackish water and high temperatures and all come from about the same area.
7. Finally I have shown these fish at open shows on several occasions and twice have won awards with them, once a first in class. The judges in each case have never corrected the name or approached me over them on any count, which would suggest they agree with my choice of name!

I have named these fish *P. annectens* because of the facts I have presented in this letter and because the dealer who sold them to me named them *P. annectens*. I will therefore be very pleased to hear from anyone who can ensure their identification positively. I hope in the future to be able to approach the British Museum with some of these fish for positive identification.

DAVE LELLIOTT

Verulam Aquatic Group

Half-Day Circus

DARLING! Darling! Wake up!...wake up!... they've made blooming history...wake up! Obviously my excitement didn't make much impression on my wife at 7.30 a.m. but slowly I managed to drag her into the room where my marine tank is. 'Well—yes—very nice dear, can I go back to bed now'... she hadn't even seen my beautiful clowns fussing around a piece of petrified wood, covered in clown eggs. I could hardly contain the excitement that had been pounding around inside me for the last 30 minutes. It was incredible that I, a complete novice to marine fishkeeping, should have this beautiful thing happen to me, or should I say to my fish?

I immediately searched my magazines for an article I remembered seeing written by someone who had had clowns spawning all over the place... 'Drat, that would be the issue that I lent to Dave, too early to phone him; never mind I'll sort it out at the local pet shop... Photos! I must take a photograph—where did I put that flash gun?; the loft, it must be in the loft. Film! I know I've got the film somewhere... Darling, where did you put that new colour film? Oh!, we used it on holiday—it doesn't seem like a year does it?'... panic rears its ugly head!

Time! 'What's the flaming time? 9.10—it can't be.

I haven't had breakfast! . . . 'Well, dear, if you will sit with your fish all morning!'

It seemed that lunch time would never come but at last I was free for one hour. I sped down to the shops: beef-heart, liver, prawns, codliver oil and other goodies. These are the things that, once minced, I was sure would bring my young clowns on to the size that could eat brine shrimps. I rushed home—my excitement was building up to a crescendo. Out of the car, through the door, up the stairs, and in the room . . . 'Oh no! they have eaten every last one!'

Edgware, Middlesex

DAVID TAFLER
Member, I.M.S.S.

Aquarium 'Sharks'

JUST a note to let Jim Kelly know that all is forgiven, and the second War of the Roses has been aborted. Anyone can make a mistake, as you say (Transatlantic Topics, PFM, August). I am well aware of that—I always seem to make more than anyone else.

I will be only too pleased to let you know of any further successes with the 'sharks'. As soon as I can procure a few reasonable specimens of *Labeo forskali* (stone sharks?) or *L. weeksi* (diamond sharks?) work will once again resume in making yet another shark success. That is to say, if this is possible. After all, the *Labeo* are not what could be called easy fishes to keep, not to mention spawning.

I have the feeling that Jim Kelly's fancy guppies would make my *Labeo* look drab, but not to worry. Every aquarist eventually finds his own field of work!

Leeds 15, Yorks.

LEN MORRILL

We have had news of another successful aquarium 'shark' spawning, in London this time, and hope to be including details of this in a coming issue of PFM.—EDITOR.

AFTER reading Jim Kelly's Transatlantic Topics in your July issue, I think he is getting behind in his reading of fish literature. I bred the red-tailed shark during May, 1966 and quite a few times since. My article on 'Spawning the Red-tailed Shark' was printed in PFM in June, 1967. I have also had articles on the spawning printed in 15 American society magazines, one in Canada, one in South Africa and Australia.

Since Len Morrill (who also resides on this side of the Atlantic) and myself published our experiences on breeding this fish there has been one report from America on a successful spawning by Fred Kerr in an American magazine. As all these articles agree on the conditions required to breed these fish I expect that there will be many more reports on successful spawnings in the near future.

Workop, Notts.

ALBERT DEAKIN

The Earlier the Better

AS a breeder of guppies for a considerable number of years, and not without some reasonable success, I have always subscribed to the idea that the method devised by any particular individual by which he successfully achieves, within reason, the results he wishes to achieve, is the correct method he should pursue—despite the good (or otherwise) advice he gets from all

and sundry. In a letter in reply to Peter Unwin's article (PFM, August) Mr Ian T. Mathieson of Kent writes amazement at the suggestion that guppies should be mated 4-6 weeks after birth and advocates keeping females virgin till they are 9 months old and keeping the males separate for the same length of time.

My experience of keeping females as stated, even for 6 or 7 months, is that many become sterile, and the introduction of a dozen or more adult males will not succeed in making them gravid. This has been confirmed by many experienced guppy breeders and it is not just from my own observations. It is my experience that guppies mated at an early date, even as early as Mr Unwin suggests, is the ideal method. I know you won't get so many in a brood as you would from a virgin adult but numbers are not all-important. Quality what matters and this method has worked successfully for me for a period of 12 years. Furthermore, I have line breeding 99% true-to-type for the past 10 years almost identical in colour, colour pattern and caudal and dorsal shape.

I assure Mr Mathieson that the serious breeders of guppies do so because they like them, and to show the works of their devotion and labour in friendly competition at the various shows held up and down the country. We do not advocate 'as our writer implies' the flooding of the market with runts. They are not produced for monetary gain but to promote and encourage the cultivation and improvement of the guppy and the introduction of new membership to this very worthwhile recreational hobby so many of us enjoy.

PHIL JONES
Birmingham Section
Fancy Guppy Association

Judging Delays

ARE judges taking longer to do their work at shows and if so is this because the fishes benched are of such high standard or are the classes getting too big? I ask this because at four one-day shows I have been to in the south this year, I and lots of other people have been kicking heels, long after the scheduled time for judging to have finished, waiting for a chance to have a look at the exhibits. Organising societies have been ever so apologetic about the delays but I think there ought to be some way of avoiding them happening at all.

London, S.W.6

R. BULLE

South to North

HAVING been able to take part in the Bradford Furnished Aquarium Show I should like to say how very much I enjoyed my visit to the north, never having been to Yorkshire before. The aquarists of the north are not much different from the aquarists of the south except that they talk funny (they said I was a foreigner!); we all keep fish and enjoy the same hobby.

The Show was very well organised and I would like to pass my thanks to Keith Barraclough and his staff and all the members of Bradford A.S. for putting on a very good Show. I am looking forward to meeting some of them again in the near future.

Ashford, Middlesex

P. CAIRN

T'was on a Sunday Morning . . .

Tale of a pond in pictures

by ROGER BRAIDWOOD



It was a peaceful Sunday morning and our garden pond looked beautiful. My Dad was just about to start a little gentle weeding. He thought he would also prop up some of his plants bulldozed by our tortoises Charlotte and Charlie in their meanderings. Suddenly we heard a crack and loud splash. Mr Tug the budgerigar chattered excitedly, Charlotte and Charlie disappeared into their shells with a hiss and Dad decided his peaceful Sunday was over. My little brother had smashed an egg into the pond . . .



The egg did not improve the underwater scene one little bit. Our 17 goldfish shoaled at one end away from the mess. My Dad reached for his hose and balers. The plants were in pots so they were easy to move out. Next the fish had to be netted, which was not so easy . . .

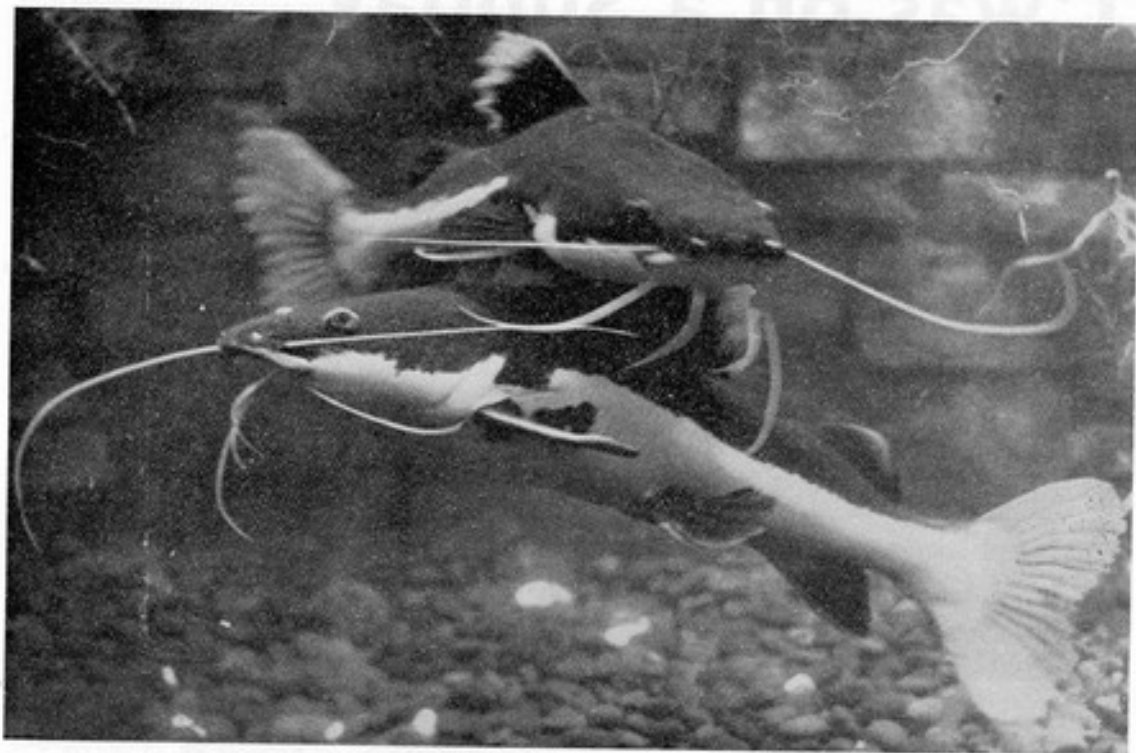


Then Dad started the long job of getting out the water and shingle. Charlotte and Charlie kept getting in the way. Anyone would think they were terrapins the way they hung round the empty pool. Eventually the pond was clean again and everything was put back . . .



Dad's Sunday was spoilt but he was inspired later to alter the design and made a waterfall so that now the pond looks even better than before all the trouble—anyway it seemed to pass Charlotte's and Charlie's inspection.

THE AQUARIUM CATFISHES—5



Cats with the “Catfish Look”

By BRAZ WALKER

Photographs by the author

The red-tailed catfish (*Phractocephalus hemilopterus*) pictured above is from the Amazon region where it is said to grow several feet long

IT seems only natural that South America, the ancestral home of the siluriformes or catfishes, should contain among its almost unbelievably diverse catfish population a family of great proportions containing for the most part members which I am tempted to call 'typical' catfishes. The scaleless, plateless, bewhiskered catfishes of the family Pimelodidae possess with few exceptions all of the traits usually associated with catfishes. Furthermore, they seem to exhibit these characteristics in the correct proportions to make them 'look' like catfishes even to the relatively unpractised eye.

Although there are bizarre members to the family, a prime example of this 'catfish look' is found in the genus *Pimelodella*, probably the most familiar of the pimelodid genera as far as the aquarist is concerned.

Pimelodella melas is the probably correct name for this catfish but identification of the species in this genus is not easy



Pimelodella species are found in every river from Buenos Aires to Guyana and Venezuela and northward into Panama. Most are rather small fishes, with the largest species, *P. cristata*, reaching a maximum length of one foot. Most are much smaller than this and in the aquarium seldom do they exceed 4 inches.

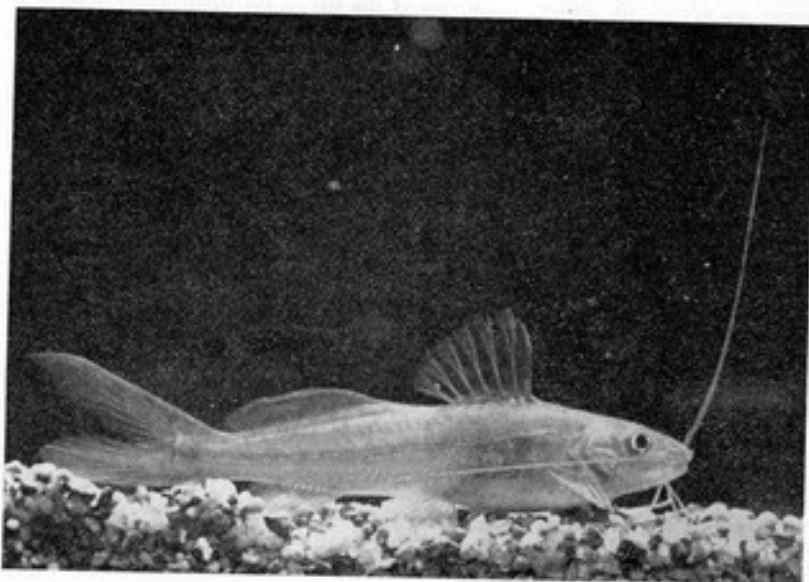
Accurate identification of the *Pimelodella* species is difficult, especially for the aquarist since he naturally prefers identifying live fishes. Because of the great similarity, most specimens are sold as '*Pimelodella gracilis*' although many of them are doubtless some other species.

The true *Pimelodella gracilis* or 'graceful catfish' as it is called possesses at maturity a greatly prolonged upper lobe on the caudal (tail) fin which is much longer and slightly more narrow than the lower lobe. The maxillary (upper) barbels always reach at least to the base of the

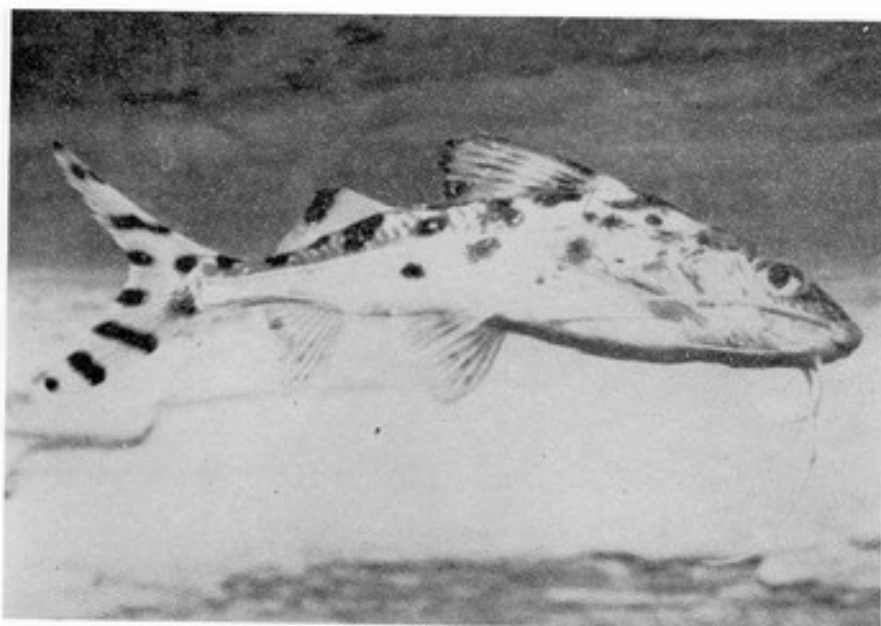
anal fin. There is usually a broad lateral band which is present at times and invisible at others and the back edge of the dorsal spine is equipped with a number of strong teeth.

The difficulty encountered with identifying the various species is compounded by the vast difference in appearance of young and older specimens of the same species in some cases. The only reliable method of identification is apparently a comparison of the tooth structure of pectoral fins, a project which few aquarists are either equipped or willing to undertake.

A very similar genus of pimelodid cats which can easily be mistaken for *Pimelodella* is the genus *Rhamdia*. Since *Rhamdia* species grow to a much larger size, with appetites to match, the careful aquarist can avoid this embarrassment by a simple check of the first ray of the dorsal fin. In *Pimelodella* this is always stiff and pungent;



The graceful catfish (*Pimelodella gracilis*) is the name most commonly given to species available to aquarists. The fish shown is probably of this species but not all catfish so named are really *P. gracilis*



Pimelodus pictus is a silvery fish with a variable pattern of black spots

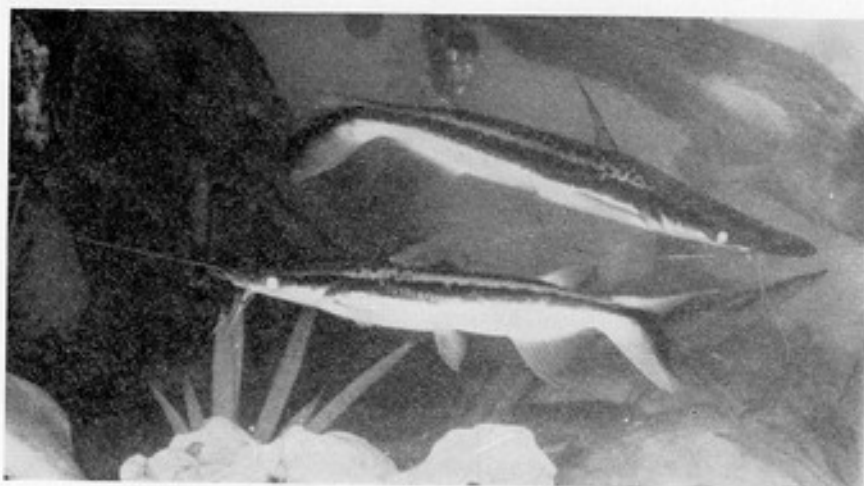
in *Rhamdia* it is flexible and without a spine.

Certainly among the most beautiful of these 'typical' pimelodid catfishes is the red-tailed catfish, *Phractocephalus hemiliopterus*. This striking creature is definitely not a candidate for the guppy tank since in Nature it is reported to reach a length of 1.20 metres or nearly 4 feet. Obviously, few aquarists are equipped to care for a fish of such proportions, and since it is rare even in Nature the price is invariably quite high. It is, however, seen in public aquaria with reasonable frequency. The blood-red tail, carbon-black upper or dorsal surface and the snow-white belly form a pattern of such beauty and contrast that large specimens on display are always popular attractions.

Similar in some ways to *Pimelodella* is the genus *Pimelodus* although the adipose or 'fat fin' of the latter

is always higher than it is long. Also *Pimelodus* almost seems to be 'hump-backed' in appearance in most cases because of the sharply forward-tapering occipital process which drops off from the dorsal rather sharply. *Pimelodus pictus* seems to be the most predominant species and is tremendously variable in appearance. It is basically a silvery fish with very long barbels and a greatly variable pattern of black spots. This fish has recently been sold in America under the name *Pimelodella angelicus*. *Pimelodus* is very active and in spite of not reaching excessively large sizes in most cases it may prove too enthusiastic for certain more reserved species.

In view of the size of the family Pimelodidae it is somewhat surprising that it was once included with several other groups which have now achieved family status under the single family heading Siluridae. For



Two shovel-nosed catfish (*Sorubim lima*). This species is found in the Amazon region to La Plata and Magdalena, Guyana

those working with these fishes in earnest, it soon became apparent that the vastness of numbers and characteristics needed further division. Within the pimelodid family are still a number of strange fishes which in appearance are quite unlike the majority.

Few fishes are so strangely handsome as the 'shovel-nosed' catfishes of this family, such as *Sorubim lima*, or the beautiful and predatory tiger catfish *Pseudoplatystoma fasciatum* which prowls the rivers in his crepuscular search for smaller fishes than himself on which to gorge. The stream-lined, shark-like *Sorubim*, whose underslung mouth is flattened deceptively against the lower portion of his spatulate anterior, is capable of dropping open his

lower jaw like the front end of a landing barge to engulf his prey. In contrast to the striped copper of the tiger catfish's beautiful colour, the shovel-nose (*Sorubim*) has a gleaming white belly, a bold black lateral stripe from the eye through the entire lower lobe of the forked tail and a reddish grey and mottled dorsal surface in an arrangement which catches even the casual eye.

The shovel-nose is a large fish by aquarium standards but will not bother fishes that cannot be swallowed. The tiger is even larger but smaller specimens can be kept in 25 to 50 gallon aquaria with comparable sized fishes.

To be continued



Personal COMMENT by ARPEE

A REVIEW of the livebearers might almost begin and end with the guppy. It yields the utmost delight to a wide section of the hobby and proliferates its kind in like measure; its form has infinite variation and its needs are minimal. All the same, I will leave it to those better qualified than I am to write about it, as it seems that only the specialist has anything really new to say about its story, since this is being added to all the time by the efforts and researches of line breeders.

My only contribution here is a warning I have uttered before: if you start on guppies you will almost certainly finish on guppies, and this may be sooner than you think. If you survive the first six months with them you are probably a guppyot for life. In the process you will have found out how to adjust their numbers to your available accommodation, which is no mean lesson in itself and the hallmark of the seasoned fishkeeper. If you fail to master this little fish you will soon be inserting a 'For Sale' advertisement in the local paper and be close to despair in the meantime as quite how to dispose of all of those surplus fish which even the local school won't accept as a gift.

I was greatly depressed recently, when re-visiting old haunts, to discover one dealer's tanks (there were over 20 of them) completely occupied by second-rate guppies! It was a public example of sloppiness that no self-respecting amateur would have put up with for one moment, and something of a warning to would-be beginners in the vicinity of what might happen to them if they ventured into this hobby; their chances of success would be remote indeed if the professional ended up like this, and where would they be able to dispose of their surpluses if he couldn't?

A much lesser problem confronts the fancier of the platy or the mollie. In neither case are families so large,

nor are they as vulnerable to depreciation. By 'depreciation' I refer to stock quality rather than, primarily, financial aspects, though of course the two do go together. Stock selection with the guppy has to be very strict indeed if good results are to be obtained, but with platys and mollies the percentage of acceptable fry for rearing purposes is much higher, brood by brood, given that a normally favourable breeding environment exists.



The mollie, for some reason, seems to have taken rather a back seat in recent years so far as amateur breeders are concerned, and I think this is because a lot of them have switched loyalties to the guppy, possibly because its tighter breeding cycle is more attractive. You have to get mollies to a bigger size, by comparison with platys and good guppies, if you are to sell them at a worthwhile price, and this only has much appeal to the patient and careful breeder. Fortunately for most of us there is a trickle of good mollies from this source, but nothing like enough, and I think it is a good fish for the beginner if he remembers one or two points essential to its well-being.

Give your stock fish a tank of their own—the largest you can afford. Put in plenty of plants, particularly a layer of *Riccia* on the surface, and add a teaspoonful of sea salt to every gallon of water. A light tank will encourage the growth of algae, which mollies like to graze away from its anchorage. Leave the stock fish undisturbed and let them have their young without the indignity of breeding traps; if they are generously fed (a normal feeding two or three times a day for the first week after birth of the fry), the young should get away to a good start. Quite obviously the next job is to discard any bad fry and gradually to transfer the larger fry to onward rearing tanks as they progress in size. But keep the water characteristics much the same as they were in the parent tank, as both mollies and platys can be put off their stroke by fundamental changes.



The platy is similar in many respects to the mollie when it comes to breeding, though I think it is a rather tougher fish. Every month or so you may expect a batch of fry, though the mollie tends to be less prolific. When you are starting out to breed them you may bring some specimens home from the shop and find them obviously

allergic in some way to your aquarium water, as they will remain motionless in midstream with folded fins and a jaded look. I have found that an increase in the salt content of the water, together with a temperature rise, will often put things right. The symptoms above will sometimes foreshadow an attack of ich., so it is as well to assume that the worst will happen and to add the correct initial dosage of one of the proprietary cures, so that a further setback will not be encountered.

Looking around the shapes and sizes and colours of platys one is struck by the number of variations as well as their beauty and it is not easy to select any single one for attention. It has long been my opinion that the one thing that is sadly lacking at the moment is a really good strain of blood red platys that can hold their shape, size and colour consistently. I have seen only two or three fish worthy of the name in the last couple of years and hope that these comments may encourage greater interest in the development of this type.

The blue platy is also a delightful fish, which ought to make more of the headlines than it does; the increasing use of Gro-Lux lighting, under which both of these fish look particularly good, may well enhance their appeal. At all costs, however, let us oust from our tanks those wretched thin-bodied little orange-red platys that look like apologies for the real thing. Mollies and platys should have bodies as round as a half crown (or as near as you can get to it!); if this could be the aim of the amateur breeder (coupled with a good colour standard), the next few years might see some real improvements.

The breeder of this group of livebearers must have as his aim the production of first-class fish that will stand on their own in almost any surrounding. He must completely jettison the outworn idea that these are simply fill-ins for the community tank; the molly will provide some unusually good jet black and the platy will provide a splash of red. This horrible idea is as outmoded as geraniums, lobelia and alyssum for the front garden. A feature using really first-class specimens of any will almost certainly look superb, even if imagination or skill in tank

lay-out is lacking, but a hotch potch of the mediocre set against a gloriously planted tank will just get nowhere. Don't good plants deserve good companions, anyway?

Concluding this group is the swordtail, on which subject I will be as brief but less complimentary than I was for the guppy. If you must have swords, then set up a tank much as for the varieties above, but treble it in size and never put anything but swords in it. Then just breed them true and enjoy them, but I will never buy any as they are vicious bullies and unappealing to my eye. Perhaps someone will come to their defence, perhaps not, as they seem to be in increasing need of it, judging by their deteriorating reputation and diminishing appearances in dealers' tanks.

I should have liked to add some practical notes on the high-fin platys, but I have so far not kept them. Their wonderful colour, particularly under Gro-Lux, has to be seen to be believed, and I imagine that they sell like hot cakes, but the beginner is warned that breeding is not by any means a good proposition as the strain is not particularly stable. This means not only that fry are likely to be disappointing, but that the stock fish themselves are always rather suspect. It is fairly certain that for some time it is better to leave these glorious creatures to the specialists with acres of facilities, whilst we do what we can with their forebears.

At all events you will find the mollie and the platy the most engaging of fishes. They are seldom still, they rapidly become tame, and they are really the most suitable of tenants for 'one fish' tanks. But give them a varied diet and see how they thrive and how their colours improve; and keep them in generous quarters, too. You will never believe they could grow so big. Size, coupled with the self-colours of these fish may prove to be quite a new experience to many who have given them the go-by because they have only ever seen the poorer stuff. So get going, you breeders, and produce enough half-crown sized platies and mollies for us all. The rewards should be remunerative as well as aesthetically most satisfying.

Readers' Queries Answered



Dosing with Methylene Blue

I bought methylene blue from a chemist at 5% strength as I was told it was good for tropical fish diseases and as a tonic. I've read it up in books from the library but am unable to understand the measurements given for use—my language is 'so many drops to the gallon'. Would you advise me please?

The amount of methylene blue

solution at the strength mentioned does not have to be measured precisely for the aquarium since it is not possible, generally speaking, to give too much. The blue will, however, be harmful to plants in almost any strength that is likely to be used. About 5 drops per gallon would give the correct working strength (when stirred, the tank water should appear definitely blue to the extent of obscuring visibility).

This will cure diseases such as white spot. Methylene blue should not be used as a 'tonic' since its action is to kill fish parasites, not to improve the general condition of the fish or correct tank conditions.

Colisa chuna

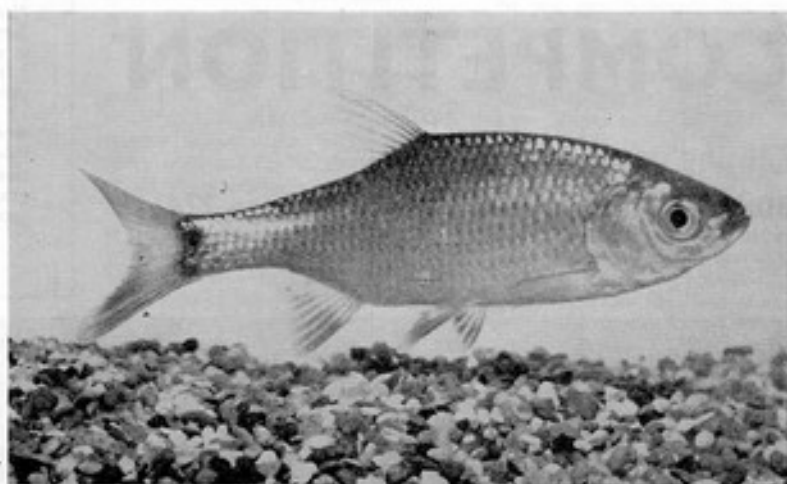
Can you please give me some information about spawning Colisa chuna? There seems to be very little in the literature about this.

Though this fish is not a recent importation it is true that it is not well covered in British fish literature. Breeding can be accomplished by bringing the temperature down from around 85°F (29°C) to 78°F (25°C). A 10 gallon tank is

Continued on page 251

FISHES FOR THE PONDKEEPER TO ENJOY

Rudd, and the Challenge of the Koi



Golden rudd
Photo: W. J. HOWES

IN this the last article of our present series, we have two more brightly coloured species of fishes to consider. The first of these is the golden rudd (*Scardinius erythrophthalmus* var.). Alike to a herring in general outline, with large scales, it is of a dark colour on the top of the back, shading to a bright metallic gold on the sides, with bright red fins and caudal. A shoal of these fish near the water surface enjoying the sun is a splendid sight, and as they turn quickly away on feeling someone approach, the gold on their sides will flash. The rudd is a surface and mid-water dwelling fish: the lower jaw protrudes, indicating that it can and does feed upon insects and the like, taking them from above.

The common or silver rudd is native to this country and has been known to reach 4 lbs in weight. The body depth is increased out of proportion in these larger fish, but the appearance is not unattractive. As a pond fish for the aquarist either variety could be kept, but the golden is naturally more in demand. Given a reasonable amount of room as discussed in earlier articles, and a similar diet, perhaps with the accent on floating foods, they should grow within a couple of years or so to 9 or 10 inches, and reports which have reached me indicate that they will breed quite readily, choosing plants in the shallower parts of the pond on which to lay their eggs.

SSS

By R. M. WHITTINGTON

A well-conditioned golden rudd is a fine subject for showing in the Native and Foreign Coldwater Classes, and I have known it to take awards way over the other entries. Extreme care in handling is necessary, as the scales become detached more readily than in other fishes.

We now turn to what I consider to be the great challenge to the coldwater aquarist at this time. I am referring to Nishiki Koi, the Japanese coloured carp. Little is known about them; originally they were developed in Japan but were only permitted to be kept by wealthy noblemen. They have been available in this country and in the U.S.A. for about 4 years. Prices are high; size of fish and quality of colour has a bearing upon this, but specimens are available around 4 inches long for under a pound.

Koi carp were the subject of an article in *PETFISH MONTHLY* by myself in July, 1967. I then posed certain questions about their origin and antecedents, and I regret that the answers have not yet come my way.

There are a large number of colour patterns available (some illustrated in last month's issue). The names of some of them are: red and white, pure white, pure red, silver scale, tri-colour (red, white and black), white tortoiseshell (black markings), red tortoiseshell, yellow with mottled black, scarlet mottled black, white mottled black, light blue, pure yellow, brown, pure gold, gold with lighter shade on head, silver with head shading, orange/gold, and light blue with red markings. The pure colours are particularly attractive, as are the mirror

scaled types, and a mixture of colours is also impressive.

The fish vary in appearance between fully scaled and partially scaled, as in the mirror carp. Some fish have barbels and some do not, thereby indicating that both *Cyprinus* and *Carassius* carp have been used in the evolution of the coloured fish.

I am sure that any aquarist who has available to him a reasonable body of open water and some large tanks could find the pursuit of Koi and their problems a most fascinating and absorbing pastime.

PFM Photo COMPETITION

Closing date for entries

30th September (entry form on page 274)

This month's picture selected from the entries so far received, and which will all be assessed in the final judging next month (results in the November issue), is of a *Plecostomus*. Its owner, Mr D. A. Seymour, bought it in 1957 for 15s when it was 2 in. long. It is now 9 in. long and has been kept since purchase in a 36 in. by 18 in. by 12 in. tank. Its food is tubifex worms and a daily pellet of cat food. Normal aquarium illumination was used to take the photograph, a hand-held exposure of $\frac{1}{2}$ second at $f2.8$.

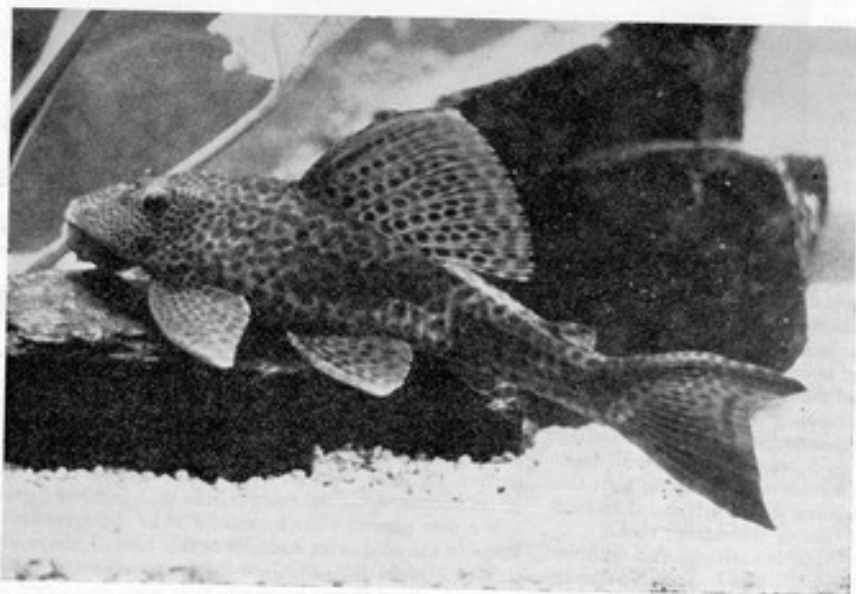


Photo competition
entry by Mr D.A.
Seymour
(London W.14)

There are no special categories of entry for this Competition. Photographs in black and white or colour (prints or transparencies) can show your favourite fish in close-up, the interior of your aquarium, fish breeding or other fish behaviour, or your garden pond. Each entry will be judged according to photographic merit as well as for its interest to fish-keepers. Main cash prizes will be

£5 each, with subsidiary prizes of £2 each, plus a monthly chance of being paid one guinea if a picture is selected for printing in an issue of PFM appearing before final judging and announcement of results. Use the entry form from a current issue of PFM when sending your pictures and please read the Rules and Conditions for the Competition printed in the June issue.

MARINE FORUM



WHEN giving talks on marine fishkeeping to societies a question one can count on receiving is 'What about breeding them—can it be done?'. Well, here I shall once again place my neck on the chopping board, so to speak, and reply 'Yes', but the 'yes' is a tentative one.

Marine fishes are regularly spawned but the young ones not often raised. In fact, during the last 2 months to my knowledge there have been three (and, I might add, two successful) spawnings of marines in and around the London area. Mr Tafler of Edgware spawned a pair of *Amphiprion percula* in a semi-natural ecosystem. Mr J. Clark of Hornsey spawned pipefish (in a bare tank!) and a pair of my own gobies (probably *Gobius minutus*) decided to set up home after just being introduced into my semi-natural aquarium.

The young clowns barely lived a few hours (the usual story one hears unfortunately) but the pipefish are still growing, some 60 youngsters doing well. My own gobies, after refusing almost every food offered, have been reduced in numbers from an estimated 700-900 to a mere handful, but the survivors are now eating brine shrimp (*Artemia*) and growing well.

Can Marines be Aquarium-Bred?

By GERALD JENNINGS

(International Marine Study Society)

For those wishing to try to breed marines, the old adage is easier said than obeyed—first obtain a pair. Once you have done so I would suggest that the next line should read 'then obtain a semi-natural tank', as it seems that the number of spawnings in such units far exceeds those in 'standard' set-ups.

• ALWAYS having thought that one sure sign of an interested readership is that one begins to receive constructive criticisms of one's articles, I am not disillusioned at all about the comments I have received on my notes about ozone in Marine Forum for June; later, when all the material and letters I have been promised in the postbag materialise, I hope to discuss in this column once again and in greater detail both its merits and mis-use.

• NOW to turn to another marine topic baffling to a great many people—that of pH. pH, as you will doubtless know, is the precise way of recording the acidity or alkalinity of a water and the expression used is in fact an abbreviation standing for 1/(logarithm of the hydrogen ion concentration). This term in itself is quite baffling to most amateur aquarists, but here we shall restrict discussion of it to the relevancy of pH in an artificial marine ecosystem.

As we are informed by most marine books, the 'average range' of pH for a marine tank is 8.2-8.5—this, in fact, fluctuates according to temperature and other related conditions. Now, at a 'low' pH the carbon dioxide content of the water is higher and a raised carbon dioxide content of water restricts the amount of oxygen that can be used by the fish. This is one good reason why marine fish are more sensitive to pH changes than many fresh-water species, since the pH level of their home marine waters does not fluctuate to any great extent. We are

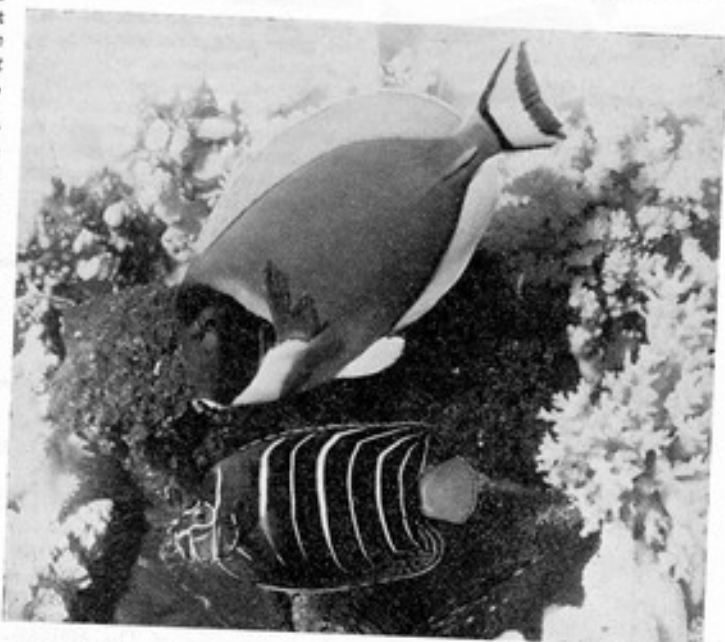


Photo: BARRY PENGILLEY

The tropical marine species of *Pomacanthus* (lower fish) and *Acanthurus* (top) have not yet been reported as breeding in the aquarium. *Acanthurus* enjoy browsing on algae and it could be that 'natural' tanks will prove to be essential for breeding.

reliably informed by many authors that sodium bicarbonate be used to raise marine pH, but a colleague of mine at present studying this does not agree with this solution to the problem, and whilst admitting that in his opinion sodium carbonate (or washing soda) would do a better job than the bicarbonate, suggests the use of the industrial reagent 'lime water'. As most of us will, in fact, remember from our boyhood

chemistry days, lime water reacts with carbon dioxide to form an insoluble precipitate of calcium carbonate; sound reasoning—and in fact it has worked on the several occasions that I have tried it.

• I HAD the opportunity the other day to have a chat with a non-marine aquarist associate who had been busy reading an article on nitrate extraction by the use of algal filters in the recent issues of SALT-

WATER AQUARIUM MAGAZINE. He seemed enthralled by this prospect, saying that, in his opinion, this was quite revolutionary and if it worked would provide food for thought as it would certainly reduce the initial cost of setting up a marine aquarium. After having had a tank set up in a similar fashion for some 10 or 20 months, I was able to assure him that it did work! (See last month's Marine Forum.)

The Aquarium Show 1968



Thursday 7th to Sunday 10th November
LONDON S.W.1.

• THE Aquarium Show will open at 2.30 p.m. on Thursday, 7th November, and at 10 a.m. on succeeding days, until 9.0 p.m. (5.30 p.m. on Sunday).

• ADMISSION to The Aquarium Show will be 3s 6d for adults, 1s 9d for children. Reduced rates will apply for tickets purchased in advance in batches of at least 12: 2s 6d adults, 1s 3d children. Application for these reduced-rate tickets with remittance should be made as soon as possible to The Show Organiser, PetFish Monthly, 554 Garratt Lane, London, S.W.17.

• LONDON'S newest multi-storey car park has been opened close to Vincent Square in time for visitors to The Aquarium Show. It is situated in Rochester Row, which is

two minutes walk from The Royal Horticultural Society's Old Hall.

• ARRANGEMENTS are being made for programmes of talks, demonstrations, and slide shows to take place each evening during the Show and throughout the day on Saturday and Sunday.

• THE Show Organiser is grateful to those who have offered their services as stewards and wishes to invite further offers of help from aquarists available during the week commencing 4th November.

• FURTHER details of The Aquarium Show will appear in next month's issue of PFM with full directions to aid intending visitors coming by road or rail.

• SHOW schedules have been sent out and further copies can be obtained from PFM's office by anyone wishing to make an entry. Please note that entries are not restricted to society members. There are 26 classes including the Society Furnished Aquaria Class (entry to the latter being open only to Societies staging Tableaux).

• SOCIETIES staging Tableaux at The Aquarium Show are Bethnal Green A.S., Brent A.S., Ealing & D. A.S., East London A. & P.A., Erith A.S., Hendon & D. A.S., Hounslow & D. A.S., Isle of Wight A.S., Kingston & D. A.S., Mid-Herts A.S., Portsmouth A.S., Reigate & Redhill A.S., Runnymede A.S., Thurrock A.S., Tottenham & D. A.S., Verulam A. Group.

• ANYONE willing to display a poster or handbill for The Aquarium Show is invited to write to PFM for display material.

Brent A.S. Honour The Aquarium Show

BRENT A.S. announce that they have arranged their first Buffet and Dance and that it is their wish to make it an occasion to commemorate the inauguration of The AQUARIUM SHOW in London. Many distinguished guests have been invited and it is hoped that as many societies as possible will want to

come to this important social occasion. It is being held at the Cavendish Rooms, London N.W.10 on Friday 11th October, 7.30 p.m. for 8 p.m. Tickets cost 30s double and 17s 6d single, obtainable from Mr T. D. Smith, 226 High Road, London, N.W.10. Early application for tickets is recommended.



GUPPY

World

THE thought came whilst watching a television programme in colour—so uninteresting that even the novelty of the spectrum didn't hold my attention and my mind wandered on to a question that has occupied much of my guppy mail recently.

On black and white television a famous painting can be recognised, but can it be enjoyed? The same holds good for to-day's *Poecilia*. Despite the production of many wonderful colour patterns, I still feel that the present-day fish do not interest half as much as the less colourful specimens of yesteryear.

Then, a breeder would spend a long time producing a strain with which, if successful, he usually became associated. His pleasure came from the work involved in breeding and he knew that, even if he was successful, his single strain would still only assure him of one class prize.

Though competition can be the life blood of any society and I would be the last to deny that a group without this would soon fail, I still feel that this can also be the causation of many leaving the hobby. After all, the current popularity of the broadtail ensured that too many were chasing too few. The regularity

By PETER UNWIN

with which the top breeders' names appeared in the winners' lists were as boring to the beginner as a test card.

So pampered have our pets become in their sterile, clinical, diet by numbers environment, they cannot withstand the rigours of a tank going even a 'little off'! Gone are the days when they warranted little more than a milk bottle as a home.

Therefore it came as no surprise to learn that there is now a swing back to the old methods of breeding. Perhaps there is still a hope of to-day's beginner seeing 2- and 3-year-old guppies once again.

(I tried turning up the knob on my T.V. marked 'Brilliance' but it didn't improve the dialogue one iota.)

• • •

If a prize were ever offered for the most popular question asked by the beginner to guppies it would surely be won by the query: 'What is the best food for feeding to my fish?'

If every answer were a pound note then in total they would probably finance the National Debt, yet I do recommend one food and that is ox heart. The trouble with this type of diet is that one ox heart, even a small one, purchased from the butcher is too much for just one hobbyist and in the resultant wastage, the food jumps into the high price bracket. Even if your requirements are large, and you chose to feed with heart exclusively (which I don't recommend), you will still find that the food goes off before you use it all up.

One answer is to arrange a rota with a few friends. Arrange that each member of the 'heart syndicate' takes his turn at purchasing and preparing the heart and then sharing it out between the rest of the team. Club meetings would seem ideal venues for this. Dealing with the situation this way means you only have to buy and cook a heart periodically, and sharing means everyone receives fresh supplies.

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Continued from page 246

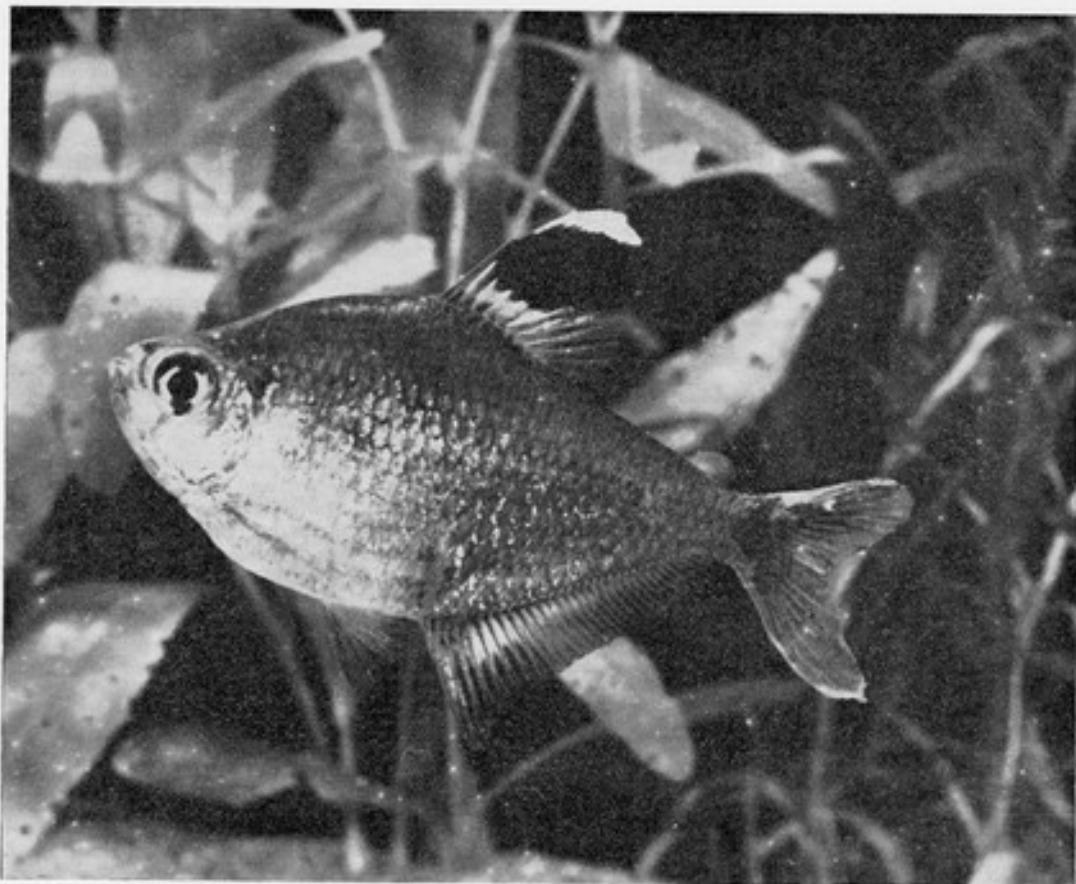
quite suitable and planting is not necessary as the male builds his nest independent of any foliage. The spawning act lasts for about an hour and up to 400 eggs can be released. These hatch within the first day and 72 hours after the spawning the fry are free-swimming. Infusoria can be fed as the first food followed by egg yolk infusion. Near the end of the first week, newly hatched brine shrimp may be given.

The fry display dark bands at the end of a month. Growth is very quick and the fish are mature at the end of 4 months.

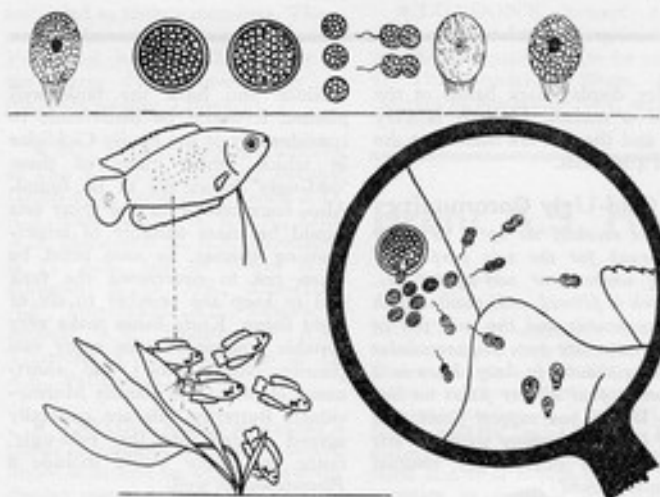
An Odd-Ugly Community

I have recently set up a 36 in. by 15 in. tank for the sole purpose of keeping unusual or odd-ugly fishes. The tank is filtered, well planted with Amazon swords and the only fish in it at present are two Mastacembelus maculatus about 5 in. long. I am in a position to feed all my fishes on live foods. Would you suggest fishes that would live in harmony with the eels and form an interestingly unusual community tank?

Since you have the tank well planted it would be inadvisable to consider any of the family Cichlidae in which group many of these 'odd-ugly' fishes are to be found. Also, companions for the spiny eels would be more suitably of larger-growing species, so care must be taken not to overcrowd the tank and to keep the number to six or eight fishes. Knife fishes make very suitable companions for spiny eels (family Notopteridae) and short-nosed elephant fish (family Mormyridae). Butterfly fish are generally agreed to fall into the 'odd-ugly' range and some would include a *Plecotomus* as well.



This characin is affected by velvet disease. A diagram of the life cycle of the causative parasite is shown below. On the facing page a photograph of a fish with white spot is shown



Life Cycle of Velvet

Grown parasites leave the skin of an affected fish and by a series of divisions each one gives rise to a large number of new young parasites. These have thread-like 'tails' by which they swim in the water and reach a fish. They become attached to the skin and as they feed on its tissue they enlarge to give rise to the tiny spots that are visible to the eye by careful inspection. Plants, gravel and water in an aquarium with this disease present are all likely to be carrying the swimming form of the velvet parasite

Velvet and White Spot Disease

Similarities and differences between these two common fish diseases
with a suggested treatment applicable to both

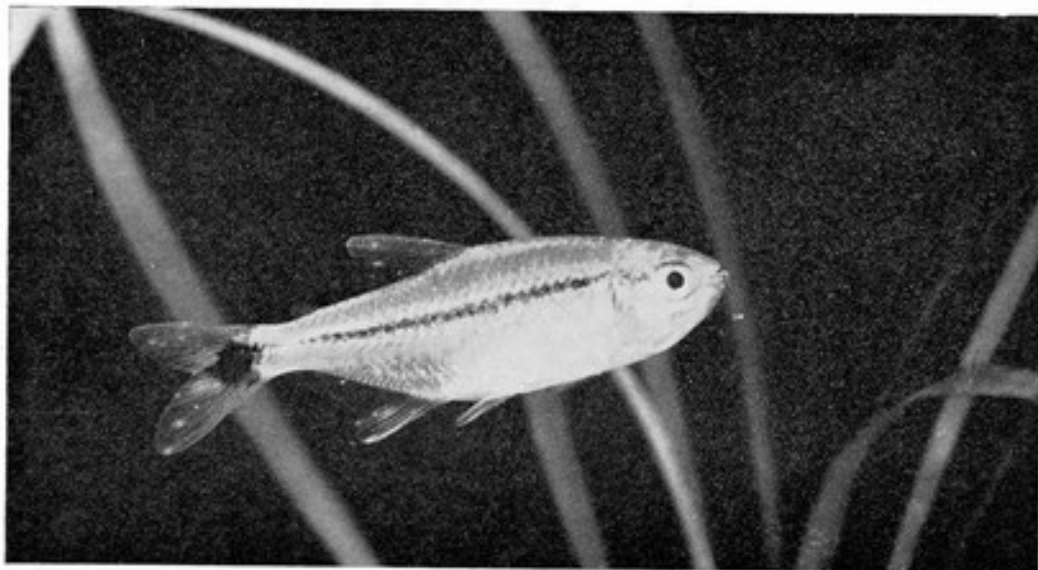
By
Dr ZDENEK LUCKY

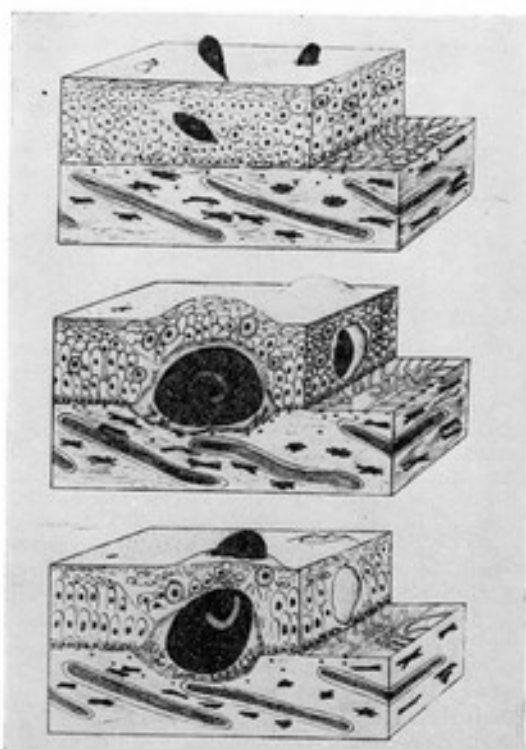
Photographs by
RUDOLF ZUKAL

THE sudden development on the skin and fins of a fish of small white spots, which are sharply separated from their surroundings, is recognised at once by every experienced aquarist as the sign of infestation by parasites. These parasites have settled on or in the skin of the fish and are nourishing themselves on the skin mucus, blood or skin cells.

It is, however, not so universally known that similar signs can be produced by two different parasites. One is a little creature that is properly called a plant flagellate of the genus *Oodinium*. This causes the disease known as 'velvet'. The other belongs to the protozoan parasites and is called *Ichthyophthirius multifiliis*. The life cycle of each type and treatment of the two infestations is very different and therefore it is necessary to know a few details.

In freshwater fishes, *Oodinium pillularis* and *Oodinium limneticum* are the types found as parasites on the skin of fishes in 'velvet disease'. Both types are very similar and have the same life cycle. The grown parasites leave the skin of the fish, on which they have been nourished for a long time, and fall to the base on to stones and plants. At normal



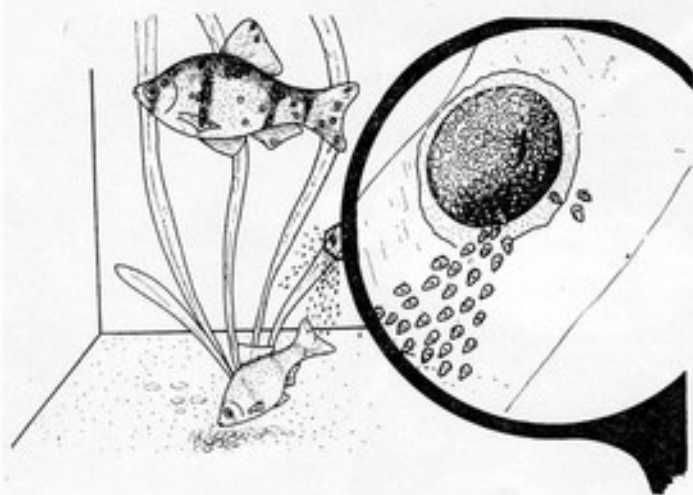


Diagrams of a block of skin tissue from a fish with white spot. Top: the pointed parasites penetrating the skin. Middle: two parasites enlarging within the skin, which is pushed upwards to form the visible 'spot'. Bottom: the fully grown parasite pushes its way up to leave the skin

aquarium temperatures (71-75°F; 22-24°C) and in favourable light conditions the propagation of the parasite takes place within 2-3 days.

Within a few hours after leaving its host, the parasite is ready to multiply and gives rise to the next generation of 32 or 64 individuals, by means of a succession of splits down the middle of each cell; each young parasite has a long tail-like part that enables the tiny organisms to move in the water. When the young parasites reach a host, they settle on the skin and begin to nourish themselves at its expense. They like very much to find for themselves a spot where earlier the mother parasites lived and left behind funnel-shaped cavities.

The parasites grow slowly and in several weeks reach a size of 0.050-0.070 mm.; they can, however, be as big as 0.140 mm. At first they are globular or egg-shaped but later are pear-shaped and are fixed to the skin of the fish by the narrow end. The single-celled parasite is filled with light-refracting regions called vacuoles; as the light is reflected back from these the parasites become visible on the skin of the fish as small grey-white spots. Under the microscope the nucleus of the parasite, which is about 0.012 mm. in size, can be seen. In the initial stages of the disease one cannot without a microscope be quite certain if it is in fact being caused by this parasite or another—'White spot' (*Ichthyophthirius multifiliis*).



Life Cycle of White Spot

After the grown parasite leaves the skin of a fish it settles and forms a cyst on some solid surface in the aquarium. Within the cyst it divides to form more than a thousand new cells. These eventually escape from the cyst (shown magnified on a plant leaf) and swim in the water (too small to be seen at this stage without magnification) and each one is capable of forming a new spot on any fish it reaches. It is while the young parasites are swimming in the water that they can be killed by suitable chemical treatment of the water

The fully formed white spot (*Ichthyophthirius*) parasite also leaves the skin of the fish, swims actively in the water and adheres to some part of the solid bed of the aquarium, often on the glass, and forms a cyst. Within this the parasite divides up gradually, so that by the breaking-out stage 1000-2000 new cells escape from the walls of the cyst and swim with the help of their hair-like projections or cilia in the water to look for a new host. The young parasites reach a length of 0.050 mm.; they are long and pointed at the front end, and with this point they perforate the fish's skin, penetrate and establish themselves in the layer of skin in which the blood capillaries are. The parasites grow very quickly and soon reach a size of up to 1 mm. Each contains a large sausage-shaped nucleus, which because of its colourless liquid content is lighter than the main part of the parasite, which has a great number of tiny light-reflecting vacuoles.

The appearance of the fish skin at the first phase of both velvet and white spot infestations is approximately the same. The white spots appear on the attacked fish, and they are often visible on a dark back or on a transparent fin. Whereas with the velvet (*Oodinium*) the spots are just about possible to see with the naked eye, with the white spot (*Ichthyophthirius*) parasite small nodules appear under the little spots and as these nodules are more than 1 mm. in size they are visible to the naked eye even from a distance.

An important difference between these two parasites is in their virulence. Velvet brings about the death of only a few fish, mostly only young fish that are undernourished, or adult fish that have been without food for a long time, and then exposed to a massive invasion by parasites. The white spot parasite is devastating and can destroy most fish in a very short time. It has been established that many fish are able to achieve immunity and so do not succumb to the parasites.

If we are aware of the important fact that the first of the two parasites, the velvet parasite, settles on the skin of the fish whereas the second, the white spot parasite, penetrates deep into the skin under the epidermis, we come to realise that the curative effect of anti-parasite baths will be different. Many aquarists maintain that for white spot anti-

parasite baths will bring about an immediate cure. We, however, believe that although this is so with velvet parasites, which are present on the skin and are immediately overcome by the anti-parasite remedy and fall from the fish, with the true white spot the bath must operate for a long time to be able to heal the fish. The white spot parasites are deep in the skin of the fish and will not be affected by the bath: they must first leave the fish to be killed by the remedy.

Malachite green has shown itself in the last few years to form a very effective bath against both diseases. Aquarium fishes and plants can well stand a concentration of 0.1 mg. to a litre of water (0.01% : 1½ grains per gallon). The anti-parasite bath can be prepared in a large container, in which the fish will not be overcrowded. First the correct weight of the anti-parasite remedy is dissolved in a small container of water, and then this solution is sprinkled on the surface of the aquarium. With this

method it is not necessary to mix up the water in the aquarium. The bath is effective for about 3 days. In this time velvet parasites start to be destroyed immediately, right from the beginning; the white spot parasites are killed gradually as they leave the fish's skin. While the treatment is being used the water temperature in the aquarium should be raised to about 80°F (25-26°C).

Both of these diseases occur very frequently during the breeding of ornamental fish throughout all Europe and in other parts of the world. Consequently it is advisable for aquarists always to have the anti-parasite bath to hand. Only in this way can fish be saved from these pernicious diseases.

EDITOR'S NOTE: Only malachite green of pharmaceutical quality (from a chemist) should be used and the dose required must be carefully calculated from the exact volume of water being treated.

What's New?

External Filter

PRICE, quite properly, is not always what is looked at or mentioned first when a new product is described but with the new British **Airstream Slimline** aquarium filter the low cost is bound to attract attention. This external filter is designed for tanks up to 12 gallons capacity. The rigid, clear plastic case measures overall approximately 6 in. by 6 in. by 1½ in. Bendable metal strips that slot into the reinforced top back edge of the case permit the filter to be hung on almost any size of aquarium frame. A removable slotted platform stands at the bottom of the case and the

air line attaches to a short tube forming part of this platform and which delivers the air into the wide plastic tube forming the air-lift return pipe. An inlet siphon tube is also supplied. Filter media are packed over the platform in the usual way. Designed and produced by Inter-Pet, the Airstream Slimline is priced 12s. 6d.

Freeze-dried Daff

ALTHOUGH dried water fleas are a well-known form of fish food, their nutritional value compared with that of live fleas is usually considered to be much reduced. This is because the drying process (in the sun) used to prepare them is long and slow. **Live Daff Fresh Frozen** is a product designed to overcome this deficiency, for it is made by freeze-drying the *Daphnia* within an hour of their collection. Freeze-drying removes only the water. The Fresh Frozen Daff float on the water surface when added to the aquarium and are taken by the fish at the top. Aquaculturists (Live Foods) Ltd say that the packs of fleas keep indefinitely. Cost is 1s per pack.

Tottenham's Twenty-first Commemorated by Founder President

AT the meeting of the Tottenham & District A.S. on 8th August, members were agreeably surprised to discover that, almost to the day, the occasion marked the twenty-first anniversary of their Society's foundation. They were reminded of the fact by the appearance as a visitor to the meeting of Mr Charles Wright, who was founder president of the Society. Mr Wright said that, although for many years he has lived away from Tottenham, he has continued to take an interest in the club's affairs. To commemorate the anniversary he presented to the Society a handsome plaque with the Society's sea-horse emblem and the letters T.D.A.S. mounted on it. Mr Wright also gave the Society some mounted photographs of their first officers for 'the archives'.

Tottenham's chairman, Mr F. Williams, accepted the plaque and gave thanks on behalf of the Society, saying that the plaque would have pride of place at meetings. Although Mr Wright had kept his intention of making the presentation a secret and had not announced that the purpose of his visit was to bring the anniversary to the Society's notice,



Chairman Mr F. Williams (left) gave thanks on behalf of the Society to Mr Charles Wright (right) for the plaque he had presented to mark the occasion of Tottenham & D. A.S. twenty-first anniversary

it emerged that Mr Wright was far from being forgotten in the Tottenham area. One member present recalled that, although it was at the time when he still wore 'short trousers', he well remembered re-

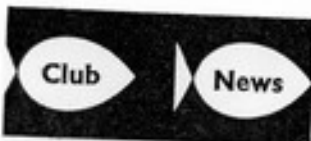
ceiving advice on fishkeeping from Mr Wright.

PETFISH MONTHLY would like to add its congratulations to the Society on reaching its 'majority' and wishes it many more birthdays to come.



Flash-back to 1947. Tottenham's original officers, including president Mr Wright (centre, back). A close-up of the presentation plaque is shown in the photograph on the right





BECAUSE of business and other commitments, several positions in the GLOSSOP A.S. committee have become vacant recently, and these have now been filled as follows: chairman, Mr J. Ingram; treasurer, Mr C. D. Macdonald; publicity, Mr D. R. Chambers; secretary, Mrs M. Ingram, 117 Station Road, Hadfield, via Hyde, Cheshire (phone Glossop 2214).

The Society's second annual open show was very successful; the following details of the results have now been received.

Best fish in show, the arrowana entered by Mr and Mrs Grimshaw of Sunnybrow A.S. (84 points).

Livebearers. Guppies: 1, Mr B. Hilton (Stretford); 2, Mrs Cross (Blackpool); 3, Mr J. Shepherd (Salford). Swordtails: 1, H. Derris (Workop); 2, Mr and Mrs Grimshaw (Sunnybrow); 3, Mr W. Gray (Sunnybrow). Mollies: 1, Mr H. Derris (Workop); 2, Mr B. Thompson (Glossop); 3, Mr F. Bishon (Valley). Platy: 1, W. Bernie (Stockport); 2, Mr F. Bishon (Valley); 3, Mr R. Preston (Belle Vue).

Labyrinth. Small: 1, Mr H. Derris (Workop); 2, Mr E. Kaye (Huddersfield); 3, Mr D. South (Glossop). A.O.V.: 1, Mr H. Derris (Workop); 2, Mr B. Jones (Workop); 3, Mr K. Parkes (Merseyside). Fighters: 1, Mr H. Derris (Workop); 2, Mr F. Mulla (Merseyside); 3, Mr L. Stevens (Valley). Pairs: 1, Mr H. Derris (Workop); 2, Mr A. Hudson (Huddersfield); 3, P & H (Gorton).

Barbs. Small: 1, Mr H. Derris (Workop); 2, Mrs Betty (Swillington); 3, Mr F. Buxton (Barnsley). Medium: 1, Mr A. Grimshaw (Belle Vue); 2, M.D.M. (Glossop); 3, Mr M. Stray (Halifax). Large: 1 and 2, Mr K. Parkes (Merseyside); 2, Mr and Mrs Grimshaw (Sunnybrow); 3, Mr G. Hammett (Huddersfield); 2, Mr J. McCabe (Gorton); 3, P & H (Gorton).

Cichlids. Dwarf: 1, Mr M. Torpe (Oldham); 2, Mr H. Derris (Workop); 3, Mr J. Shepherd (Salford). Medium: 1, Mr A. Hershaw (Belle Vue); 2, M.D.M. (Glossop); 3, Mr M. Stray (Halifax). Large: 1, Mr R. Moorcroft (Merseyside); 2, Mr K. Scoborn (Halifax); 3, Mr K. Parkes (Merseyside). Angels: 1, Mr N. Kirby & Son (Merseyside); 2, Mr G. Edwards (Salford); 3, Mr R. H. Savage (Mid-Herts). Pairs: 1, Mr J. Shepherd (Salford); 2, Mr J. Williams (Oldham); 3, Mr H. Naylor (Halifax).

Characins. Small: 1, Mr F. Bishon (Valley); 2, Mr J. Jackson (Stretford); 3, Mr A. G. Esteves (Top Ten). Medium: 1, Mr S. Harrow (Oxam); 2, Mr and Mrs J. Stauden (Loyne); 3, Mr N. Kirby & Son (Merseyside). Large: 1, Mr H. Derris (Workop); 2, Mr R. Moorcroft (Merseyside); 3, Mr W. Page (Valley). Pairs: 1, Mr W. Parkin (Huddersfield); 2, Mr N. Kirby & Son (Merseyside); 3, Mr J. Whiteley (Aireborough).

Killifish. Single: 1, Mr J. Roberts (Nelson); 2, Mr K. Townsend (Lytham); 3, Mr G. Richardson (B.K.A.). Pairs: 1, Mr G. Richardson (B.K.A.); 2, Mr A. Middleton (Gorton); 3, Mr K. Hill (Heywood).

Catfish and loach. Cownose: 1, Mr A. G. Esteves (Top Ten); 2, Mr F. Rodman (Sunnybrow); 3, Mr N. Kirby & Son (Merseyside). A.O.V. catfish: 1, Mr B. Phillips (Ashton); 2, Mr H. Derris (Workop); 3, Mr F. Bishon (Valley). Loaches:

1, Mr W. Parkin (Huddersfield); 2, Mr and Mrs Webb (Salford); 3, Mr K. Groomough (Glossop). Pairs: 1, Mr F. Mulla (Merseyside); 2, Mr R. Davies (Belle Vue); 3, Mr M. Stray (Halifax).

Carp and minnows. Sharks, labors and flying fishes: 1, Mr R. Hughes (Gorton); 2, Mr M. Stray (Halifax); 3, Mr F. Mulla (Merseyside). Danios, rubras and minnows: 1, P & H (Gorton); 2, J. & D. Boardman (Leigh); 3, Mr F. Bishon (Valley). Pairs: 1, J. & D. Boardman (Leigh); 2, Mr A. Newall (Glossop); 3, Mr E. Kirkland (Sunnybrow).

Coldwater. Fancy goldfish: 1 and 2, Mr A. Phillipson (East Lancs); 3, Mr B. Rothwell (N.G.P.S.). A.O.V. coldwater: 1 and 2, Mr R. Wagstaff (N.G.P.S.); 3, Mr W. H. Ramsden (N.G.P.S.). Native: 1, Mr W. H. Ramsden (N.G.P.S.); 2, Mrs Baxter (N.G.P.S.). Pairs: 1, Mrs Baxter (N.G.P.S.); 2, Mr R. Rothwell (N.G.P.S.); 3, Mr W. H. Ramsden (N.G.P.S.).

Marines: 1, M.D.M. (Glossop); 2, Mr P. Reeder (Glossop). A.O.V. tropical: 1, Mr and Mrs Grimshaw (Sunnybrow); 2, Mr J. Watson (Sunnybrow); 3, Mr G. Hammett (Huddersfield). Mura-jars: 1, 2 and 3, Mr D. Shields (Halifax). Breeders teams, livebearers: 1, M.D.M. (Glossop); 2, Mr J. Shepherd (Salford); 3, Mr A. Hudson (Huddersfield); Breeders teams, egglayers: 1, Mr H. Derris (Workop); 2 and 3, Mr F. Buxton (Barnsley).

A DEARTH of good quality twintails is causing concern to the GOLDFISH SOCIETY OF GREAT BRITAIN.

Mr W. L. Wilson, secretary of the Society, is suggesting that any member who has spawned all the eggs he requires might take a spawning and make the alevins available to members, many of whom would be more than willing to devote an aquarium to rearing a chance lot in the hope of obtaining a few first-class specimens. To encourage the breeding of twintails, the trophy donated to the Society by Mr Joe Linnell will eventually be awarded exclusively for the twintail class at the meeting for current-year breeders.

'OLD and new members get to know each other better in sharing the task of helping the Society' writes Mrs Vera Parkes in the journal of the MERSEYSIDE A.S. and new members have shared the enthusiasm of older members in preparations for the Society's Exhibition at the Liverpool Show. The long planning and arranging that precedes this show is, however, well worth the effort in the new members that result. Some of the interesting activities in store for such new members will be slide lectures such as the one given by Mr Barry Pengilly to club members in June. 44 club members thoroughly enjoyed the lecture and replies to the questions asked and were enthralled with the wonderful slides that Mr Pengilly had photographed of the characin family, of tropical marines, freshwater tropicals, lizards, snakes and reptiles.

AT open shows recently two members of AIREBOROUGH & D. A.S. have received the best exhibit in show award. Mr J. A. Whiteley achieved this at the Bradford Show with his piranha (this fish must have a charmed life—it finished a journey to the Glossop show minus most of the water it had started in). At Tadcaster, Mr R. Taylor received the best in show award for his *Pelmatochromis guentheri*. At home, club members have been receiving some excellent practical advice. A demonstration and talk by fellow member Mr K. Emms explained how to collect large amounts of *Daphnia* and Mr R. Winterburn of Bradford gave a very informative talk on 'Aquarium Electric'.

Seven new members were made welcome at the July meeting and were able to enjoy the quiz conducted by president Mr R. Lister, and view some fine fishes entered in the club's table show. Mr P. Barritt won the fish of the month award with a red-tailed black shark and Mr R. Taylor, in the August table show, with a congo tetra.

NEWLY formed COLWYN BAY & D. A.S. are now 42 members strong, having doubled their numbers in a month. Car stickers advertising the club have proved very successful. Activities have included a car rally, the success of which suggests that it will be an annual event. A visit to Chester Zoo proved popular and the 40 members present were very grateful to Mr Williams for his interesting back-stage instruction. The monthly magazine 'Piscus' is now 3 months old and members are joining in its production and finding it very helpful. The Society express their thanks to all who have helped so far and secretary Mrs P. M. Hoult (75 Cambrian Drive, Rhos-on-Sea, Colwyn Bay, Denbighshire) gives them a pat-on-the-back when she writes: 'Any club starting off, as we were a short while ago, could do much worse than appeal for help to the Editor of PETFISH MONTHLY'.

WARRINGTON A.S. members have been enjoying a varied programme this summer. A talk and slide show by Mr V. Partington on guppies and on methods of building a fish house proved extremely interesting as did a slide show and tape lecture on plants used in the aquarium that was presented at a later meeting. While members energy is directed largely now to preparations for the open show on 8th September, 'time off' was taken to make a very pleasant visit to Morecambe to visit Marineland, the Oceanarium and the Aquariums. Club table shows have been well

supported and Mr P. Norris was presented with the fish of the month trophy for two consecutive months (junior members of the club now have a table show of their own but can still compete against the senior members if they so wish).

New members are warmly welcomed to join in these activities and should contact secretary Mr A. Addison (5 Hewitt Street, Latchford, Warrington) for details.

BRISTOL T.F.C. are delighted to be able to report that all the many hours of hard work put in by members and their wives resulted in a 'best ever' open show, their eighth. Although the support from societies outside the Bristol area was disappointing, fish benched by local enthusiasts were of a very high standard and gave the judges, Mr J. Wheeler, Mr P. Baines, Mr D. Bayldon, Mr B. James and Mr H. C. B. Thomas, a difficult task in pointing the exhibits. Many awards were gained by only half a point. 'Future' club members were allowed free entry if they were wearing the club badge of the local newspaper's childrens club. Local schools were also able to bring along organised parties.

Mr F. Brown of Bristol was awarded the Best Exhibit Cup for his tiger catfish, and together with chairman Mr L. Littleton, gained the highest points in the show and was jointly awarded the Highest Points Cup. Other awards were made to the following.

Fighters: 1, 2 and 3, Mrs D. King, Lalyrintha; 1, Mr P. Wright; 2 and 3, Mr L. Littleton, Barbs; 1, Mr R. Watts; 2, Mr F. Brown; 3, Mr B. Coorish, *Hemigrammus Hyphessobrycon*; 1, Mr A. Ibbertson; 2, Mr F. Brown; 3, Mr D. Tippet, A.O.V. characins; 1, Mr A. Rogers; 2, Mr M. Taylor; 3, Mr M. Howe.

Angels: 1, Mr M. Taylor; 2, Mr E. Newman; 3, Mr R. Wigg, Dwarf cichlids; 1, Mr P. Wright; 2, Mr Musialik; 3, Mr K. Gale, A.O.V. cichlids; 1, Mr N. Binding; 2, Mr T. Green; 3, Mr G. Dyer.

Corydoras: 1, Mr P. Wright; 2, Mr L. Littleton; 3, Mr F. Brown, A.O.V. catfish; 1 and 2, Mr F. Brown; 3, Mr A. Ibbertson, A.V. danios; 1 and 2, Mr D. Flowers; 3, Mrs J. Stone, A.V. sharks and loaches; 1, Mrs D. King; 2 and 3, Mr P. Wright.

Mollies: 1 and 2, Mr F. Barry; 3, Mr R. Parsons, Swordtails; 1 and 3, Mr L. Littleton; 2, Mr M. Howe, Platys; 1, Mr L. Littleton; 2, Mr B. Lewton; 3, Mr M. Taylor, A.O.V. tropical fish; 1, Mr M. Howe; 2, Mr F. Brown; 3, Mr R. Hemmings.

Breeders, egglayers: 1, Mr B. Lewton; 2, Mr F. Brown; 3, Mr Musialik, Breeders livebearers; 1, 2 and 3, Mr L. Littleton, Guppies, lithead; 1, Mr R. Clarke; 2, Mr R. Wigg; 3, Mr P. Wright, Guppies, stailed; 1 and 2, Mr M. Taylor; 3, Mr M. Heard, Guppies, female; 1, Mr F. Brown; 2 and 3, Mr R. Wigg, A.V. sexed pair; 1, Mr B. Lewton; 2, Mr R. Hemmings; 3, Mr J. Smith, A.V. egglayer, juvenile; 1, Master P. Prewett; 2, Master M. Winfield; 3, Master M. Mechem, A.V. livebearer, juvenile; 1 and 2, Master Paul Felisk; 3, Master S. Ackerman, Individual furnished aquaria; 1, Mrs D. King; 2, Mr K. Gale; 3, Master A. Arnold.



Mr R. G. Cox (left) is presented with his first award for a platy by Mr Ted Jessopp at the Medway Show

DR G. CUST's lecture at **MEDWAY A.S.'s** open show resulted in standing-room only in the lecture hall at the St. John Fisher School. While the adults were watching enthralled slides connected with Dr Cust's recent African journey, the children were being entertained at their own film show. Once again Medway A.S. were fortunate to have this delightful setting for their show—visitors were able to sit in the sun on the school lawns high up on a hill overlooking the river—but the success of the show was due more to the hard work and organisation of the club members and their helpfulness in explaining to visitors the facilities available.

Furnished aquaria. Club furnished: 1, Blackwater A.S.; 2, North Kent A.S.; 3, Medway A.S. Individual furnished: 1, Mr C. Wood; 2, Mr P. Willis; 3, Mr B. W. Bolcham.

Tropical, A.V. fighter: 1 and 2, Mr H. S. Wood (Croydon); 3, Mr J. Marshall (Medway), A.V. egg-laying toothcarp; 1, Mr R. Christou (Erith); 2, Mr K. D. Owen (Catford); 3, Mr A. Clark (Medway), A.V. platy; 1, Mr R. C. Cox (High Wycombe); 2, Mr D. V. Larder (Mid-Herts); 3, Mr J. P. Wilson (Catford), A.V. molly; 1, Mr J. D. Wilson (Catford); 2, Mr A. Randall (North Kent); 3, Mr A. C. Goldsman (Medway), A.V. swordtail; 1, Mr D. V. Larder (Mid-Herts); 2, Mr B. T. Mather (Walthamstow); 3, Mr A. Jamieson (Catford), A.O.V. livebearer; 1, Mr C. Hunter (North Kent); 2, Mr B. Pearson (Froelance); 3, Mr T. J. Summers (Uxbridge).

A.V. danio, rasbora, minnow: 1, Mr B. Pearson (Froelance); 2, Mr C. Hunter (North Kent); 3, Mr G. Craft (Medway), A.O.V. lilyfinch; 1 and 2, Mr J. D. Wilson (Catford); 3, Mr B. Harvey (North Kent), A.V. characin; Mr A. Clark (Medway); 2, Mr G. Craft (Medway); 3, Mr F. R. Kendrick (Froelance), A.V. barb; 1, Mr D. J. Green (North Kent); 2, Mr J. E. Bellingham (Tonbridge); 3, Mr M. A. Jones (Erith).

A.V. Corydoras: 1, Mr B. Pearson (Froelance); 2, Mr T. Summers (Uxbridge); 3, Mr A. Jamieson (Catford), A.V. catfish; 1, Miss A. Wright (Medway); 2, Mr and Mrs C. Pike (High Wycombe); 3, Mr A. Jamieson (Catford), A.V. loach; 1, Mr D. V. Larder (Mid-Herts); 2, Mrs T. Brown (Medway); 3, Mr B. Davison (Mid-Herts).

A.V. angelfish: Mr R. H. Savage (Mid-Herts); 2, Mr F. Geary (St. John Fisher); 3, Mr A. Randall (North Kent), A.O.V. cichlids; 1, Mr A. Jamieson (Catford); 2, Mr B. Davison (Mid-Herts); 3, Mr G. Scott (Erith), A.V. dwarf cichlid; 1, Mr C. Hunter (North Kent); 2, Mr B. Pearson (Froelance); 3, Mr D. C. Kempen (Blackwater), A.O.V. tropical egg-layer; 1, Isobel Bellingham (Tonbridge); 2, Mr F. R. Kendrick (Froelance); 3, Mr A. Jamieson (Catford).

Breeders, Egglayers: 1, Mr J. D. Wilson (Catford); 2, Mr R. G. Cox (High Wycombe); 3, Mr H. S. Wood (Croydon), Livebearers; 1, Mr B. T. Mather (Walthamstow); 2, Mr H. S. Wood (Croydon); 3, Mr J. D. Wilson (Catford).

Plants, A.V. tropical rooted plant: 1 and 3, Mr J. Marshall (Medway); Cape Fear spatterdock and Amazon sword; 2, Mr C. Elliott (Medway; *Aponogon*).

Coldwater, A.V. singletail goldfish: 1, Miss S. Davis, A.O.V. coldwater; Mr K. Owen (Catford); 2, G. Owen (Catford); 3, Mr W. Sherwin (Willesden).

A **LARGE** number of **OXFORD A.S.** members attended the club's annual outing to the London Zoo Aquarium where permission had been obtained for a 'behind-the-scenes' visit. Two excellent guides, who proved to be keen aquarists, were provided by the Zoo to explain the set-up behind the display tanks.

The club meets every third Friday in the month in the Temple Bar Club Room, Temple Street, Cowley Road, Oxford, and welcomes anyone who is interested in tropical or coldwater fishes. Further details from secretary, Mr C. Gosling, The Haven, High Street, Wheatly.

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Anyone interested in joining the club is invited to contact secretary Mr Walker at 67 Applegarth Avenue, Guildford, Surrey.

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Male guppies: 1, Mrs L. Thorne (78); 2, Mr R. Mayne (74); 3, Mr J. Thorne (75). Female guppies: 1, Mr M. Bradford (74); 2, Mr R. Ott (73); 3, Mr W. Sherwin (72). Platys: 1, Mr G. Kilsby (75); 2 and 3, Mr R. Kerridge (74), 74). Swordtails: 1, Mr B. Davison (79); 2, Mr D. Larder (76); 3, Mr P. Abbott (75). A.v. livebearer: 1, Mr and Mrs Gee (79); 2 and 3, Mrs L. Thorne (77, 76).

Labyrinths: 1, Mr A. Hulyer (83); 2, Mr and Mrs Gee (82); 3, Mr and Mrs Jeffs (81). Barbs: 1 and 2, Mr B. Davison (81, 80); 3, Mr R. Savage (78). *Corydoras*: 1 and 3, Mr G. Aylard (83, 80); 2, Mr W. Sherwin (83). A.o.v. catfish, loach and botia: 1, Mr D. Kempen (82); 2, Mr A. Hulyer (81); 3, Mr G. Aylard (79). A.o.v. tropical egg-layer: 1, Mr A. Hulyer (81); 2, Mr G. Aylard (75); 3, Mr D. Dant (74). Characins: 1, Mr R. Dant (81); 2 and 3, Mr R. Brown (80, 80).

Dwarf cichlid: 1, Mr R. Betts (81); 2, Mr E. Sheppard (79); 3, Mr A. Hulyer (78). A.o.v. cichlid: 1, Mr J. Thorne (84); 2, Mr R. Savage (81); 3, Mr and Mrs Jeffs (80). Danio rasbora: 1 and 3, Mr R. Edney (78, 76); 2, Mr J. Thorne (77). Egg-laying toothcarp: 1, Mr J. Randall (77); 2, Mr and Mrs Jeffs (77); 3, Mr W. Isgrove (73). Pairs: 1, Mr W. Dant (79); 2, Mr P.

Langley (77); 3, Mrs L. Thorne (77). Brood livebearers: 1, Mr and Mrs Jeffs (82); 2, Mr A. Hulyer (80); 3, Mr R. Kerridge (70). Brood egg-layer: 1, Mr and Mrs Jeffs (80); 2, Mr Randall (78); 3, Mr A. Hulyer (77). Plant: 1, Mr R. Ott (75); 2 and 3, Mr R. Betts (72, 70).

MEMBERS of **HOUNSLOW & D. A.S.** are working very hard now on plans for their open show to be held on 14th September. The venue this year, the Youth Centre in Cecil Road is, they inform us, a great improvement on others that have been secured before, and, in view of the entries already received, they have good hopes of beating last year's record of 600 entries. The specialist class particularly has again aroused tremendous interest. Schedules are still available (see Dates for Your Diary).

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Common goldfish: 1, Mr V. P. Voysey (75); 2, Mr J. Norris (Bracknell, 74); 3, Mr A. Marshall (Basingstoke, 73). Shubunkins: 1 and 2, Mr V. P. Voysey (73, 75). A.o.v. fancy goldfish: 1, Mr V. P. Voysey

results are: pairs: 1, Mr John Thorne (cherry barbs); 2, Mr John Thorne (guppies). 4 x 4 show jars: 1, Mr Barry Abbott; 2, Mr Stone. Social events, though not so frequent during the summer holiday period, will include an outing to Bourne-mouth A.S. this month and many other functions are planned. Recent lectures have included talks on fish foods and feeding and diseases of fishes. Many other speakers are booked and auctions of fish, plants and equipment arranged that provide good fun for members and good value all round. New members and visitors to meetings held every other Wednesday at Isleworth Community Centre, Clifton Road, Isleworth, Middlesex are always welcome. Further details from secretary Mr Derek Woodward of 34 Uxbridge Road, Hanworth, Middlesex.

(63). A.v. pond or river fish: 1, Mr V. B. Hunt (Portsmouth, 84); 2, Mr V. P. Voysey (81); 3, Mr R. Keeping (Basingstoke, 80). Guppies: 1 and 2, Mr C. Beets (Portsmouth, 82, 80); 3, Mr R. Brown (Salisbury, 79). Swordtails: 1, Mr R. G. Cox (High Wycombe, 78); 2, Mrs M. G. Nicoll (Reigate & Redhill, 77); 3, Mr S. Cook (Salisbury, 75). Platys: 1, Mr F. B. Young (Reigate & Redhill, 79); 2, Mr R. Wingrove (High Wycombe, 77); 3, Mrs Nicoll (Reigate & Redhill, 76). Mollies: 1, Mrs Nicoll (Reigate & Redhill, 77); 2, Mr D. V. Jones (Southampton, 75); 3, Mr F. Lange (Basingstoke, 74).

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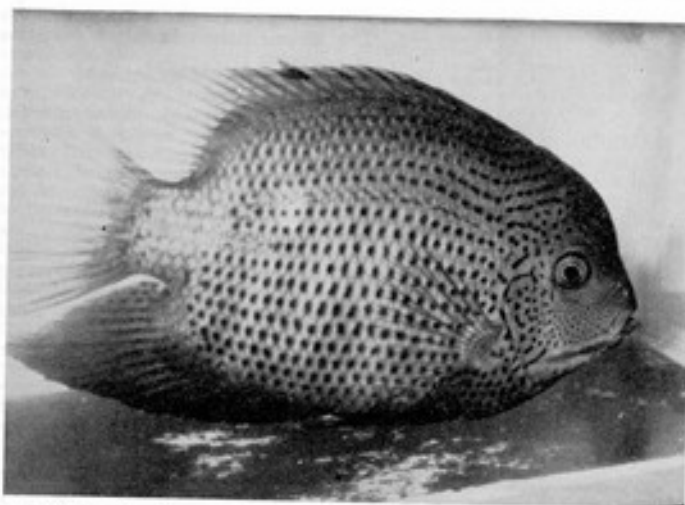
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Best fish in the show at Bournemouth was this severum cichlid owned by Mr R. K. Willey (85 points)

RE-STARTING an annual open show, for a society that has discontinued it in the past, is always a risk, but it seems that this can be done successfully—as indeed Bournemouth A.C. have proved. Last year saw the first Bournemouth open show for a few years, and a very successful venture it was; but this year the 'novelty' had gone and all concerned were probably wondering whether the success of 1967 would be repeated or was going to be proved just a 'flash in the pan'. PFM's reporter is glad to be able to confirm that it was another success. Although the total number of entries was down in comparison with last year, the enthusiasm and support of the public proved to be much greater. Some 500 people saw the show (other than the exhibitors!) and a total of 14 societies benched fish, which numbered also the many entered by private individuals. Notable aquarists were to be seen—Mr F. Brown from Bristol and Mr J. Stillwell from Portsmouth, who assisted the judges in their task. Several stands were present including those of two local traders, one of whom had a nice show of amphibians, notably salamanders, and cacti (ideal additions to the fish house), and there was an I.M.S.S. stand.

The best fish in the show, and also the best tropical fish in the show, was the *Cichlasoma severum*—a magnificent specimen owned by Mr R. K. Willey of Salisbury A.S. and awarded 85 points. The best coldwater fish in the show, a golden rudd, was entered by Mr V. Collins

of Yeovil A.S. (89 points). Detailed results were as follows.

Male guppies: 1 and 2, Miss P. M. Carr (Brighton); 3, Mr T. J. Croucher (Brighton). Female guppies: 1, Mr Scott-Morgan (Bournemouth); 2, Mr C. Bees (Bournemouth); 3, Mr T. J. Croucher (Brighton). Platys: 1, G. P. Carter (Weymouth); 2, Mr A. Nicholls (Yeovil); 3, Mr Cairns (Rusny-mede). Mollys: 1, Mr M. Sainsbury (Salisbury); 2 and 3, Mr A. Nicholls (Yeovil). Swordtails: 1 and 2, Mr R. Hemming (Bristol T.F.C.); 3, Mr T. Garcia (Bournemouth).

Barbs: 1, Mr R. J. Brown (Salisbury); 2, Mr I. Goddard (Salisbury); 3, Mr B. Coombs (Bournemouth). A.o.v. labyrinth: 1, Mr P. A. Grovener (Rusny-mede); 2, Mr S. Cooke (Salisbury); 3, Mr F. Macfarlane (Bournemouth). Fighters: 1, Mr J. V. Jeffrey (Bournemouth); 2, Mr A. M. Disney; 3, Mr T. Garcia (Bournemouth). Hemigrammus and Hyphamerycon: 1, Mr G. Cox (Bournemouth); 2, Mr Sainsbury (Salisbury); 3, Mr T. Garcia (Bournemouth). A.o.v. characin: 1, Mr E. Cox (Bournemouth); 2, Mr J. V. Jeffrey (Bournemouth); 3, Mr I. Goddard (Salisbury). Danio, rasbora, minnow: 1, Mr D. F. Harding (New Forest); 2, Mr S. Cook (Bournemouth); 3, Mr R. Hemming (Bristol T.F.C.). A.v. toothcarp: 1 and 2, Mr H. Armitage (Portsmouth); 3, Mr R. S. A. Hansey (Salisbury).

A.o.v. cichlids: 1, Mr R. K. Willey (Salisbury); 2, Mr T. Garcia (Bournemouth); 3, Mr Scott-Morgan (Bournemouth). Angels: 1, Mr C. W. Eason (Weymouth); 2, Mr K. B. Forward (Shaftesbury); 3, Mr A. J. Ryan (Bournemouth). A.v. catfish and loach: 1, 2 and 3, Mr R. G. Pike (Bristol A.S.). A.o.v. tropical: 1, R. J. Brown (Salisbury); 2, Mr K. C. Smith (Rusny-mede); 3, Mr T. Garcia (Bournemouth).

Shubunkins: 1, Mr I. Chaney (Bournemouth); 2, Mr R. Watkins (Bournemouth). Common goldfish: 1, 2 and 3, Mr J. V. Jeffrey (Bournemouth). A.o.v. coldwater: 1 and 2, Mr V. Collins (Yeovil); 3, Mr S. Collard (Bournemouth). Twinstails: 1 and 2, Mr V. Collins (Yeovil). Breeders livebearers: 1, Mr G. P. Carter (Weymouth); 2, Mr C. Bees; 3, Mr T. J. Croucher (Brighton). Breeders egg-layers: 1, Mr T. H. Hanton (Weymouth); 2, Mrs T. Gillard (Yeovil); 3, Mr F. Brown (Bristol A.S.). Breeders coldwater: 1, Mr V. Collins (Yeovil); 2 and 3, Mr J. V. Jeffrey (Bournemouth).

UNSOUGHT for praise from another society is a fair indication of the success of an open show and the HUTTON GRAMMAR SCHOOL A.S. were delighted to read in the Blackpool & Fylde A.S. newsletter the following: 'Whilst over yesterday at the Hutton Grammar School A.S. open show, which incidentally had 83 entries, I was surprised by the quiet efficiency and organisation shown by these young juniors. It was a display laid out to best advantage for viewer and judge alike. Mr Barry Pengilly, judging, congratulated the boys for their outstanding performance'. The best fish in show award went to M & W (Sunnybrow) for their fire eel, awarded 81 points. M & W were also the competitors with most awards and Sunnybrow A.S. gained most points as a society. The best fish shown by a member of the school society was judged to be the African knife fish, shown by J. H. Bradley and awarded 79 points.

Swordtails: 1, Miss A. Kaye (Huddersfield, 70); 2, C. Lloyd (Chorley, 69); 3, McArdle (Brookfield, 68). A.o.v.: 1, M & W (Sunnybrow, 78); 2, Miss B. Kaye (Huddersfield, 76); 3, D. Clarke (Blackpool & Fylde, 64). Characins, a.v.: 1 and 2, M & W (Sunnybrow, 80, 78); 3, B. Kaye (Huddersfield, 74). Minnows and barbs, barbs: 1, B. Kaye (Huddersfield, 78); 2, P. Redmond (Sunnybrow, 77); 3, M & W (Sunnybrow, 76). A.o.v.: 1, P. Redmond (Sunnybrow, 77); 2, K. Williamson (Hutton, 75); 3, D. Holden (Clitheroe, 72).

Labyrinth, a.v.: 1, A. Kaye (Huddersfield, 80); 2, R. J. Stringer (Hutton, 75); 3, J. H. Bradley (Hutton, 74). Cichlids, a.v.: 1, D. Holden (Clitheroe, 78); 2, McArdle (Brookfield, 75); 3, J. H. Bradley (Hutton, 74). Catfish & loaches, catfish: 1 and 2, P. Redmond (Sunnybrow, 77, 75); 3, D. Clarke (Blackpool, 74). Loaches: 1 and 2, M & W (Sunnybrow, 76, 73); 3, R. J. Stringer (Hutton, 73).

A.o.v. tropical: 1, M & W (Sunnybrow, 81); 2, J. H. Bradley (Hutton, 79); 3, P. Redmond (Sunnybrow, 77). A.v. coldwater: 1, T. Whitworth (Howick School, 70). Fairs, livebearers: 1, A. Kaye (Huddersfield, 79); 2, M & W (Sunnybrow, 77); 3, D. Holden (Clitheroe, 75). Fairs, egg-layers: 1, C. Lloyd (Chorley, 80); 2, D. Holden (Clitheroe, 79); 3, B. Kaye (Huddersfield, 75). Breeders: 1, B. Kaye (Huddersfield, 75); 2, D. Clarke (Blackpool, 77); 3, A. Kaye (Huddersfield, 76).

The work involved in putting on their open show by no means exhausted the activities of the Society. At the return inter-club match with CHORLEY & D. A.S., the school society won by 17 points to 15 despite the fact that Miss C. Hayward (Chorley) had the best fish in show, a brown acara that gained 85 points. Mr L. Lancaster (Chorley) and Mr N. D. Swindlehurst (Hutton) were the judges.

Much of the Society's success has been due to the hard work put in by the club's officers, as chairman Mr J. S. Hancock made clear at the club's annual general meeting. He made special mention of secretary, N. D. Swindlehurst, treasurer, R. J.

SHOW secretary Mrs B. Scrimshaw of NOTTINGHAM & D. A.S. is hoping that club members have had wonderful holidays and are returning refreshed and full of enthusiasm to tackle the preparations for the NATIONAL OPEN SHOW, 7th-8th September at the Drill Hall, Triumph Road, Nottingham.

Stringer and show secretary D. J. Radcliffe. New officers elected were: secretary, D. J. Radcliffe (Kindu, Todd Lane South, Lostock Hall, Preston, Lancs PR5 5XE); treasurer, R. McCann; assistant secretary, J. H. Bradley, equipment officer, P. Kinvig; publicity officer, R. J. H. Murray. Mr Hancock warned that the coming year could be particularly difficult unless each member pulled his weight to help the officers for there were many plans to carry out. It was proposed to enter a stand at the B.A.F. and it was hoped to invite local societies to join in an excursion to The Aquarium Show in London this November. It was announced that J. H. Bradley had been awarded highest points at table shows throughout the year (45). R. J. Stringer was second with 27 and K. Williamson third with 13.

THE 'handy men' among the members of YORK & D. A.S. have once again given fellow members the benefit of their ingenuity. At a 'technical topics' meeting a series of short talks on equipment and modifications were given. Mr H. G. Sutton showed several types of air pumps to give members an idea of the one most suitable for their own requirements; Mr E. Leadley demonstrated a warning system that would operate in the event of a failure in electricity in the fish house. Mr M. H. Cooper again demonstrated, for the benefit of newer members, his modification to the Swirlaway cleaner whereby for about £1 the cleaner could be modified to use electricity and Mr G. B. Hawksby showed the modifications he had designed for using a Windmill Air Rejector in tanks both deeper and shallower than standard ones.

Leading points positions in the club's table show competition are to date: Open class: Mr G. Pygott (29), Mr M. H. Cooper (28), Mr P. Carey (11). Novice class: Mr A. Hargreaves (18); Mr D. Hockley (14); Mr P. Waddington (14). Junior class: Master P. Carey (29), Master R. Thiel (27), Master A. Machin (18).

Croydon A.S. Open Show

MEMBERS OF THE PUBLIC were able to sit comfortably at the CROYDON A.S. open show and watch the judges at work—by positioning themselves in the gallery of the large hall in which the show was staged. An adjoining picture gallery made a very useful annexe to house stalls, club shop, a beautifully mounted display of stamps including many showing tropical marines, and the refreshment facilities. A total of 407 entries were benched and entries were received from Brent, Hounslow, Thurrock, Uxbridge, North Kent, Reigate & Redhill among many others.

The best fish in show trophy was presented to Mrs Smith for a pearl-scale goldfish that gained 82 points. Mr R. Cooper of Kingston won the F.B.A.S. trophy for loaches with a *Botia sidthemuski* and the Labyrinth Trophy went to Mrs Hunter of North Kent for a *Macropodus coloratus*. The Ladies Rose Bowl was presented to Mrs Nicoll of Reigate & Redhill (the lady exhibitor winning the highest total of points) and the Croydon Cup for the club with most award cards will be held for the next year in its home ground as it was won by Croydon A.S.

Guppy: 1, Miss Thorne (Hounslow, 78); 2, Mr J. Thorne (Hounslow, 76); 3, Mr C. T. Manning (Kingston, 75). Mollies: 1, Mr Randall (North Kent, 80); 2, Mr J. G. Stockwell (London Transport, 77); 3, Mr M. J. Smith (Walthamstow, 76). Swordtails: 1, Mrs Nicoll (Reigate & Redhill, 79); 2, Mr B. Mather (Walthamstow,

77); 3, Mr P. G. Abbott (Brent, 76). Platys: 1, Mr Young (Reigate & Redhill, 79); 2, Mr Appleyard (Thurrock, 78); 3, Mr C. Chisholm (Croydon, 77). A.V. livebearers: 1, Mr D. C. H. Durrant (Thurrock, 81); 2, Mr K. Dryden (Croydon, 80); 3, Mr Hunter (North Kent, 79).

Cichlids: 1, Mr J. Thorne (Hounslow, 77); 2, Mr B. Pearson (Freelance, 76); 3, Mr G. Lockwood (Lavengro, 75). Barb: 1, Mr J. Thorne (Hounslow, 80); 2, Mr Young (Reigate & Redhill, 79); 3, Mr Q. Taylor (Reigate & Redhill, 78). Rasbora/minnow: 1, Mr R. H. Johnson (Mid-Sussex, 81); 2, Mr T. D. Smith (Brent); 3, Mr J. Thorne (Hounslow, 79). Tooth-carp: 1, Mr R. Christou (Irrith, 78); 2, Mr T. W. Glass (Willesden, 74); 3, Mr Young (Reigate & Redhill, 77). Characin: 1, Mr Thorne (Hounslow, 81); 2, Mr J. W. Penny (Croydon, 80); 3, Mr T. D. Smith (Brent, 79). Labyrinth: 1, Mrs Hunter (North Kent, 79); 2, Mr J. Marshall (Croydon, 78); 3, Mr D. H. Crowley (Croydon, 77).

Corydoras: 1, Mrs Nicoll (Reigate & Redhill, 80); 2, Mr C. Chisholm (Croydon, 78); 3, Mr E. Nicoll (Thurrock, 77). Catfish/loach: 1, Mr R. Cooper (Kingston, 76); 2, Mrs Nicoll (Redhill & Reigate, 75); 3, Mr Tee (Brighton, 74). Egg-layers: 1, Mr Howes (Freelance, 81); 2, Mr J. G. Stockwell (London Transport, 79); 3, Mr B. Harvey (North Kent, 77).

Egg-layers (breeders): 1, Mr D. C. H. Durrant (Thurrock, 81); 2, Mr H. Wood (Croydon, 74); 3, Mr Tee (Brighton, 72). Livebearers (breeders): 1, Mr K. Dryden (Croydon, 79); 2, Mr H. Wood (Croydon, 74); 3, Mr H. Parker (Croydon, 73). Fighters: 1, Mr D. C. H. Durrant (Thurrock, 77); 2 and 3, Mr H. Wood (Croydon, 76, 75). Angels: 1, Mr T. Rose (Croydon, 80); 2, Mr C. Wood (North Kent, 79); 3, Mr Stemp (Reigate & Redhill, 77). Common goldfish: 1, Mr A. G. Pearce (77); 2, Mr R. E. Dudley (South Park); 3, Mr C. Fellersman (Clapham, 71). Shubunkin: 1 and 2, Mr K. T. Sherwood (74, 72); 3, Mr A. Simmons (71). Goldfish: 1, Mrs Smith (82); 2, Mr A. G. Pearce (71); 3, Mr A. Simmons (64). Native or foreign coldwater: 1, Mr E. Lough (Canford, 77); 2, Mr K. Owen (Canford, 76); 3, Mr Macanionnaigh (Tottenham, 75).



Mr K. T. Sherwood (left) receiving first and second awards for his shubunkins at the Croydon Open Show

COLOURED slides of the Furnished Aquarium Exhibition at Bradford proved exceptionally interesting to SWILLINGTON A.S. at a recent meeting since Swillington members were successful in the show. Other entertainments at meetings have been an excellent tape and slide show supplied by the B.K.A. and a quiz formulated by one of Swillington's own members.

Results of the Society's third open show have now been received. The best in show award went to Mr Turner of Mixenden for a blind cave tetra. Other results are listed below.

Section 1, mollies: 1, Mr and Mrs J. & H. Derris; 2, Mr P. Iverson; 3, Mr R. Wombwell. Platys: 1, Mr and Mrs Cohen (section winners); 2, Mrs S. Barry; 3, Miss R. Kaye. Swordtails: 1, Mr P. Barrett; 2, Mr T. Douglas; 3, Mr Wright. Section 2, guppies: 1, Mr P. Reynolds (section winner); 2, Mr G. Monk; 3, Mr D. W. Smith.

Section 3, small barb: 1, Mr and Mrs J. & H. Derris (section winners); 2, Mr F. Buxton; 3, Mr and Mrs Barnap. Large barb: 1, Mr R. Taylor; 2, Mr J. Whitley; 3, Mr G. Poole. Section 4, small characins: 1 and 2, Mr A. G. Esteves; 3, Mr R. Walker. Large characins: 1, Mr Turner (section winner); 2, Mr White; 3, Mr and Mrs J. & H. Derris. Section 5, dwarf cichlids: 1, Mr R. Walker; 2, Mr J. Chamberlain; 3, Mr and Mrs J. & H. Derris. Large cichlids: 1, Mr P. Carey (section winner); 2, Mr R. Taylor; 3, Mr K. Scotland.

Section 6, Corydoras cats: 1, Mr A. G. Esteves; 2, Mr R. Walker; 3, Mrs I. Bulleyment. A.O.V. cats and loach: 1, Mr and Mrs J. & H. Derris (section winners); 2, Mr P. Carey; 3, Mr R. Walker. Section 7, esboens, danios and minnows: 1, Mr and Mrs Cohen (section winners); 2, Mr P. Reynolds; 3, Mr F. E. Gregory. Section 8, sharks and foxes: 1, Mr R. Walker (section winner); 2, Mr F. Gues; 3, Mr A. G. Esteves. Section 9, fighters: 1, Mr A. E. Whitehead (section winner); 2, Mr A. Smith; 3, Mr D. W. Smith. Section 10, anabantids: 1, Mr A. E. Whitehead (section winner); 2, Mr and Mrs J. & H. Derris. Section 11, toothcarps: 1, Mrs I. Bulleyment (section winner); 2, Mr A. Greenhall; 3, Mr D. Jackson.

Section 12, pairs livebearers: 1, Mr and Mrs J. & H. Derris (section winners); 2, Mrs A. Gawthorne; 3, Mr and Mrs Stringer. Section 13, pairs egglayers: 1, Mr and Mrs J. & H. Derris (section winners); 2, Mr R. Walker; 3, Mrs S. Barry. Section 14, breeders livebearers: 1, Mr and Mrs Barnap (section winners); 2, Mr and Mrs J. & H. Derris; 3, Mrs S. Barry. Section 15, breeders egglayers: 1, Mr and Mrs J. & H. Derris (section winners); 2, Mrs I. Bulleyment; 3, Mr R. Walker. Section 16, A.O.V. tropical: 1, Mr P. Carey (section winner); 2, Mr P. Reynolds; 3, Mr A. Deakin.

Section 17, coldwater: 1, Mr F. D. Hunt (section winner); 2, Mr Eden. Section 18, furnished jars: 1 and 2, Mrs S. Barry (section winner); 3, Mr Naylor.

THE SOUTH WALES SECTION of the FEDERATION OF GUPPY BREEDERS SOCIETIES held its annual show at the beginning of July, when 14 exhibitors benched 152 entries between them. Three Gold Jewel awards and three Silver Pins were awarded. Mr Peter Garner of Cardiff, a new member of the section, was awarded Best South Wales Exhibit and best in show. He also won his first silver pin. The best female in show award went to Mr M. Delingpole (S. Midlands) and

the best breeders team to Mr J. Wheeler (Provincial). Mr P. Player received the best South Wales breeder award and the South Wales Points Cup went to Mr R. Wigg. Detailed results follow.

Cofertail males, judge Mr D. Bowers: 1, Mr K. Pearce (S. Midlands, 661). Round, spear and pirital males, judge Mr N. Court: 1, 2 and 3, Mr M. Delingpole (S. Midlands, 58, 64, 65). Scarftail male, judge Mr R. Wigg: 1, Mr F. Hall (Prov., 67). Original veiltail male, judge Mr K. Pearce: 1 and 2, Mr R. Wigg (South Wales, 73, 71); 3, Mr M. Delingpole (S. Midlands, 64). Bottom sword males, judges Mr D. Bowers, Mr R. Wigg: 1, 2 and 3, Mrs D. Court (Bristol and Bath, 74, 73, 69). Double eared male, judges Mr R. Wigg and Mr D. Bowers: 1 and 2, Mr M. Delingpole (Gold Jewel award, S. Midlands, 75, 70). Fantail male, judge Mr N. Court: 1, Mr M. Delingpole (66).

Lyretail and topwood male, judge Mr N. Court: 1 and 2, Mr J. Wheeler (Prov., 66, 60); 3, Mr M. Delingpole (64). Dehatched male, judge Mr K. Pearce: 1 and 2, Mr J. Wheeler (77, 74); 3, Mr F. Hall (Prov., 70). Long dorsal veiltail male, judge Mr R. Wigg: 1, 2 and 3, Mr P. Garner (silver pin award, S. Wales, 77, 70, 69).

Short dorsal veiltail male, judges Mr M. Delingpole, Mr N. Court: 1 and 2, Mr B. Clarke (silver pin award, Prov., 77, 74); 3, Mr R. Wigg (S. Wales, 76). Flagtail male, judge Mr M. Delingpole: 1, Mr F. Hall (64). Metropolitan female, judge Mr D. Bowers: 1 and 2, Mr F. Hall (64, 62). Superb-tail female, judge Mr N. Court: 1, Mr P. Player (S. Wales, 73); 2, Mr M. Delingpole (71); 3, Mr R. Wigg (70). Scalloped female, judge Mr M. Delingpole: 1, Mrs D. Court (Bristol & Bath, 76).

Grey females, judge Mr M. Delingpole: 1, Mrs D. Court (74); 2, Mr J. Wheeler (Prov., 72). Coloured female, judge Mr R. Wigg: 1 and 2, Mr M. Delingpole (gold jewel award, 75, 73); 3, Mrs D. Court (74). Gold female, judge Mr M. Delingpole: 1, Mr J. Wheeler (75). Goldfaced female, judges Mr R. Wigg and Mr D. Bowers: 1 and 2, Mr M. Delingpole (gold jewel award, 74, 74). Wedgetail female, judge Mr K. Pearce: 1, Mr P. Player (S. Wales, 67); 2 and 3, Mr M. Delingpole (66, 65).

Breeders male, judge Mr M. Delingpole: 1, Mr J. Wheeler (68); 2, Mr P. Player (64); 3, Mr R. Wigg (59). Breeders female, judge Mr D. Bowers: 1, 2 and 3, Mrs D. Court (76, 69, 68). Non-members male, judge Mr N. Court: 1, Mr P. Parsons (61); 2, Mr D. Warneant (68); 3, Mrs M. Tanner (67). Non-members females, judge Mr M. Delingpole: 1, Mr P. Parsons (71); 2 and 3, Mr D. Warneant (69, 68).

In Brief

... LEEK & D. A.S. amended rules now include the presentation of a cup and commemorative plaques for Aquarist of the Year and Junior Aquarist of the Year, based on show points obtained at monthly shows. Latest table show results for catfish, loaches and gobies (judged by Mr M. Jerrard and Mr W. Ash) are: 1 and 2, Mr G. Thompson; 3, Mr K. Thompson; 4, Mr J. Thompson.

Results for livebearers class (judges, Mr Morris and Mr Myall) were: 1, Mr S. Ormerod; 2 and 4, Mr W. Ash; 3, Mr R. Billing.

... THE ADDRESS of the show secretary of MID-HERTS A.S., Mr C. Withers, is now: 15 Charmouth Road, St Albans, Herts. June saw club members travelling many miles to enter fish in shows at Glossop, Brighton, Uxbridge and Cambridge, with a good deal of success. Members are also supporting home table shows very well. Mr Pye of Brentwood Aquatics judged the mini aquaria and plant show as well as providing an excellent slide show. Over 70 fishes

WE hear that at the HENDON A.S. CONVENTION in October this year the lecturer will be Mr Thomas Horemán, who will be speaking about his experiences collecting aquatic plants in their natural surroundings in Brazil and elsewhere.

were benched at the second June table show.

During July, members enjoyed lectures by chairman Mr T. Timms on tank construction and by Mr P. Bird on pond life, and at the table show for livebearers, judge Mr K. Nutt of Tottenham gave the best fish in show award to the swordtail owned by Mr I. Willis.

... THE STAND set up by ILFORD & D. A. & P.S. members at their local hobbies exhibition, the Redridge Exhibition, proved very popular and it is felt that some good publicity was won for the hobby. Members have also much enjoyed a lecture by Mr H. Tibbury of Brentwood on breeding and raising the more exotic goldfish species. He illustrated his talk with some excellent slides and a selection of fancy goldfish.

Mr P. Woodley has won the Society's annual pond competition (2, Mr L. Smith; 3, Mr B. Bird; 4, Mr P. Hartley), and his name appears again in the club's news in connection with the officers elected at the June annual general meeting. These are: president, Mr V. Price, vice-presidents, Mr J. Nott, Mr L. Jarvis, Mr M. Braham; chairman, Mr A. L. Stebbing, vice-chairman, Mr J. A. Sanders; treasurer, Mr M. Brill; assistant treasurer, Mr L. Smith; secretary, Mr R. Ruth (13 Dunkeld Road, Dagenham); show secretary, Mr H. Berger; assistant show secretary, Mr D. Woodley; press secretary, Mr L. Smith; librarian, Mr K. Ellis; committee, Mrs V. Woodley and Mrs K. Ruth; auditors, Mr J. Hattam and Mr G. Irish.

... RESULTS of recent table shows of **NEW FOREST A.S.** have been: guppies: 1, Mr D. Tuckwell; 2, Mr R. Travers; 3, Mr R. Mooley. Swordtails: 1, Mr D. Tuckwell; 2, Mr R. Menhenett; 3, Mr K. Newton. Members were very successful at the Southampton open show, when they took three firsts.

... OFFICERS elected at the **STOCKTON-ON-TEES A.S.** annual general meeting are: chairman, Mr D. Keightley; secretary, Mr D. Tickenor; show secretary, Mr T. Walls (11 Wylam Road, Stockton-on-Tees, Teeside); treasurer, Mr T. Stephens; vice-secretary, Mr B. Walls; committee, Mrs B. Clennett, Mr Emmerson, Mr W. Bowman, Mr K. Clennett, Mr L. Collins.

... **WAKEFIELD & D. A.S.** members, as guests of **YORK A.S.**, thoroughly enjoyed the excellent trip arranged by the host Society around their own members' fish houses. Results of Wakefield's classified table show were: 1, Mr J. Reynolds; 2 and 3, Mr B. Kilner, A.o.v.; 1, Mr A. Walker; 2, Mr J. Reynolds; 3, Mr G. Balby, A.o.v. novice: 1, Miss S. Cooke; 2, Mr J. Ball; 3, Mr C. Wainwright.

... **HUCKNALL & BULWELL A.S.**, jointly with **RAINWORTH & D. A.S.**, are to hold an exhibition of tropical fish at the Hucknall Round Table's annual gala on Monday, 2nd September, where it is hoped to display some 40 furnished tanks. A number of unusual problems have had to be overcome, not least of which have been the heating arrangements, as the exhibition is being held in a canvas marquee in a field. Space heating has seemed to be the answer. A cordial invitation is extended to all aquarists to visit the exhibition.

... **EALING & D. A.S.** are determined that financial crises shall not mar their organisation and to this end have co-opted Mr R. C. Mills on to the committee as fund-raiser. Another idea recently put into action has been the selection of a panel of three to answer questions put by members. The panel consists of Mr A. Ankin, a local pet shop proprietor,

A FESTIVAL OF SPEAKERS is being planned by HORSFORTH A.S. for Sunday, 8th December. The convention will be held in the main Hall at Leeds University and two speakers already booked are Mr Norman Mason-Smith and Mr Gerald Jennings. Further details will be published as soon as they are received.

Badge of the Month



THE design of the **BLACKPOOL & FYLDE A.S.** badge in blue, gold and black on white is of such a modern form that people are surprised to find it was created nearly 20 years ago. Mr Ray Legge, present curator of Belle Vue Zoo, designed it when he was assistant secretary of the Society. Mr Legge's artistic skill, well known to visitors at Belle Vue and Blackpool Tower Aquariums, was also put to work in the design of the front cover of the Blackpool club magazine 'Discus'. Secretary is Mr L. G. Howard, 56 Stanford Avenue, Blackpool, Lancs.

Mr R. C. Mills, who has kept tropical fish for 11 years, and Mr C. Rainbow, who has followed the hobby for 5 years. Club member Michael Sadler (age 15) was voted in as the Society's first junior committee member.

... **WESTON-SUPER-MARE & D. T.F.C.** were hosts this year in the inter-club competition with **YEOVIL & D. A.S.** and were overall winners by 84 points to 54. The best fish in show was a very nice *Mollinnesia sphenops* entered by Mrs Bushell of Yeovil; and the 60 or 70 people who attended found it most helpful to have the judges, Mr J. Wheeler (Bradford-upon-Avon), Mr F. Brown (Bristol) and Mr T. Jones (Bristol) explain how each fish had been pointed.

... **BRISTOL A.S.** are pleased to report the successes of club member Mr F. Brown who has taken best fish in show awards at both Salisbury and Bristol T.F.C. open shows. The club's July table show was held over on the evening when they were visited by Mr T. L. Dodge of M.A.P.S. Mr Dodge described the coldwater fish fanciers' year,

taking in the care and maintenance of the pond and aquarium and giving details of breeding and rearing fancy varieties of goldfish. So animated was the discussion that arose and so many were the questions that club members had for Mr Dodge that to everyone's disappointment the meeting time ran out.

... **CHAIRMAN** of a new Society formed in **CARLISLE** is Mr James R. Baxter (32 Moor Park Avenue, Belle Vue, Carlisle).

... **SCARBOROUGH & D. A.S.**, as a newly formed society, consider they are off to a good start with a membership of 40. Meetings so far have included a slide-tape show on the 1967 B.A.F., a picture quiz and a talk by Mr G. B. Hawksby of York A.S. on White Cloud Mountain minnows. The club now has a permanent meeting place at The Barowcliffe Hotel (first and third Wednesday of each month at 8.0 p.m.).

... **AT THEIR** first appearance at an open show **TONBRIDGE & D. A.S.** members were very pleased to collect four awards. These were won at Medway by Mrs I. Bellingham (first for a *Labeo bicolor*), Mr J. Bellingham (second for a spanner barb) and Mr I. Mathieson (a third and fourth). The committee have also been greatly encouraged to see the new members arriving for meetings (Dowgate Hall, Tonbridge, at 8.0 p.m. on the second Wednesday of each month).

... **FOLLOWING** on a talk by fellow members Mr Peter Greening and Mr Fergus McNaughton on judging, **DUNDEE A.S.** members arranged a judging competition for the next meeting to put some of their newly won 'theory' into practice. The September meeting will take the form of a quiz between teams representing the president versus the vice-president.

... **WELL OVER** 50 members attended the **HORSFORTH A.S.** monthly meeting in July and took along 28 fish for the table show. Results were: specified class: 1, Mr M. Pollard; 2, Mr M. Barker; 3, Mr A. Jobbings. A.o.v.: 1 and 2, Mr W. Audsley; 3, Mr K. Shaw. Junior: 1 and 2, Mr D. Shaw; 3, Mr S. Elstob. The sponsored walk brought in over £15 to club funds, which have since been additionally swollen by proceeds from a very successful auction.

... **YEOVIL & D. A.S.** members achieved great success at the Bourne-mouth A.S. open show. Mr V. Collins won the best coldwater award and other successes included

the third best fish in show, a first and second with twin tails, a first and second for a.o.v. coldwater and a first in coldwater breeders. Mrs Gillard achieved a second in breeders egg-layers and a fourth for goldfish and Mr A. Nicholls a second in the mollie class and a third in platys.

... RESULTS of the thirteenth table show held by BRENT A.S. were: *Corydoras*: 1, Mr T. D. Smith; 2, Mr V. Coyne; 3, Mr M. Abrahams, A.o.v. catfish: 1, Mr T. D. Smith; 2, Mr P. Abbott; 3, Mr C. Hooper, A.o.v. egg-layers: 1 and 2, Mr P. Shrimpton; 3, Mr T. D. Smith. The best fish in show award went to Mr T. D. Smith.

... MIDLAND AQUARIST LEAGUE final table placings are: Bedworth, 82; Coventry, 71; Atherstone, 66; Leamington, 61; Rugby, 57; Northampton, 43.

... LEAMINGTON & D.A.S. are still mildly astonished at the numbers of large fish entered in their open show. Large fish in large tanks caught them unprepared. 322 entries came from as far afield as Newport and Cardiff.

... SECRETARY of REIGATE & REDHILL A.S. is now Mrs M. Young, 36 Ashdown Road, Reigate, Surrey.

MR ERN HICKS, in an article on snails in 'Finchat', published by the Aquarium Society of Victoria, suggests that one excellent way to remove snails from a tank is to keep one or two clown loaches. He has found that they completely eliminate snails from a tank, given time.

... BECAUSE of the huge increase in the MANCHESTER SECTION of the F.G.A. a new meeting place has to be found. Meetings are held on the first Sunday of each month at 2.30 p.m. and are now at The Drill Hall, Stretford Road, Manchester. Entrance and car park in Cambridge Street.

... MEMBERS of BLACKWATER A.S. have just obtained their first trophy—a first in the club furnished aquarium class at the Medway A.S. show. Chairman Mr Eddie Gee worked so hard to achieve this that he almost missed getting his own fish into the show. Secretary Mr Kempen tells us there are still a few vacant chairs at the Hayleigh Oak on the third Wednesday of the month (8.0 p.m.) and he adds 'so come along and join us hobbyists'.

... AFTER a break for the summer holidays BRIGHTON & SOUTHERN A.S. members return to a slide-tape lecture by Mr Jim Kelly on 'Chester Zoo' hired from the F.G.A. and obtained by popular request. The first half of the year has brought increased membership and entries at table shows increased to such an extent that classes have had to be divided. A warm welcome for newcomers on alternate Wednesdays at the Prince George, Trafalgar Street, Brighton.

... ADDRESS of the secretary of CHELTENHAM & D.A.S., Mr C. R. Surgeoner, is 1, Martins Close, Swindon Village, Cheltenham, Glos. (please note change from that given in July 1968).

... LONG BEACH (CALIFORNIA) A.S. participation in the town's great annual Hobby Show was a little complicated this year by the fact that the maintenance crew belonging to the venue, the Auditorium, were all new, and though most co-operative, were unfamiliar with the problems of the room allotted to the aquarium show. All the old staff, familiar with every nook and cranny of the building, were exercising their expertise on the Queen Mary that the town now possesses.

Dates for Your Diary

18th August-1st September, HARLOW A.S. second Open Show. (Harlow Town Show). Details from Mr J. B. Duncan, 113 Little Pynchons, Harlow, Essex.

1st September, SALFORD A.S. Open Show. Red Rose Hotel, Cross Lane, Salford, Lancs. Film show, refreshments, parking. Schedules from Mr M. McGurk, 345 Wensley Road, Swinton, Lancs.

7th September, BETHNAL GREEN A.S. Open Show. Details from Mr Len Smith, 2 Mercers Road, Holloway, London, N.19.

7th September, HIGH WYCOMBE A.S. Open Show.

7th September, YATE & D. A.S. second Open Show. Christchurch School, North Street, Downend, Bristol. Schedules from Mr T. J. Green, 42A North Street, Downend, Bristol.

7th-8th September, NOTTINGHAM & D. A.S. National Open Show. Dwell Hall, Triumph Road, Nottingham. Schedules from Mrs. B. J. Scrimshaw, 30 Avebury Close, Nottingham.

8th September, RADLETT F.G.A. annual show. Guides Hut, Watling Street, Radlett, Herts. Enquiries to Mr H. J. Harris, 49 Robert Burns House, Willoughby Park Road, Tottenham, London, N.17.

8th September, WARRINGTON A.S. Open Show. St. Benedict's Youth Club (Bell Hall), Orford Lane, Warrington. Benching 12.30-2.0 p.m. Schedules from show secretary, 42 Hood Lane, Warrington.

14th September, NUNEATON A.S. first Open Show, 16 classes. Show schedules from Mr G. Cox, 36 Manor Court Road, Nuneaton, Warks.

14th September, HOUNSLOW A.S. Open Show. Youth Centre, Cecil Road, Hounslow. Schedules from Mr Bert Pratt, 23 Woodlawn Drive, Feltham, Middlesex.

15th September, OLDHAM & D. A.S. Open Show. Werneth Park, Oldham. Schedules from Mr M. Tonge, Paradise Farm, Delph, Oldham.

21st September, MID-HERTS A.S. Open Show. St. Pauls Church Hall, St. Albans, Herts. Benching: furnished aquaria, from 8.0 a.m.; fish, 10 a.m.-2.0 p.m. Schedules from Mr C. Withers, 15 Charnmouth Road, St Albans, Herts.

21st September, AMERSHAM & D. A.S. Open Show.

21st September, NEWPORT A.S. sixth Open Show. Duffryn Junior High School, Stow Hill, Newport. Benching 9.0 a.m.-12.30 p.m. Open to public about 3.0 p.m. Show secretary, Mr M. J. Parry, 45 Western Drive, Gabalfa, Cardiff.

22nd September, DEWSBURY & D. A.S. Open Show. Further Education Centre, Park Road, Batley, Yorks. Information from Mr G. Whitley, 17 Lower Hall, High town, Liversedge, Yorks.

PLEASE note. The Reigate & Redhill A.S. Open Show has had to be postponed for one week. It is now being held on Sunday, 22nd September (see Dates for Your Diary).

22nd September, BIRMINGHAM SECTION, F.G.A. Open Show. Glebe Farm Community Centre, Glebe Farm Road, Sreckford, Birmingham 23. Show secretary, Mr. P. W. Jinks, 355 Stockfield Road, Yardley, Birmingham.

22nd September, WEDNESBURY A.S. are hosts at the Paul Stokes and Harry Williams Memorial Trophy Show. The Restaurant, G.K.N. Ltd, Salisbury St., Darlaston. 9 tropical classes, 3.0 p.m. Refreshments, slideshows, bar, aquatic films. Details from Mr R. Coley, 55 William Green Road, Wednesbury, Staffs.

22nd September, STONE A.S. Open Show. Walton Community Centre, Walton, nr. Stone, Staffs. Benching 12.00 noon-2.30 p.m. Schedules from Mr K. Harvey, 61 St Vincents Road, Walton, Soons.

22nd September, REIGATE & REDHILL A.S. Open Show. Somers Hall, Reigate. Benching 9.0 a.m.-1.30 p.m. Open to public 5.30 p.m. Details from Mr I. Stemp, 10 Bonhams Drive, Horley, Surrey.

27th-28th September, BRISTOL A.S. Open show. Bishopstone Parish Halls, Gloucester Road, Bristol. Schedules from Mr R. Berry, 120 Fouracre Crescent, Downend, Bristol.

20th September, HUCKNALL & BULLWELL A.S. first Open Show. A. R. Marshall & Sons Ltd. Works Canteen, Forest House, Hucknall Lane, Bulwell, Notts. Benching 12 a.m.-2 p.m. Judging 2 p.m. Schedules from Mr M. Harrington, 5 Greenwood Vale, Hucknall, Notts.

25th September, BLACKPOOL & FYLDE A.S. eighteenth Open Show. Harrowside Solarium, South Promenade, Blackpool.

6th October, HEYWOOD & D.A.S. Open Show. Ambulance Hall, Bamford Road, Heywood.

Benching 12 noon-2.0 p.m. Schedules from Mr K. Hill, 29 Chadwick Lane, Heywood.

12th October. **CHELTENHAM & D. A.S.** Open Show, Ambulance Headquarters Hall, 86 Gloucester Road, Cheltenham.

26th-27th October. **BRITISH AQUARISTS' FESTIVAL** at Belle Vue Gardens, Manchester. Enquiries to Mr G. W. Cooke, Spring Grove, Field Hill, Batley, Yorks.

3rd November. **MIXENDEN T.F.S.** Open Show, Mixenden Community Centre, Clough Lane, Mixenden, Halifax Yorks.

10th November. **HALIFAX A.S.** seventh Open Show, Smith Bulmer & Co. Ltd., Holmfield Mills, Halifax. 4 A-class judges. Schedules from Mr A. G. Whyte, 21 Rothwell Drive, Halifax.

THE AQUARIUM SHOW

7th-10th November. At the RHS Old Hall, Vincent Square, London S.W.1. Schedules available from the Show Organizer, PetFish Monthly, 554 Garratt Lane, London, S.W.17.

10th November. **HARTLEPOOLS A.S.** tenth Open Show, Longsear Hall, Hartlepool. Schedules from Mr J. D. Watson, 42 Sydenham Road, Hartlepool, Co. Durham.

23rd November. **THE HACKNEY SHOW.** Details from Mr Len Smith, 2 Mercers Road, Holloway, London N.19.

23rd November. **GSGB Quarterly Meeting.** Conway Hall, Red Lion Square, Holborn, London. 2.30 p.m. Details from Mr W. L. Wilson, 57 Constable Gardens, Edgware, Middlesex.

1st December. **AIREBOROUGH & D. A.S.** seventh Open Show, The Town Hall, Guiseley, Nr Leeds, Yorks. Schedules from Mr G. E. Walker, 2 West End Terrace, Guiseley.

23rd February 1969. The **KINGS HALL OPEN SHOW.** Lower Clapton Road, London, E.9. (Sponsored by Hackney Borough Council). Details from Mr Len Smith, 2 Mercers Road, Holloway, London, N.19.

9th March. **Huddersfield T.F.S.** Open Show, Drill Hall, St. Paul's Street, Huddersfield.

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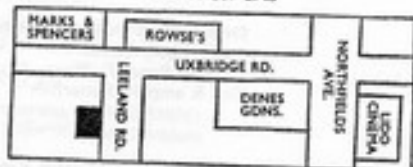
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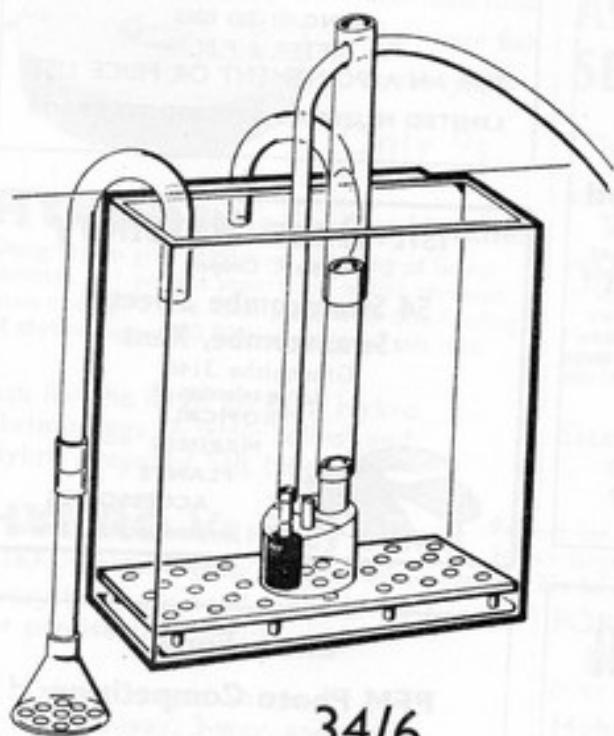
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Please complete in BLOCK CAPITALS

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I have read and will conform with the Rules and Conditions of the PetFish Photo Competition.

I declare that the entry (or entries) submitted are my own work as an amateur and not that of a professional photographer.

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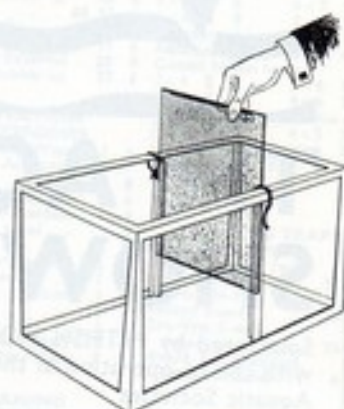
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30x12x12 in.	£3 13 6
30x15x12 in.	£3 19 6
30x15x15 in.	£4 12 0
36x12x12 in.	£4 7 6
36x15x12 in.	£5 0 0
36x15x15 in.	£6 2 6
48x12x12 in.	£6 10 0
48x15x12 in.	£7 7 0
48x15x15 in.	£8 8 0

HEATERS

Es Es Standard—25, 50, 75, 100w.	8 0
Es Es Superb—25, 50, 75, 100, 125, 150w.	10 10
Uno Regal—25, 40, 60, 75, 100, 120, 150, 200w.	10 0
Es Es Flexible—100w. only	21 10
Elephant—25, 40, 50, 60, 75, 100, 120, 150w.	10 6
Rena—35, 50, 75, 100, 150, 200w.	12 0
Wizard—25, 40, 50, 60, 75, 100, 120, 150w.	8 6
Wizard Double Coil—200, 250w.	22 6

COMBINED HEATER & THERMOSTAT

Es Es Dial-O-Matic—100, 150w.	£2 7 0
Es Es Preset-Matic—50, 100, 150w.	£1 8 1
Inter Pet Submersible—100, 125, 150w.	£1 15 6

THERMOSTATS

Uno Popular	11 6
Uno Pop/Neon	14 0
Uno Inside Control	15 0
Uno Outside Control	17 0
Uno Comet Top	18 6
Uno Comet Top Neon	20 0
Es Es Minor	11 0
Es Es Major	16 6
Es Es Sencinel	30 9
Elephant Standard	18 0
Elephant Key Set	18 0
Rena Top/Control	22 10
Rena Top/Control with Neon	25 0
Wizard	10 0
Wizard/Neon	12 6
Wizard/De Luxe Neon	18 6

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Springfield	£1 7 6
Constat Q.K./Neon	£1 5 0
Constat J.L./Neon up to 1,000w.	£2 2 0
Silk-stat	£1 5 0

THERMOMETERS

Es Es Dumpty	7 2
Hykro Spirit Thermometer	3 0
Floating Spirit	2 6
Uno Blue line	4 6
Uno Perspex Back Mercury	6 6
Spare Dumpty Rings	6 6
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24x12 in.	£1 9 6
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24x12 in.	£2 14 9
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20x10 in.	£4 18 4
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36x15x12 in.	£23 17 6
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24x15x12 in.	£13 2 6
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48x15x10 in.	£25 0 0

TWO TIER STANDS

18x10x36 in.	£1 17 6
18x12x36 in.	£2 2 6
24x12x36 in.	£2 7 6
30x12x36 in.	£2 15 0
30x15x36 in.	£2 2 6
36x12x36 in.	£3 5 0
36x15x36 in.	£3 10 0
48x12x36 in.	£4 5 0
48x15x36 in.	£5 0 0

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18x10 in.	£1 2 6
18x12 in.	£1 5 0
24x12 in.	£1 7 6
30x12 in.	£1 12 6
30x15 in.	£1 17 6
36x12 in.	£2 0 0
36x15 in.	£2 5 0
48x12 in.	£2 12 6
48x15 in.	£3 2 6

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18x12x11 in.	£8 6 0
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36x12x14 in.	£16 19 0
36x15x14 in.	£22 10 0

FANTASY GRAVEL

Mottled Lavender	4 0 per 2 lb.
Mottled Green, Mottled Red, Mottled Primrose, Mottled Blue, Gloss Black, Matt White.	4 0 per 2 lb.

3-D BACKGROUNDS

For 18x12 and 18 in. tanks	14 7
For 24x12	19 0
For 36x12 and 36 in. tanks	30 8

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Stokes Gdn. Fnt.	£7 19 6
Float Assembly	£1 10 0
Eheim 388 Compact F/W	£9 0 0 complete
Eheim 388 Compact S/W	£9 15 0 complete
Eheim 386 Single F/W	£12 0 0 complete
Eheim 386 Single S/W	£13 0 0 complete
Hippo Fountain	£5 19 6
Super Cascade	£8 8 0

AIR PUMPS

Summit	£1 3 0
Super Summit	£1 7 6
Montrose Minor	£1 2 6
Montrose Major	£1 6 0
Quiko Pump	£1 6 0
Fairy Pump	£1 5 0
Star	£2 0 0
Jnr. Zoobeko	£2 6 0
Zoobeko	£2 14 0
Biko (twin outlet)	£5 5 0
Rena	£2 15 0
Rena 100	£2 19 0

AIR PUMP ACCESSORIES

Nylon clamp	1 0
Tubing clamps	1 6
T-pieces	1 0
3-way pieces	1 3
Small oblong diffuser stone	1 3
Finelloy diffuser stone	1 3
Diffuser stems 12 in.	5 0
15 in.	6 0
24 in.	10 0
P.V.C. flexible non-toxic air tubing per ft.	3 0
Rubber air tubing per ft.	3 0
P.V.C. air tubing 40 ft. coil	8 3
Hyflo regulator valve	5 0
Hykro gang valves	3 6
Air Line Valves	2 3

AIR PUMP SPARE PARTS

Fairy Diaphragms	1 3
Fairy Air Chambers	1 9
Zoobeko Diaphragms	3 0
Biko Diaphragms	3 0
Silents	2 6
Montrose	1 6
Rena Diaphragms 2 for	4 0
Summit Diaphragms	6 0

RUBBER SUCKERS

Knob type	3 0
Shank type	4 0
Double sided	4 0
Hykro Plastic	6 0

FILTERS

Windmill Premier Biological Filters (S) 18x10 in.	13 9
(L) 24x12 in.	16 6
Windmill Regent	11 0
Windmill Consort	21 6
Internal Corner Gro-Wel Bottom Bubble-up	9 9
Hykro Jnr. Bottom	5 0
Hykro De Luxe	13 6
Dynaflor	£6 17 6
Super Dynaflo	£7 15 0
Slim Jim External	17 6
Klear King External	25 0
Gro-Wel Bubble-up	37 6

FILTRATION ACCESSORIES

Brosiam Glass Wool	1 6
Brosiam Activated Carbon	2 0
Jaynor spun glass	1 6
Jaynor filter carbon	1 6
Dacam glass silk	1 3
Dacam filter carbon	1 3
Dacam Aq. peat	1 3
Nylon filter medium	1 6
Sterayl	5 3
Dacam Filter Pads	1 6
Inter-Pet Poly wool	1 6
Hornby's Clear-View	5 0

CLEANING EQUIPMENT

Windmill Air Rejector	11 0
Windmill Super Air Rejector	17 0
Windmill Hand Rejector	16 6

AQUAMASTIC

1 lb. tin 2 9+p. & p. 2 6	
2 lb. tin 4 6+p. & p. 3 0	
4 lb. tin 7 0+p. & p. 4 6	
7 lb. tin 10 9+p. & p. 6 0	
14 lb. tin 19 9+p. & p. 9 0	

DUROGNOST

Water hardness testing kit	20 0
Spare tablets Pkts. of 10 Strength N.I. or N.S.	2 0
Indicators each	6 0

COLORMETER PS

pH testing kit	42 9
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MISCELLANEOUS

Hykro Aqua Sealer	2 0
Hykro Leak Stopper	1 3
Aquastop	3 0

OTHER FISH FOODS

Chlorella meal 2/6 and 5/3	
Shrimp Meat, Medium	2 6
Turtle Food, Large	2 6
Infusoria Powder	4 0
Conditioning Goldfish Food Large	2 3
Glow Tablets (30 tabs.)	3 6
Treat Packs (7 different foods)	9 0
Baby Food Egglayers	2 8
Brine Shrimp Packs	9 6
Miracle freeze-dried worms	3 3
Miracle freeze-dried brine shrimp	5 0
Miracle Liver Treat	6 6
Miracle Fish Nip	3 6

WHITEWORM CULTURE

Small 3 6

NETS

Round Nylon nets:	
3 in. 1 2 4 in. 1 3	
Green cotton nets:	
3x2 1 3 5x6 2 0	
3x4 1 6 6x7 2 6	
4x5 1 9 7x9 3 9	
Breeders short wooden handles:	
6x9 4 6	
Comet Nylon nets:	
3x4 2 0 5x6 3 0	
4x5 2 6 4x6 3 9	
Brine Shrimp or Daphnia nets:	
3x2 1 9 4x5 2 9	
3x4 2 6 5x6 3 0	
Wooden handles 7x9 6 3	

BREEDING TRAPS

Windmill combined breeding and rearing	21 6
Hykro 3-in-1	7 0
Reliant 3-in-1	15 0
Gro-Wel 5-way	25 0
American	25 0
Hykro fish breeders, fine and coarse	6 0

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