

The Aquarist

and Pondkeeper

DECEMBER 1964



MONTHLY
Vol. XXIX No. 9

TWO SHILLINGS

WALTER R. SMITH LTD.

For Complete Tropical and Coldwater
Aquaria also Tropical Marine
100 Varieties of fish usually in stock on view
in 76 polished stainless steel aquariums

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	Frames	Aquariums
24 x 15 x 12	£ 7 7 0	£ 9 9 0
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36 x 15 x 12	£ 10 10 0	£ 13 13 0
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Fine Grade for Tropicals and
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Start them with LIQUIFRY the liquid
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LIQUIFRY No. 1 (red tube) for egglayer fry contains minute food particles and produces
natural infusoria in the minimum possible time.

LIQUIFRY No. 2 (green tube) Ideal for young livebearers.

Price 2s. 6d. per tube.

Then use BIOL—pure dried plankton for the young and adult fish. A tremendous help to
growing fish—contains 73% protein. If left uneaten, Biol does not foul the
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Breeder's pack containing 28 grams for 5s. 3d.

LIQUITOX (capsules of Phenoxetol)

The proven specific for Fungus and
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Colourless—effective—does not harm the plants. Definite dosage given by ingenious chart.



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Please send for our Catalogue.



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GOOD WISHES FOR A

HAPPY CHRISTMAS

AND A

BRIGHT NEW YEAR

from

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**THE AQUARIUM
HEATING
SPECIALISTS**





TetraMin

for your Fishes' Xmas



and all
the year round



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IT'S NEW! IT'S DIFFERENT!

The Battery Operated 'GRO-WEL'

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'THE AQUARIUM VACUUM CLEANER'

The ideal Christmas present!

Every Aquarist wants one!

Adjustable for tanks up to 24 inches deep.

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Boxes of 5 disposable bags Price 4/-

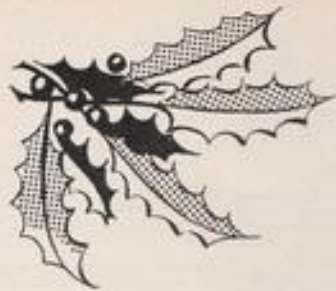


★ Swirl-Away the dirt in your aquarium with this efficient aquarium vacuum cleaner!

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December 1964

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14x 8x 8 13/6	24x 12x 12 52/6
16x 8x 8 15/-	24x 12x 15 57/6
18x 10x 10 22/6	30x 12x 15 79/6
24x 12x 12 36/-	36x 12x 15 104/6
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24x 12x 15 WITH STAND	£12 10 0
36x 12x 15 PLAIN	£15 15 0
48x 10x 15 STAND	£22 0 0
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48x 10x 15 WITH WROUGHT-IRON BOOKCASE STAND	£22 0 0

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10" 4/-	16x 8 12/9	.. 36/-
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18" 8/-	36x 12 35/6	.. 80/-
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24x 12	£9 17 6
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36x 12	£16 19 6
36x 15	£22 10 0
CORNER CONCAVE FRONT ..	£21 0 0

CARRIAGE ON AQUARIA AT COST. TERMS: CASH WITH ORDER.

All Standard Sizes of Aquaria in Stock. Any sizes made to specification. Quotations free. Complete installations quoted for.

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APHYOSEMION AUSTRALE	15/- pair
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TROPICAL FISH IN THE AQUARIUM	17/6
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GRINDAL WORM CULTURE	3/-
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LONGLIFE FROZEN BRINE SHRIMP	
1 1/2 oz.	3/3
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DIVER	4/6
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HYFLO JUNIOR	£5 7 6
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" SUPER	54/6
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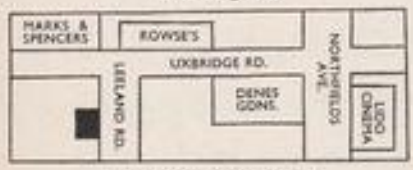
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BUSES: 281, 282, 406, 418, 283

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10 x 6 x 8	16/-	16 x 8 x 8	21/6	18 x 10 x 12	32/6
14 x 8 x 8	19/6	18 x 10 x 10	27/6	24 x 12 x 12	47/-

Special Xmas Offer, to end of January 1965

9 Large Neons for £1 or 2/6 each. Small Discus 22/6 each.

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Golden Orfe 6"-7"	15/-
Fantails	4/6 to 7/6
Green Tetra	3/- & 4/-
Large Goldfish 7"-8", 8"-10" 10/- & 15/-	
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Medium Goldfish	5/- to 7/6
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ALL POND PLANTS STOCKED

THERMOSTATS each

Prockter	36/-
Constat External	35/-
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Inter-Pet	22/6, 29/6

UNO

Out/Adj.	18/-
Int/Adj.	15/-
Int/Adj. "Popular"	10/-
"Popular" with neon indicator	12/6
Pretest Matic	24/6
Wizard	10/-, 12/6, 18/-

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Jet	20/-, 30/6 & 50/6
Ha. Summit	21/-
Quicko	22/6
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Hy-do Junior New Super	107/6
Hy-do "A"	120/-
Hy-do "B"	165/-
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Thermometers	Filters
Mercury .. 4/-	Hykro Outside .. 15/-
Blue Gem .. 4/6	Corner .. 4/6
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Clamps .. 1/-	Premier Biological Sub-
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Tabing 9d. yd.	Gravel Filters .. 12/6, 15/-
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Glass Wool 1/-	Slim Jim .. 17/6
Filter Carbon 2/-	Klear King .. 22/6
Halamid .. 3/-	Bottom Filter 8/3
Aquariumstop 2/6	Rock Filter .. 17/6

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Large Neons, 6 for £1 : 3/6 each

Rosaceus .. 4/-	Plecostomus .. 15/-
Angels .. 2/6 & 3/6	Jack Dempsey's 3/6
White Cloud .. 2/6	Large Green Sailfin .. 7/6
Minnows .. 2/6	Mollies .. from 5/-
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Black Widows .. 2/6	Angels 4/- to 7/6
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Guppies (pale) 1/6, 5/-	Lemon tetras .. 4/-
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Thick lip 3/-, dwarf or leeri 3/6, Kissing 4/-, Opaline 3/6, Gouramis.	

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Aquarium Vacuum Cleaner	46/8
Super Model	56/8

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BOW-FRONTED AQUARIUM

48 x 10 x 15	£28 10 0
36 x 12 x 15	£19 10 0
Standard Bow £22, £15 10, £11 10 0	

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Sagittaria	6d. each
Vallis. Terra	6d. "
Vallis. Spiralis	6d. "
Ambulia	6d. "
Ludwigia	6d. "
Hydrophila	6d. "
Cryptocoryne	2/- & 3/-
Wistaria	1/6 & 2/-
Giant Hydrophila	1/6 & 2/-

By post, add 1/6d. Minimum 7/6d.

HEATERS 25w to 150w

Inter-Pet	10/6
Uno	8/6
P.S. Standard	7/6
Wizard	9/6

ADULT RARE FISHES

Pelmatochromis Kribensis	7/6 & 10/- each
Elephant Nose Fish	18/- each
Adult Nigger Barbs	5/- & 7/6
Adult Cummingsi Barbs	5/-
Knife Fish Nigerian	9/-
Black Cardinal	7/6 each
Red Eyed Congo Characin	15/-
Scats from	7/6 to 20/-
Amazoni Cats	5/- & 7/6
Malayan Angels	7/6 to 15/-
Black Veil Angels	6/- & 7/6
Tan Foil Barbs 3"-4"	6/- & 7/6
Silversharks 2"-3"	15/-, 20/-, 25/-, 30/-
Firemouth	4/-
Red Veilnail Guppy	18/- pair
Red Tail Sharks 5/- & 10/-	Large 15/- each
Butterfly Fish	7/6

Our minimum order for fishes is £2, a charge of 15/- is made for container. Carriage charges, by fast passenger train and telegram stating time of arrival. Increase due to telegram charges.

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24 x 12 x 15	£4 15 0
18 x 10 x 12	£2 12 6
White or black covers	18/6 & 25/-

Larger sizes on quotation

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(Light Gauge)	(Angle Iron)
12 x 6 x 6 .. 10/6	24 x 12 x 12 .. 30/-
10 x 8 x 6 .. 9/6	24 x 12 x 15 .. 35/-
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16 x 8 x 8 .. 15/6	36 x 12 x 15 .. 90/-
18 x 10 x 10 .. 21/-	48 x 12 x 15 .. 120/-

COVERS

18 x 10 .. 14/6	18 x 10 x 36 .. 33/6
24 x 12 .. 21/-	24 x 12 x 36 .. 45/-
30 x 12 .. 30/-	30 x 12 x 36 .. 50/-
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Aquarium covers sent by post only at customer's risk.

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

Exotic Flakes	1/6
Hykro Flakes	1/-
Brosiam	1/6 & 2/6
Rowie	6d. & 1/6
Dry Daphnia	6d. to 3/6
Liquidry	2/6
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Elise	2/- & 4/6
Hobby	2/- & 7/6
McLynn's	1/6, 2/6, 6/6, 17/6
Beine Shrimp	2/-
Tetra Min Growth Food Hahnel	4/-
Wardley's	8/-, 4/6, 2/6, 2/3, 1/3
Fantasy	2/-, 9/-
Tetra Min	1/10, 3/-, 6/6, 22/6, 70/-
Suregrow	1/3, 2/6
Vitakraft	1/10 & 6/9
Shool	2/- & 4/6

Add 1/- up to 10/-; 1/6 up to 20/-; 2/- up to £2; 3/- up to £3; over Free CARRIAGE AT COST CHARGED ON AQUARIUMS, STANDS, AND TANKS. TERMS, CASH WITH ORDER Sent at Owner's Risk

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Christmas Greetings

from

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T F H PET BOOKS . T F H HORTICULTURAL BOOKS
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"REGENT"
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Designed for
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"WINDMILL"
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will work
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BREEDING
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Beautifully
Designed and
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RETAIL ENQUIRIES FROM
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THE ORIGINAL
PREMIER BIOLOGICAL FILTER

**It is unique. It is reliable. It is unseen
It is nature's own method of filtration
It is permanent. It needs no attention**



They are saying

- 1. BETTER CIRCULATION.** The Premier Biological Filter collects water from the bottom and recirculates it, thus preventing cold spots—in tanks fitted with this filter fry will even feed at gravel level.
- 2. HEAT ECONOMY**—the action of the Premier Biological Filter gives a continuous circulation of heat and thus provides the desired temperature evenly throughout the aquarium, saving of current costs is noticeable.
- 3. PLANT GROWTH** — In tanks fitted with the Premier Biological Filter plant growth has been more healthy—plant roots do not rot away.
- 4. WATER CLARITY** — tanks are kept suspension free, always crystal clear water. The Premier Biological Filter continually filters and purifies the water.
- 5. NO MESS**—filter mediums are not required for use with The Premier Biological Filter, saving need for replacement, provides a cleaner job and saves money spent on filter mediums. Completely eliminates need for syphoning and prevents black gravel, disposes of sediment where it settles.
- 6. NEATNESS.** The Premier Biological Filter is fitted underneath the gravel, only the air lift is visible. Can be worked by even the smallest of vibration aerators. Once installed can be left for years—will not clog up. Suitable for both cold water and tropical aquariums.

Made for 18" tanks at 12/6 each. 24" tanks at 15/- each
Other size tanks see fitting chart of filter box

Pamphlet willingly sent on receipt of 3d. postage

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Yours for 10/-	
23/6	

OFFER No. 2

50 Assorted Tropical Plants including—
Dwarf Lily, Aponogetum Cryptocoryna,
Wistaria.
Yours for 20/-

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30 Assorted Tropical Plants 10/-

OFFER No. 4

30 Assorted Coldwater Plants 10/-

EXTRA SPECIAL

Water Lettuce, very beautiful plants 2/6

SPECIAL SERVICE

Live Daphnia by post 2/- including postage

BOW-FRONTED AQUARIUMS

36in. x 12in. x 15in. bow-fronted aquarium with wrought iron bookcase stand £19/19/- complete.

48in. x 12in. x 15in. — 29 gns.

Available in penny bronze, black & gold, and cream

WITH PLAIN STAND

Inches 48 x 10 x 15	£22.15.0
" 36 x 12 x 15	£15.15.0
" 24 x 12 x 15	£12.10.0

Complete with Stand and Hood
(15in. to centre of bow)

All Standard Sizes of
Aquaria in Stock. Any
shape or size made to
Customers' Specifications.
Installations a Speciality.

STANDS

18 x 10 x 36	37/6
24 x 12 x 36	47/6
30 x 12 x 36	52/6
36 x 12 x 36	57/6

REMEDIES, etc.

Aquasonic	3/6	Halamid	3/-
Broniam White Spot Cure	2/-	Liquinox	1/9
Vivo Salts	2/-	Diseasolve	2/6
Sea Salt	1/6	Broniam Fertilizing Tablets	1/6
Tetracares all 4/- each			

Please add 1/- extra postage on appliance orders up to 10/-; 1/6 up to 20/-; 2/- up to 30/-. Glass, China and Shells sent at purchasers' own risk.

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Contents

	Page
London Show Meeting	153
The Aquarium Sword Plants	154
The Black-line Tetra	156
A Surprise Spawning	157
Air Transport of Fishes	157
Stocking the Philatelic Aquarium	158
Saving Livebearer Fry	160
Rockwork for the Aquarium	161
The Pigmy Sunfish	162
Our Readers Write	163
British Aquarists' Festival, 1964	164
The <i>Aquarist</i> Crossword	164
News from Aquarium Societies	165

London Show Meeting

THERE is an obvious demand for a large-scale aquarium show in the London area, there should be sufficient support for such a venture if all aquarists' societies participate, and further investigation is needed to establish the best way in which the show could be organised on a sound financial basis. These were the main points to emerge at the meeting called by Hendon and District Aquatic Society early in December, which was attended by about 50 people, including prominent personalities in the aquarium trade and representatives from aquarists' societies (Catford, East London, Erith, Free lance, Goldfish S.G.B., Hendon, Hampstead, Hounslow, Riverside, Uxbridge, Willesden).

Several speakers made the point that although the best-known exhibition venues in London were unlikely to be of use because of high costs of hire and services, there were other suitable halls in less central areas of London worthy of consideration. Societies should be asked to provide details of likely sites in their own areas to an Aquarium Show Exploratory Committee, which was elected from those present at the meeting: Mr. M. D. Cluse (Goldfish S.G.B.), Mr. Anthony Evans (Editor, *The Aquarist*), Mr. S. C. Jacobs (Pet Traders' Association), Mr. T. R. Lee (Lee, Reid and Co., Ltd.), Mr. R. Skipper (Hendon A.S.), Mr. F. Stone (F.B.A.S.). The form of presentation of a show was discussed in a preliminary way, with the desirability being stressed of staging the exhibits in an attractive manner likely to promote a paying high attendance by the general public whilst also meeting the requirements of competitive showing between aquarists' societies. It was suggested that it might be possible to place the business of organisation with a professional exhibition organiser, and the Exploratory Committee was asked to provide a report on all these matters within 2 months. It was inevitable that reference would be made to the British Aquarists' Festival held annually in Belle Vue, Manchester, and Mr. A. Boarder was able to tell the meeting of the huge success of the B.A.F. held last month, with an attendance for the 2 days that exceeded all previous records and with increased entries of exhibits.

It is too early to raise hopes of a London Show in 1965, but the initial move has been made, thanks to Hendon A.S. As Mr. M. D. Cluse said, there are still many active London aquarists with large-scale show "know-how" to be called upon, and it is to be hoped there would be sufficient people willing to give a "yes" in answer to Mr. R. Skipper's crucial question: "Are you willing to give up a week's holiday to put on a Show?"

The Aquarium Sword Plants

by Dr. R. O. B. LIST

AQUARISTS do not take sufficient care of water plants. Old habits die hard, and the majority of us continue simply to make a hole in the compost with our fingers, insert the plant in question and then hope for the best. Those who are keen gardeners will undoubtedly know that we plant our plants in the garden in varying manners—each one just that little differently from the other—and we get the results we expect.

Not so with aquatic or bog plants. If the plant comes up to expectation then it is a matter of luck and certainly not care or forethought. In fact it is only a few years ago that we considered that all plants that grow in water were aquatics, and it was never fully understood what is meant by bog plants.

There is an apparent lack of visible flowers on our plants, and aquarists tend to be surprised when flowers do appear. It is my contention that there is no need at all for surprise, and one should rather commence to look most closely at the plants that do not in fact produce flowers.

A point that appears to be little known is that if the plant is treated as a true bog plant, you will have flowers, most of which are white, and from these you can collect seeds which can be propagated. Plants which are fully submerged only propagate by runners and hence we have the 'chain' plants, which are Nature's method of overcoming its difficulties. You may well ask what is then the difference between the two end products. This is easily answered in two words: strength and size. I do not, by any means, decry the chain plant. It has many virtues and has well earned its popular reputation.

Another small oddity is the names that we give these plants. We call them Amazon or Malayan sword plants. Let us therefore look at some of the natural origins: we find Brazil, Cuba, North Africa, Mexico, U.S.A., Canary Islands, Patagonia and the West Indies. In attempting to establish a common factor which could possibly cover all of these areas, the only possible one that comes to mind is warmth.

Plants of the genus *Echinodorus* are the favourites of many aquarists and are much in demand as aquarium centrepieces. Although we regard them as aquatic plants in fact they are bog plants, and the genus has at least 10 species.

The reference books all appear to agree in details about the size of these species, and although I have seen fairly massive specimens, I have never come across a plant with the given maximum size of 32 to 36 inches. Personal tastes might not be suited by a plant of such a size, but it is nevertheless said that they are available (*Echinodorus paniculatus*).

Echinodorus brevipedicellatus. This type is the one most generally known to aquarists and is not to be confused with *E. tenellus*. Its habitat is Brazil. It is of the small-leaved variety, spear formed, which have the tendency to curve slightly in the middle. The leaves are found on stalks of 2 to 6 inches in length and can be up to 1½ inches



Illustration

Shirley Aquatics Ltd.

Largest of the Amazon sword plants is *Echinodorus paniculatus*

in width. When treated as a bog plant, this is one of the varieties that throws a flower at the end of a 30 in. stalk. Submerged plants will give only chain propagation. To cultivate it use coarse sand with well-aged loam in a very roomy container. Reasonably soft water is preferred to hard and sunlight is necessary. In the absence of sun, the plant takes kindly to artificial light. If the temperature is on the low side, the plant will remain small. The temperature should be 65° to 88°F (18° to 30°C).

Echinodorus grandiflorus. This type will only flourish and propagate in bog conditions and there is no question of chain propagation. The leaves are large, very tough in structure, egg-shaped and have a blunt point. The flower stalk can grow to 45 inches in length. Its habitat is South America and it will grow only on damp watery pool edges. It requires a very loamy base and is a seed bearer. I am told that a peculiarity of this species is the fact that seeds can be stored dry for periods from 1 to 2 years and after then come to fruition.

Echinodorus intermedius. This species usually gets the name of dwarf plant, because of its small leaves which are lance like and elliptical. It is often mistaken for *E. brevipedicellatus*, which tends to send its runners upwards whereas *E. intermedius* sends its runners entirely horizontally forwards. One finds blunt as well as sharp points to the leaves and the plant will grow to a height of only 6 inches. Its habitat is South America generally and Cuba. For cultivation one needs a trifle more warmth than usual, and sand and aged loam. It prefers shade rather than



A chain of plants of *Echinodorus intermedius*

sunny conditions and if one restrains the runners by cutting, the plant tends to become bushy. The practical temperature should be from 75° to 85°F (25° to 30°C). If it is kept colder than this range, the plant will not succumb but merely exists without any further growth. The leaves are very brittle and extra care is required to prevent breakages.

Echinodorus longistylus. This species will propagate from seed and also gives runners when fully submerged. Its leaves are lance-like and elliptical and grow up to 9 inches in length with stalks up to 20 inches long. It requires to be given more than the usual amount of room for good growth. Its habitat is Brazil. If used as a bog plant it will not flower unless it has plenty of sunlight. Temperatures should be 65° to 80°F (18° to 27°C) but it will take lower temperatures for periods without suffering. It cannot be kept as a fully submerged plant as the larger



Echinodorus longistylus

leaves will always take their tips out of water. Soft water is a necessity.

Echinodorus martii. This is a relatively new species in Europe and comes from Brazil. It has an extremely pretty leaf which is lance-like and can be from 1 to 2½ inches at its broadest width. The leaves also have curled edges with blunt points on stalks from 2 to 4 inches long. It requires more room than usual and particularly soft water.

Echinodorus paniculatus. This, the largest of the known sword plants, is very similar to *E. brevipedicellatus* and is cultivated in the same manner. The leaves are lance-like and tend to bend slightly. They can be up to 20 inches in length and 2 to 3 inches at their broadest point.

Echinodorus radicans. This species is well known in Europe and is usually found in the southern area of the



Echinodorus radicans

U.S.A. and Mexico. The leaves are egg-shaped and are up to 8 inches in length. As a bog plant it grows to a great height and treated as an aquatic will always try to grow out of water. It requires as much sunlight as possible but will also take kindly to artificial light. If kept in a shallow depth of aquarium compost one can control the height reasonably well. Cultivation is by seeds and runners as in other species, but this plant will also give off secondary plants from the roots, which can be cut and transplanted elsewhere. This, however, only happens with older plants. The flower is white. It has erroneously been called *Sagittaria guayanensis*.

Echinodorus ranunculoides. This is often confused with *E. radicans* but is seldom found in Europe. Its habitat is North Africa and the Canary Islands. As a bog plant

its flowers can either be white or red and as an aquarium submerged plant it will take kindly to relatively cold conditions.

Echinodorus rostratus. This appears to be also a relatively new species found in the U.S.A. and the West Indies. It has a variable type of leaf from the short to long and shaped from narrow to a broad heart shape. If kept as a submerged plant it will not give off runners but, unlike most other *Echinodorus* species, will give off secondary plants from the roots, which are then transplantable. Opinions differ as to best cultivation methods and suggestions range from a compost mixed with peat to a pure sandy compost. With the latter one requires plenty of base nourishment to promote proper growth. Soft water is preferred, with plenty of natural light. If the plant grows too large one need only cut off the light supply. This is also one of the many types of plants which do better with a 'quiet' period, instead of being required to look at its best for 365 days a year. The flower is white and the leaves are nearly transparent.

Echinodorus tenellus. This species is also sometimes confused with *Echinodorus brevipedicellatus* and can be kept in warm as well as coldwater conditions. It is usually regarded as one of the dwarfs as it grows only 4 to 5 inches high. It also tends to have grass-like leaves instead of the more substantial forms of the other species. If kept in tropical conditions as a submerged plant it needs plenty of sun and a growing medium of fine sand mixed with peat. When conditions suit it, it will propagate very rapidly with runners to give a carpet-like effect. The flower is white.

Thus it is seen that *Echinodorus* plants will easily adapt to varying conditions. One should always cut back the larger leaves to promote healthy growth, and larger plants are easily divided. *E. intermedius* is rather more brittle than the others, but each type should be carefully handled. Various shades of green are found in the species, with some of the leaves being translucent.

You might now ask what one does with the seeds collected from flowers. Lay them firstly in wet sand, and not until the first leaves appear are they to be planted in an aquarium.

I would also suggest that when breaking a chain the new



A mass of pigmy chain sword plants (*Echinodorus tenellus*)

plants should not be planted in their home aquarium but put into new containers as plenty of room is a necessity. How does one handle a chain? This question has often been posed and unsuccessful attempts have been made to root a chain which has a 30 degrees angle (the usual angle, although sometimes one gets an angle of 45 degrees). My advice is to leave well alone. When the young plants are good and ready to find a root hold in the compost, the angle will decrease slowly to 15 degrees and then further downwards until the chain is horizontal. Nature has done its work for you, and your exasperation at trying to pin down a chain of anything up to 12 plants is totally unnecessary.

The Black-line Tetra *by* M. J. PARRY

THE black-line tetra (*Hyphessobrycon scholzei*), native to the lower reaches of the Amazon, is often recommended to the beginner as the first egg-layer to breed. This is, indeed, good advice, breeding being accomplished in a manner applicable to many members of the large characin family.

The basic body colour of the fish is a whitish silver, with a broad black line extending from just behind the gill plate to the caudal peduncle, where it edges into the tail. An adipose fin is present. Maximum length of this species is 2 inches.

Probably the greatest prejudice against keeping this fish is its reputation of being a fin-nipper. This complaint in many instances is entirely justified, though by no means incurable. Provided that care is taken to restrict the fish to a carnivorous diet, and not to tempt it with the long flowing fins such as those of the angel fish, no harm will result.

Breeding is easily accomplished with adult fish. Although there are no obvious outward sexual differences females can be easily recognised by their plumper appearance against the slimmer male. Both fish should be separated

for about 7 days, and fed on lavish amounts of white worm, *Daphnia* and *Tubifex*. The breeding tank should be set up so as to include neutral or preferably acid water, pH 6.8-7.0. It should be well planted with anchored bushy plants such as *Elodea densa*, hornwort, *Nitella* etc., and be maintained at a temperature of 80°F (27°C). Both fishes should be introduced into the tank late at night in order that they may spawn early next morning. This is preceded by vigorous chasing by the male, resulting in the scattering of adhesive eggs by the female, which are immediately fertilised. Upon termination of spawning both parents should be removed to separate quarters as they are avid egg-eaters.

The eggs, which will be found adhering to the plants, hatch within 24 hours, the fry becoming free-swimming on the fourth day, after the absorption of their yolk-sac. Feeding can commence with the normal first foods of Infusoria or yolk of egg. Newly hatched brine shrimp should be provided as soon as possible, usually after the fifth day. On this diet the fry grow rapidly before moving to the next stage of finely sifted *Daphnia* followed by chopped *Tubifex* or white worms.

A Surprise Spawning

by P. E. PAVEY

THE first pair of dwarf gouramis I bought were about three-quarters grown. I had no intention of trying to breed with them straightaway, and so put them into my large community tank (temperature 80°F, 27°C), which frankly at that time had been getting far too much light and was green with algae.

The gouramis, though shy, settled down well. Several weeks later I was away for a few days and consequently did not see the large and beautiful nest of *Riccia* and bubbles which the male gourami constructed in a far corner of the tank. Nor did I see him become a blaze of blue and red—a flashing jewel of a fish. Returning home, however, and lifting up the hood of the tank, I did see, to my surprise, numerous dark specks just beneath the surface of the water, specks that resembled nothing so closely as fine tea dust. These the male gourami was hastily collecting in his mouth and returning to the safety of his nest.

As gently as possible I removed the other fish, nearly all of them incidentally much larger than the male gourami! When 4 days later not all his ingenuity could keep the fry within the confines of his nest, I removed him, too.

Incredibly tiny were those dwarf gourami fry. Even the slipper animalculae, *Paramecium*, which I had discovered in a jar of old flower water (chrysanthemum water actually) and put into a lettuce infusion, were too big for them at first. However, I continued, for the first 2 weeks, to tip jars of this in. Other food, I suspect, was being naturally produced in the tank. The excessive light had produced the floating algae, and the *Riccia* must have harboured a host of minute Protozoa. At any rate the fry survived. Gradually they were able to take micro worms, finely chopped *Tubifex* and powdered dried food. Altogether I raised about a hundred dwarf gouramis.

On every occasion when I put the male and female together they spawned. The male's colours would glow instantly, and he would start to build his nest. The pair, in typical gourami fashion, would embrace and roll over, and their eggs floated up into the nest. The male would then take over, and I would remove the female.

However, there were occasions when the fry after a few days would dwindle disappointingly in number. One reason for this, I believe, was the draught caused whenever the hood of the tank was raised. Baby dwarf gouramis simply cannot endure a rush of cool air. So I kept a piece of blanket over the hood and never lifted it unnecessarily.



Photo:

Dwarf gourami

L. E. Perkins

Always I found that the fry thrived best in a tank where excessive light had produced a natural greenness.

One very important thing to remember is that dwarf gouramis, being labyrinth fish, must the instant they feel the need for it break the surface of the water and fill their labyrinth organs with air. If they do not do this they will never swim properly. So the surface must be kept clean. If a skin should form, wipe it away by drawing a sheet of clean newspaper across the surface. It is wise, too, once the fish are about a quarter of an inch in length, to reduce the level of the water. A somewhat tricky job, but it does help the baby fish when they make that first crucial dash for air.

Easy to spawn and, once feeding, easy to rear, surely there are few lovelier or more gentle fish than the dwarf gourami.

Air Transport of Fishes

RECOMMENDATIONS on how to transport live tropical fishes, amphibians and invertebrates successfully by air are given in the newly published Part 9 of the B.S. 3149 series of standards, which makes *Recommendations for the carriage of live animals by air*. This new addition to the series deals in separate sections with the transport of goldfish, tropical fishes, the live eggs of trout and salmon, frogs, toads, newts and salamanders, shellfish and honeybees. Each section covers in detail

the packaging of animals, labelling of containers, stowage and care during transit and treatment on arrival. Copies of B.S. 3149, Part 9 *Fish, amphibians and invertebrates*, may be obtained from the British Standards Institution Sales Branch, 2 Park Street, London, W.1, price 10s. (postage extra to non-subscribers).

A Merry Christmas
to all our Readers

from the Editor and Staff of *The Aquarist*

Stocking the Philatelic Aquarium

by A. G. K. LEONARD

WOULD you pay £75 for a tiger barb that had lost its black markings? The aquarist might not be interested, but it would be a different matter with the philatelist wishing to have a rare variety of the current 4 cents stamp from Singapore, one of the series depicting fishes found in Malayan waters (described and illustrated in *The Aquarist*, September, 1962).

The stamp should have been printed in black and orange-red, but somehow the two left-hand vertical rows of one sheet—printed by a leading British specialist firm who do not often make a mistake—had the black colour omitted, thus creating the 20 strange specimens that a Surrey dealer acquired and is offering at the price mentioned.

The aquarist wishing to form a colourful collection of stamp miniatures of tropical and other fishes need not count his pounds, however, for there are dozens of attractive designs available from all over the world at the much more modest cost of a few pence each. Suitably arranged and displayed, either in an album or mounted in frames as a wall decoration, these can provide a great deal of interest and pleasure, so that it is appropriate to survey some of the latest issues that have appeared since my previous article was published.

A different kind of stamp error is provided by the lowest value of the set with which Trinidad and Tobago acclaimed the achievement of independence on 31st August, 1962. This was officially described as an underwater picture of the Buccoo Reef, "a natural aquarium where thousands of multi-coloured fish may be seen swimming gracefully between the coral gardens", but it later transpired that the design derived from a painting hanging behind the bar of

the Hotel Normandie, Port-of-Spain, commissioned 8 years ago from a local artist Mr. Carlisle Chang. He had never been to the Buccoo Reef, or anywhere under the sea, and had based his picture on illustrations in various geographical magazines of fishes frequenting Far Eastern rather than Caribbean waters!

Much more authentic are the fine studies of Red Sea fishes offered by two quartets from Israel, released at the end of 1962 and 1963. Modern Israeli stamps are outstanding for their artistry and fine multi-colour printing, and these two sets must rank among their best.

The subjects of the first set were *Hemiochus acuminatus*, the pennant coral fish, the butterfly fish (*Chaetodon bonula*), *Holocanthus imperator*, the angel fish and *Pterois volitans*, the fearsome-looking lion fish, best-known of all scorpion fishes, which one writer has aptly called a "gaudy little nightmare". The last-named has also been depicted on a recent issue of Monaco, and another lion fish can be seen on a stamp from French Polynesia, released 2 years ago, also on one of the latest designs for the New Hebrides.

Israel's second fish set included a picture of the related *Pterois radiata*, the showy butterfly fish (*Pomacanthus imperator*), an orange-striped trigger fish (*Balinitapus undulatus*) and *Priacanthus hamrur*, called big-eye.

Boosting themselves as "the enchanted isles of the Indian Ocean", the Maldives issued a series of stamps early in 1963 depicting some of the tropical fishes that abound in the clear waters surrounding this romantic group of thousands of atolls. Designed by a Chicago artist, Robert Hegeman, they were painstakingly produced in multi-colour photogravure by a famous Dutch printer,



Group of triangular stamps from the Maldives (1963)



Israel set (1963)

in eye-catching triangular format arranged in compact sheets of eight. The eight stamps share five subjects: the butterfly fish (*Chaetodon lunula*), *Pugopites diacanthus* or angel fish, the surgeon fish (*Acanthurus leucosternon*), *Holocentrus diadem*, known as squirrel or soldier fish, and *Zanclus cornutus*, the most fantastically shaped and coloured of all marine aquarium fishes, the Moorish idol.

It also appeared on a 1963 stamp from the Wallis and Futuna Islands, whence came other miniatures of a wrasse (*Thalassoma lunare*) and *Amphiprion percula*, the hardy species often used to begin a salt water aquarium. Another clownfish, *Lutjanus argentimaculatus*, was one of the subjects of a quartet of imposing fish stamps released by Indonesia at the same time, and a few months previously Somalia had offered attractive stamp illustrations of *Lutjanus sebae*, the emperor snapper, and *Pomacanthus semicirculatus*, blue angel fish.

In the same family, *Chaetodon unimaculatus* appeared on a 1962 issue of French Polynesia and 2 years later a new series from the West African republic of Togo included a picture of the French or black angel fish *Pomacanthus arcuatus*. A companion stamp showed *Zeus faber* (John Dory), which also provided the subject for recent designs of Spanish Sahara, along with the bonita (*Sarda sarda*), indicative of the wide range of fishes that can be gathered into the philatelic aquarium.

It can now contain some 300 different species from all over the world, pictured by scores of postal authorities. They now generally recognise the powerful collecting interest in these stamps by using scientific name identification of their subjects, and catering in varying degrees for the philatelic market—especially the newer and smaller states, to whose budgets collectors' purchases make a not inconsiderable contribution.

Although marine species are more prominently represented in the stamp album, freshwater fishes offer plenty of scope to the collector, with examples coming from some unlikely quarters. North Viet Nam, for example, used a set of five in 1963 that included *Tilapia mossambica*, the Mozambique cichlid which is a little too large for the domestic aquarium, and *Ophiocephalus*, the snake head that has an insatiable appetite: hardy, cunning and a good leaper, it needs a covered tank.

(Continued overpage)



Somalia (1962)



Mongolia (1962)



Half of a sheet of eight stamps of one design (Maldives Islands, 1963)



Togo (1964)



Left to right: Indonesia (1963); North Viet Nam (1963); Spanish Sahara (1963)



Roumania (1964)



Monaco (1964) and Trinidad and Tobago (1964)

Saving Livebearer Fry

by AQUARIUS

Another stamp in the series depicts the common carp, originating in Asia but now distributed throughout the world. *Cyprinus carpio* was also featured on a Russian design of 1962 and again in 1964 provided one of the subjects of a multi-coloured half dozen from Albania showing larger freshwater fishes, also of the latest West German series, sold at a premium in aid of child welfare funds. Eight examples of fishes found in the rivers and lakes of Mongolia were illustrated on that far-off country's triangular stamps released at the end of 1962—colourfully produced by the Hungarian state printing press that was responsible for the fine miniatures of tropical freshwater aquarium fishes reproduced in *The Aquarist* in September, 1962.

Roumania is also prolific in its output of commemorative and propaganda stamps. A striking series in 1964 publicised the Constantza Aquarium with eight unusual designs ranging from the fascinatingly odd *Hippocampus* (Black Sea horse) to Danube salmon. A year before, Morocco had issued a special pair to publicise the Casa-blanca aquarium, one design including a not very good representation of *Pterophyllum scalare*, the freshwater angel fish.

One could extend this survey of philatelic fishes to include many more diverse examples from the Congo, Mauritania, several French island colonies and small sheikhdoms on the Persian Gulf—all issued during recent months—but space obliges me to conclude with the attractive dozen released by Guinea in 1964. Their subjects include *Epiplatys senegalensis*, *Hemichromis bimaculatus* and *H. fasciatus* of the family Cichlidae, noted for their complicated courtship behaviour, and three of the Cyprinodontidae or tooth-carps, *Aphyotetodon joestadii*, *A. coeruleum* and *A. gulare*, all brilliant and minnow-sized, whose eggs withstand long periods of desiccation and are offered to aquarists as "instant fish".

Stamps cannot simulate their whirling courtship patterns, but at least the philatelic aquarium is trouble-free in breeding, stocking and maintenance, offering the aquarist an unusual sideline hobby, whose scope and interest is constantly extending.

TO save livebearer fry from the hungry mouths of their parents two things are necessary: water so shallow—by this we mean not more than about 8 in. deep—that the newly born fry are only a second or two removed from the security of the plant life, and plants that in their structure and manner of growth guarantee the greatest degree of protection.

Even in a community tank it is possible to preserve the lives of many fry if the plants at the surface offer a sufficiently dense refuge of closely packed foliage. Plants such as hornwort, *Limnophila (Ambulia)* and milfoil come high on the list of fry-saving plants.

But it is no use expecting about half a dozen sprays of any plant to provide an attack-proof retreat for the fry. The plants must be in sufficient quantity to form a haven extending over several inches of surface area and little less in depth; for then among the interstices of leaves and stems the instinctively alert fry will grow apace quite untroubled by the presence of the cannibal fish beneath.

The reason for a barrier of vegetation inches wide as well as deep is to prevent the more persistent fry-eaters in a community tank from poking their snapping jaws through and above the foliage. Experience has shown that the most adept fishes in this respect are angel fish, Siamese fighting fish, large male swordtails and the fishes collectively known as panchax. In cases where it is thought best to give a female livebearer a tank to herself in which to give birth to her fry, the isolation must always be carried out when her abdomen first begins to swell. No livebearer female well advanced in pregnancy should be moved to another tank, for any shocks at this time are likely to harm her and her unborn fry.

Rockwork for the Aquarium



by BILLY WHITESIDE

ALTHOUGH aquaria can be decorated in a pleasing manner with plants alone, the addition of some rocks, suitably arranged, can produce a much more interesting and natural effect. The choice of suitable rocks to use is wide, but the point to bear in mind is that the rockwork should be of a suitable colour to blend in with the gravel in the tank. Garish colours in close proximity distract from, rather than enhance, the aquatic scene.

In making a choice of rocks one can consider natural rocks, obtained on a search of quarry, mountain or sea-shore; or one can purchase artificial rocks specially made for the purpose of aquarium decoration. Among the latter kind are those made of fibreglass. As well as being light in weight, these do not exude toxic materials which could harm fish or plants, but they are rather expensive and the colour range is limited. Being light in weight, they are an advantage to someone who lives in the centre of a city, and who does not have private transport or access to any naturally occurring rock, for they are easily obtained and transported. Anyone who has tried to transport home even a few pieces of natural stone on public transport will know just how difficult the weight of these can be to manage. Another advantage of fibreglass "rocks" is that they can be bought already shaped to fit specific tank sizes, and if these are found to be unsuitable, the "rocks" can be cut to the required shape quite easily. Gravel should be chosen to harmonise with the colour of the rocks purchased.

To keep an aquarium clean and to provide decorative rockwork, one need search no further than one's back yard. The use of coal in the aquarium has been advocated by a number of aquarists who maintain that not only does the water keep crystal clear, but the plants and fish all thrive much better under these conditions. The obvious drawback is the colour of coal, but painting can produce a finished product which, after washing, soaking and becoming coated with a light growth of algae, can be a decorative feature in any tank.

There are on the market filters which have built around them an artificial rock structure. As well as being decor-

ative, these disguise the filter, which in turn keeps the tank water clean.

Other tank decorations can take the form of brightly coloured gravel, which will certainly add a splash of colour to a tank, but unless this is wanted for its novelty value, it seems rather out of place in the tank which is trying to emulate natural conditions. Sea shells or coral are another possibility, but if these are to be used, it is better to buy them from a dealer, as all organic matter should be removed before introducing them to a tank, otherwise it could lead to fouling of the water.

Commonest of all tank decorations is natural rock. Here the choice is governed by stones which are not soluble in aquarium water and thus are excluded such stones as limestone. Impurities which dissolve may cause damage to fish or plants. My own favourites are pieces of light coloured flints, which are usually easily picked up on the sea-shore—especially after a high tide or a storm. Pieces varying in size can be chosen to fit the particular needs of the aquaria to be decorated.

Flints thus collected from the shore have the advantages of having been well soaked in the water so that any soluble impurities have been removed, and of having rough or sharp edges removed by the action of the tides. This latter point is important no matter which type of rock is included as it is possible for fish to damage themselves when frightened, if they happen to strike sharp edges. Water smoothed rocks also give the natural impression that they have been rounded by flowing water, as is natural in the streams from which a lot of our fish come. Flints or other rocks collected should be given a good scrubbing to remove growths of algae, and should be given a soaking in fresh water—a prolonged one if stones are not from sea or river. Water for soaking should be changed several times.

Finally there comes the task of siting the rocks in the tank. Gravel should be chosen, an attempt being made to get the necessary texture and colour correct. Some people delight in building little arches through which fish can swim, but unless care is taken with such arrangements, they look rather contrived; however, the arrangement rests

Continued at foot of page 162

The Pigmy Sunfish

by JACK HEMS

ONE of the most interesting of the North American freshwater sunfishes (Centrarchidae) is the peaceful little *Elassoma evergladei*. The pigmy sunfish, or dwarf sunfish, as it is commonly called, is found in the wild from North Carolina southwards to Florida, and seldom exceeds a length of 1½ inches. The laterally compressed body is quite long in proportion to its depth, and it is to be noted that unlike most of the centrarchids kept in captivity there is no lateral line.

To keep the species satisfactorily it should have a tank to itself; for when it is placed in a community aquarium it is apt to get pushed away from food, and generally upset by the other fishes' more rough and tumble habits.

The tank for a pair need not be more than, say, 18 inches long. But it should be well lighted and have dense thickets of submerged vegetation along the back and ends. An all-the-year-round temperature of 70°F (21°C) to 75°F (24°C) suits it very well (for ordinary maintenance and breeding), but a slow drop in the late autumn to an even 60°F (16°C) does no harm. In fact, some authorities say that overwintering at a rather low temperature makes for more robust health and ensures greater success in spawning. As regards food, this should be alive as, like all sunfishes and basses, *E. evergladei* is essentially carnivorous, and such things as white worms, *Daphnia* and mosquito larvae are greatly relished.

The general colour of the male varies from brown to green, jewelled here and there with flashing scales interspersed with black spots and six or seven brown to black vertical bars. The well developed dorsal, anal and rounded caudal fins are greyish, sometimes with dark bases and edges. The female lacks the sparkle and deep tones of the male, and her fins are smaller and usually colourless. At this point, however, it must be pointed out that the pigmy sunfish can change whatever colours it may be wearing to an overall muddy hue. Sometimes it will wear this drab apparel for hours or days on end to demonstrate its dissatisfaction with its surroundings or, perhaps, the quality of its water, which to really suit it should be soft and of a neutral to acid character.

E. evergladei divides its days between taking fairly frequent tours around its tank, or resting in or near the plants. As to spawning, provided the temperature (see above) and the season (spring and summer) are right, this will almost certainly follow as a matter of course. Extra activity and the donning of new colour patterns and colours are the preliminaries concomitant with the spawning act. And perhaps the most apparent changes in the appearance of the sexes at this time are the darkening of the male's body and fins, and the plumpening and reddening of the female's lower sides.

Soon there is some gentle sparring about and chasing, and then the pair settle down to the business of laying their eggs. These are usually deposited on plant leaves growing near the bottom, or in a sort of makeshift nest composed of collected plant debris. Sometimes spawning is all over



Pigmy sunfish (*Elassoma evergladei*)

in a few hours, but it is not uncommon for the fish (which do not always adhere to a strict routine) to continue spawning on and off for several days on end. It takes about 48 hours for the eggs to incubate, and about the same time or a little longer for the fry to become free-swimming. As a rule, the parent fish make no attempt to eat the eggs or fry, which should be given *Infusoria* for about the first fortnight of their existence. After that, all the regular minuscule live foods should be placed on the menu, that is to say Grindal worms, tiny *Daphnia*, brine shrimps and the like.

With frequent feeding the baby fish grow so rapidly that 3 months after hatching out they should be showing most of the markings worn by the adults. Clearly, then, in its own charmingly modest way, the pigmy sunfish has much to offer the aquarist in the way of interest and beauty.

Rockwork for the Aquarium

(continued from page 161)

entirely with the individual. As the rocks are there to offset the fish and plants, they should not distract from these, but complement them. A large piece of stone placed in the exact centre of the tank is inclined to look rather incongruous, and more pleasing results are often achieved by trying to simulate natural rock strata outcrops, with perhaps some larger rocks in each corner, graduating down to smaller ones near the centre. I find the inclusion of one or two large rocks as a focal point of interest, is more pleasing than a host of small fragments. If fish are able to swim behind a large rock and then reappear, an impression of greater depth is added to the aquarium.

To soften the line of larger rocks which are inclined to be rather harsh in outline, plants can be placed in front to break up their visual mass. A piece of cardboard, cut to the size of the tank base, is useful to try out potential ideas in arrangement until an aesthetically pleasing one is obtained. It then only remains to transfer the rocks to the appropriate position on the gravel of the tank floor. This can be done either before or after the water is added to the tank.

No matter what decorations are chosen, care should be taken to see that no small pockets are left between rocks. In these fish or excess food may become trapped, and their subsequent decomposition can be an unseen source of pollution to the whole aquarium.

our readers



write

Address letters to The Editor, *The Aquarist*,
The Butts, Half Acre, Brentford, Middlesex

Readers are invited to express their views and opinions on subjects of interest to aquarists. The Editor reserves the right to shorten letters when considered necessary and is not responsible for the opinions expressed by correspondents.

White Spot

AS a regular reader of long standing, I would like to say how much I continue to enjoy your magazine. I remember previously reading Dr. Ghadially's articles on white spot, and have enjoyed re-reading them, but I think I can now add a useful point here.

The statement with which I disagree is that it is unjustified to use methylene blue in a furnished aquarium because even in fairly weak concentrations, it kills or at least seriously damages most plants".

The point which has been missed is that the methylene blue cuts off the light to the plants, and it is this rather than any direct toxic effects which affects the plants. The answer is to use methylene blue but at the same time change the bulbs over the tank to at least double the wattage. I have done this in my fish house for years now, with complete success. The only plant I can remember losing is Indian fern, and even this has not died if it was floating.

I found that it was quite impossible, in my thickly planted tanks, to move infected fish to a bare tank without splashes and drips which risked infecting the other tanks sound about.

J. A. B. JEFFREY,
Kirkcaldy, Fife.

ONE consequence of the use of methylene blue in the treatment of white spot disease that I have found is that some fishes appear to lose their appetites whilst on the solution. Although this does not matter very much over the period of 10 days that the treatment is applied if the fishes are well nourished at the start, it does lead to losses of thin and undernourished specimens such as those newly arrived from abroad. Since it is most often these very same specimens that are infected with white spot, and therefore are in need of the treatment, methylene blue falls short of being the perfect remedy. However, despite this fault and the disadvantage of being unable to see what is going on in a tank under treatment I do not know of a more reliable way of dealing with this disease.

T. ROLAN,
Morden, Surrey.

Technique for Tropical Marines

HAVING read the above-titled article (*The Aquarist*, November), I am constrained to write in reply. While the hobbyists in Stoke are to be commended for their enthusiasm, I was surprised to read that they clean

the inside corners of their tanks with, of all things, detergent. The problems which are given by the use of the conventional tank can be obviated if one invests in a tank which has a plastic-coated frame and is glazed with Glasticon or Blackmagic. There is then no need to line the inside corners with an epoxy resin, which is toxic anyway unless very well cured. I cannot agree that their method of heating is the best way, when we have on the market today a very extensive range of thermostatic heaters, which when used properly have only the glass tubes immersed in the water. Employing their method, one would be continually worrying in case the bulb failed, or the glass bottom of the tank cracked with the heat. I wonder how they knew that it was a leakage of electricity that killed their fish? More than likely it was ill when they got it, as marine disease does not manifest itself until about 3 weeks have elapsed. At least one man in Glasgow has kept the same fish for most of 4 years. A friend has kept a butterfly (*Chaetodon vagabundus*) for a year. This is reputed to be a difficult fish to keep alive in the aquarium. One of my butterfly fish (*Chaetodon melanurus*) I have had in my tank for 6 months. I have been keeping marines for a little over 2 years. A Glasgow dealer had a wimple fish, which when imported was the size of a penny, and it grew to the size of a saucer and lived for 2 years 9 months, until its demise through a sudden change in pH. He also kept a scorpion fish on display for 9 months. As regards feeding, I think many marine hobbyists will agree that white worm should be fed only very occasionally. The fish acquire a taste for them and tend to refuse other foods. Scraped beef is best fed immediately it is scraped, and the problem of pollution does not arise if the proper amount is used. Undoubtedly the best food is mussels, raw or cooked. Algae is good as a water conditioner and as a supplementary food, but is not strictly necessary. If desired it can be grown in artificial salt, so if the hobbyists in Stoke are getting good results with their medium, why go to the bother of putting the corals or stones in real sea water to promote the growth of algae? The water does not require changing as often as they recommend, about a tenth of the tank capacity every month being sufficient, unless, of course, there are a lot of fish. If the fish are fed properly, the filter needs attention only about once a fortnight.

F. J. J. McMENAMIN,
Craigton,
Glasgow, Scotland.

British Aquarists' Festival, 1964

THE 1964 British Aquarists' Festival at Belle Vue, Manchester, has been another great success. On the Saturday there were very many visitors to the show, but on Sunday, the hall was packed out the whole time the show was open. This despite the fact that the hall was larger than ever before, being 150 yards long by about 25 yards wide. The society stands were again very attractive and the one set up by the Isle of Wight Aquarists' Society, the "Aqua Villa", although not the first prize-winner, was excellent. This entry was the only one from the south and the former club must be doubly congratulated for their enthusiasm and efforts.

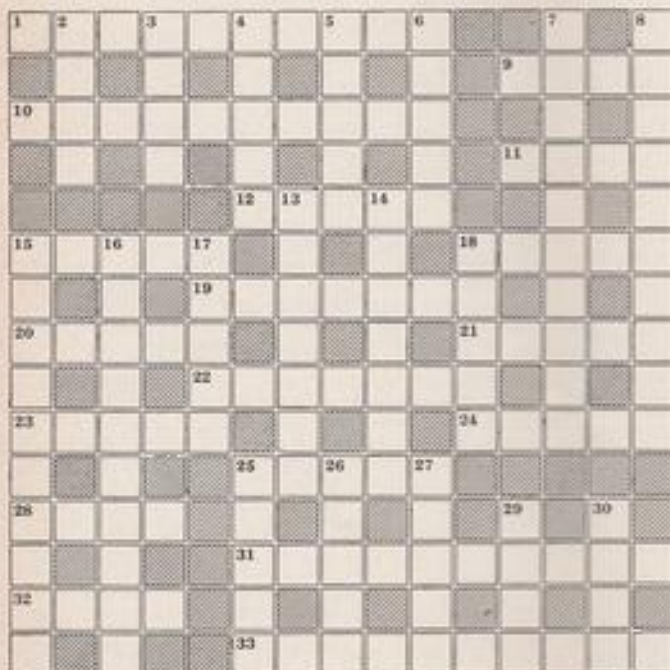
Among the tropical fishes the 'big 'uns' won the day, with splendid tinfoil barbs and oscars (*Astronotus ocellatus*) much in evidence. The best fish in the show award went to a magnificent marbled cichlid some 9 inches in length with an astonishingly bright and prominent series of red markings on its head and flanks (owner Mr. J. Mitchell, Sheffield A.S.). Best tropical egg-layer was judged to be a tinfoil barb about 8 inches long (owner Mr. K. Parks, Merseyside A.S.) and best tropical livebearer was sailfin mollie (owner Mr. M. Davies, Derby A.S.).

The coldwater fishes were much better than those on show last year. There were some very good common goldfish (best coldwater fish award went to a common goldfish owned by Mr. H. Chorlton, Northern Goldfish Society),

and the shubunkins were improved. It was good to see such grand colours in these fish, with a bright blue and bright red, jet black and slight brown and violet colours. Some of the shubunkins were a little too heavy in the body for Bristols, but they certainly had the colour that is sought after. There were no veiltails worth looking at. One would be forgiven for singing "Oh! Where have all the veiltails gone?", but this is not the only show at which they have been missing. Some years ago there used to be some grand veiltails about but good ones have been missing at shows for years.

There were a couple of good orandas which would have been more highly pointed had they had a deeper hood and not such forked tails. One small lionhead was quite good, having a very clean back and good hood. The moors were not too good. The large ones were too bronzy and the better coloured ones were small. The class for British coldwater fishes contained some quite large green tench, but it is doubtful whether it is a good idea to have such large fishes in medium sized tanks for a show lasting some 3 days. The breeders' class had two teams of very good shubunkins and in the winning team there was a beautiful little fish with the admired streamlined shape and the fine silk-like skin. This one should make a winner in any shubunkin class. Full results are given on page 165.

The AQUARIST Crossword Compiled by L. BRADLEY



CLUES ACROSS

1. *Brachydanio albolineatus* (5, 5).
9. Teller of untruths (4).
10. Are these fish fed on coal? (10).
11. Through which smaller inhabitants of the aquarium can be seen (4).
12. Pillars (5).
15. Carried in vein (5).
18. A girl in error (5).
19. See 16 down.
20. Type of barnacle found on oak trees? (5).
21. See 7 down.
22. Family to which 10 across belongs? (7).
23. This fish is *Crossostygius spilatus* (5).
24. To follow after (5).
25. To expel, be around and see her at a wedding (5).
28. A single occasion in the symphony concert (4).
31. I nab his map that is arranged for land or sea (10).
32. Not soft (4).
33. Fish given as a token of appreciation for services rendered by a waiter? (6, 4).

CLUES DOWN

2. Prepare for publication when the tide comes up (4).
3. Grows by the pond side (4).
4. Wilt (5).
5. A.B.C.D.E.F.G.A. (5).
6. French secret army is found in the desert (5).
7. Winds its way across 21 across (5, 5).
8. Common ringed serpent (5, 5).
13. Commissioned in the regular army (7).
14. Fished for the most part but wholly complicated (7).
15. *Mollanisia sphaerops* (5, 5).
- 16 & 19 across. "Scous Inn" official production of a catfish (10, 7).
17. Dace swims around the point and gives a movement to music (5).
18. To one side (5).
25. Alloy that is extremely poisonous to fish (5).
26. Drive forward the little devil before the Spanish (5).
27. The best of fish food? (5).
29. Money plant? (4).
30. Break the photograph? (4).

Solution on page 167



from AQUARISTS' SOCIETIES

Monthly reports from Secretaries of aquarists' societies for inclusion on this page should reach the Editor by the 15th of the month preceding the month of publication.

BRITISH AQUARIST FESTIVAL

BEST Fish of the Show: J. Mitchell (Sheffield).
Best Other than Best Fish of Show: Tropical
 agglayers: 1, K. Parkes (Merseyside). Tropical
 livebearers: M. Davies (Derby). Coldwater:
 H. Chorlton (Northern Goldfish). Best Society
 furnished aquaria coldwater: 1, Tyne-side 76
 pts.; 2, Northern Goldfish 76 pts.; 3, Northern
 Goldfish 70 pts. Tropical: 1, Blackpool 83 pts.;
 2, Sheffield 82 pts.; 3, Ashton-under-Lyne
 77 pts. Best individual furnished aquaria
 (tropical): 1, R. Bradley (Macclesfield) 82 pts.;
 2, G. N. Hadley (Blackpool) 81 pts.; 3, D. Carr
 (Bradford) 80 pts. Best individual furnished
 aquaria (coldwater): 1, J. H. Hood (Tyne-side)
 76 pts.; 2, L. G. Hunt (Leeds) 68 pts.; 3, E.
 Davidson (Isle of Wight) 64 pts. Best
 aquascaper: 1, Mrs. O. M. Matthews (Northern
 Goldfish) 80 pts.; 2, Mrs. M. Knowles (Sheffield)
 77 pts.; 3, Workop A.S. 75 pts. Novelty
 aquascapes: 1, Eastham and Lester (Belle Vue
 79 pts.); 2, D. A. Edmondson (Leeds) 77 pts.
 Common goldfish and comets: 1, H. Chorlton
 (Northern Goldfish) 88 pts.; 2, E. Davidson
 (Isle of Wight) 83 pts.; 3, L. Baxter (Northern
 Goldfish) 82 pts. Shalunkins (Bristol and
 London): 1, W. H. Ramsden (Northern
 Goldfish) 85 pts.; 2, J. H. Hood (Tyne-side)
 84 pts.; 3, N. S. Farrall (Northern Goldfish)
 82 pts. Moors: 1, R. Howarth (Northern
 Goldfish) 85 pts.; 2, L. Chadwick (Leeds)
 78 pts.; 3, J. Chadwick (Leeds) 76 pts. Veiltails:
 1, W. H. Ramsden (Northern Goldfish) 72 pts.;
 2, W. H. Ramsden 71 pts.; 3, R. L. Howarth
 (Northern Goldfish) 53 pts. A.O.V. fancy
 goldfish, fantails, orandas, lionheads: 1, J.
 Chadwick (Leeds) 87 pts.; 2, J. Chadwick
 (Leeds) 86 pts.; 3, H. Penhall (Ovram) 76 pts.
 Any species coldwater fish other than those
 above: 1, B. Gaskell (Northern Goldfish) 87 pts.;
 2, B. Gaskell (Northern Goldfish) 86 pts.;
 3, B. Gaskell (Northern Goldfish) 85 pts.
 Cuppies: 1, A. Hickson (Belle Vue) 81 pts.;
 2, A. Marson (Workop) 79 pts.; 3, S. G.
 Stevens (Isle of Wight) 76 pts. Livebearers
 (pairs): 1, M. Davies (Derby) 78 pts.; 2, W. J.
 Smart (Ashton-under-Lyne) 75 pts.; 3, J. E.
 Shore (Ovram) 73 pts. Livebearers (single fish):
 1, K. Parkes (Merseyside) 82 pts.; 2, E.
 Furnessough (Sheffield) 81 pts.; 3, M. Davies
 (Derby) 78 pts. Angels: 1, G. Wood (Hallifax)
 77 pts.; 2, J. Barlow (Hallifax) 75 pts.; 3,
 F. Myersonough (Accrington) 70 pts. Dwarf
 cichlids (pairs): 1, J. Derris (Workop)
 78 pts.; 2, K. Wilbraham (Ovram) 72 pts.;
 3, E. Flogier (Derby) 70 pts. Dwarf cichlids
 (single fish): 1, Mrs. M. Frith (Bradford)
 83 pts.; 2, J. P. McConville (Merseyside) 80 pts.;
 3, G. Richardson (Belle Vue) 79 pts. Cichlids
 A.O.V.: 1, J. Mitchell (Sheffield) 90 pts.; 2, A.
 Harper (Macclesfield) 84 pts.; 3, F. Mulla
 (Merseyside) 77 pts. Fighters: 1, C. Burns
 (Bradford) 80 pts.; 2, L. Greenall (Tadcaster)
 77 pts.; 3, J. Baxter (Tadcaster) 75 pts.
 Gouramis A.V. and paradise (pairs): 1, H.
 Watson (Macclesfield) 78 pts.; 2, R. Ekins
 (Blackpool) 75 pts.; 3, Mrs. M. Smith (Stretton)
 73 pts. Gouramis and paradise (single
 fish): 1, P. Myersonough (Accrington) 76 pts.;
 2, R. Wilkinson (Hallifax) 75 pts.; 3, J. E. Hulse
 (Belle Vue) 74 pts. Barbs (pairs): 1, R. Collins
 (Ovram) 80 pts.; 2, A. Frith (Bradford) 78 pts.;
 3, C. Jones (Blackpool) 77 pts. Barbs (single
 fish): 1, K. Parkes (Merseyside) 87 pts.; 2,
 K. Parkes (Merseyside) 86 pts.; 3, R. Collins
 (Ovram) 85 pts. Characins: 1, R. Collins

(Ovram) 82 pts.; 2, E. Fillings (Merseyside)
 80 pts.; 3, J. Derris (Workop) 79 pts. Carps
 and minnows: 1, W. Hughes (Belle Vue) 82 pts.;
 2, G. Green (Sheffield) 79 pts.; 3, L. Lamb
 (Hallifax) 73 pts. Catfishes: 1, D. Honour
 (Hallifax) 79 pts.; 2, J. G. Hunt (Leeds) 76 pts.;
 3, F. Partridge (Ovram) 77 pts. Egg-laying
 tooth carps (pairs): 1, D. Green (Sheffield)
 83 pts.; 2, J. Rodgers (Accrington) 81 pts.;
 3, L. Tye (Workop) 79 pts. Loach: 1, R. M.
 Hutchinson (Belle Vue) 78 pts.; 2, W. Hughes
 (Belle Vue) 77 pts.; 3, J. Moss (Leeds) 76 pts.
 Egg-laying tooth carps (single): 1, H. Swanson
 (Merseyside) 81 pts.; 2, R. Greenall (Tadcaster)
 79 pts.; 3, D. Cayen (Sheffield) 77 pts. A.O.V.
 to all above (single fish): 1, M. Davies (Burnley)
 84 pts.; 2, J. Beck (Merseyside) 82 pts.; 3,
 J. P. McConville (Merseyside) 81 pts. Breeders
 (agglayers): 1, E. Hemmingsway (Dewsbury)
 87 pts.; 2, A. Moss (Accrington) 86 pts.; 3,
 K. Ingham (Accrington) 84 pts. Breeders
 (livebearers): 1, M. Davies (Derby) 87 pts.;
 2, M. Davies (Derby) 86 pts.; 3, J. E. Shore
 (Ovram) 82 pts. Breeders (coldwater): 1,
 J. S. Hood (Tyne-side) 87 pts.; 2, J. & Hood
 (Tyne-side) 83 pts.; 3, W. H. Ramsden (Northern
 Goldfish) 78 pts. Plants: 1, C. Walker (Oldham)
 78 pts.; 2, R. Winterburn (Bradford) 76 pts.;
 3, J. Ringer (Isle of Wight) 75 pts.
 The order for the most attractive stands was
 1, Salford A.S.; 2, Isle of Wight; 3, Sheffield &
 District A.S.; 4, Workop Aquarist and Z.S.
 The Northern Goldfish and Pondkeepers'
 Society were winners with the greatest number
 of awards and the prize for the individual
 exhibitor gaining the most awards went to
 Mr. M. Davies of Derby Show Group. The
 Rosen Shield this year went to Lancashire and
 the award for the best pair of pseudotails was
 won by J. Derris of Workop Aquarist and
 Z.S.

AT the monthly meeting of the Ilford and
 District Aquarists' the main event was a
 presentation of coloured slides by Mr. H.
 Berger, on the subject of "Kill fish" by Mr.
 A. Robins of Northern Ireland.

The narrator was Mr. Vic Price, the society's
 president.

The October table show was for cichlids and
 guppies, and the winners were—Cichlids: 1,
 Mr. Bell; 2, Mr. Hollis; 3, Mr. Hollis. Guppies:
 1, Mr. Stobbing; 2, Mr. Stobbing; 3, Mr. Bell;
 4, Mr. Stobbing.

Previously the society's annual home aquarist
 competition was held and the results,
 announced at the meeting, were: 1, Mr. L.
 Smith; 2, Mr. H. Berger; 3, Mr. M. Bell.

Anyone interested in fibbing—tropical or
 coldwater—will be welcome at future meetings,
 held on the second Monday evening of each
 month. Further details may be obtained from
 the Secretary, Mr. R. Roth, 13, Dunsford Road,
 Dagenham.

A MEMBER of Thorne A.S. has made a
 suggestion which has been enlarged upon by
 other members. It is being put forward to the
 A.Y.A.S. and it is hoped will be approved, and
 adopted all over the country. The subject in
 question is the breeders class at open shows
 where at the moment there is nothing to stop
 anyone buying six fish and entering them in the
 breeders class.

If every society had its own register where
 every spawning must be entered and certificate
 issued not later than three weeks after the
 spawning. All doubt would be removed.

At their September meeting members of the
 Thorne A.S. listened to an illustrated lecture
 by Mr. Pengilly on coldwater, tropical and
 marine fish. It is hoped to see more of his
 wonderful slides at an early date. There were
 also two table shows held for large and small
 cichlids. The results respectively were as
 follows:—1 and 2, N. Sanders; 3, F. Hill,
 1, P. Powell; 2, D. Wells.

THE Kelghley and District A.S. held a show
 recently at the Kelghley and District Agricultural
 Show which was a big success. The winners
 were:—Furnished aquaria: 1, R.
 Eddison; 2, A. Asquith; 3, L. Whitfield; 4, B.
 Price; 5, A. Campbell. There is a change of
 secretary, the particulars being as follows: Mr.
 W. Coombes, 55, Leylands House, Parkwood
 Rise, Kelghley.

NEWS from the Dundee A.S. gives the results
 of the Dundee—Perth inter-club table show,
 which were as follows:—Barbs (17 Dundee; 6
 Perth): 1, Stuart Mackenzie (Dundee); 2 and 3,
 James Neuherrington (Perth); 4, John J. Mc-
 Geoghegan (Dundee). Anabantidae (13 Dundee;
 4 Perth): 1, Ian Brail (Dundee); 2, James
 Neuherrington (Perth); 3, Harry Kenke (Perth);
 4, Bernard Robertson (Dundee). Breeders—
 livebearers (2 Dundee; 2 Perth): 1, Albert L.
 Haine (Dundee); 2, Stuart Hutchison (Perth);
 3, Leslie Adam (Perth); 4, Albert L. Haine
 (Dundee). Breeders—agglayers (2 Dundee;
 2 Perth): 1 and 2, Peter N. Greening (Dundee);
 3, Mrs. M. Waddison (Perth); 4, James
 Neuherrington (Perth). Best fish on show:
 Stuart Mackenzie (Dundee).

The programme was provided by the Northern
 Island Federation and was a slide show entitled
 "Tetra's". Both the slides and the
 accompanying script evoked favourable comment
 by both Societies.

THE results of the Bradford and District
 A.S. open table show and members show were
 as follows:—

Open Table Show—Livebearers: 1, Mr.
 Yeaton (Aireborough); 2, Mr. Wells (Thorne);
 3, Mr. Derris (Workop A. and Z.S.). Barbs:
 1 and 2, Mr. Frith (Bradford); 3, Mr. Rodding
 (Tadcaster). Characins: 1, Mr. Hammond
 (Middlesbrough); 2, Mr. Greenwood (Brad-
 ford); 3, Mrs. Frith (Bradford). Carps and
 minnows: 1, Mr. Derris (Workop A. and Z.S.);
 2, Mr. Booth (Bradford); 3, Mrs. Bullemont
 (Nottingham). Anabantidae: 1, Mr. Duckett
 (Skipton); 2, Mr. Greenall (Tadcaster); 3, Mr.
 Holdsworth (Bradford). Fighters: 1, Mr.
 Bims (Bradford); 2, Mr. Baxter (Tadcaster);
 3, Mr. Storey (Hill). Cichlids: 1, Mr. Bram-
 mer (Workop Fishkeepers); 2, Mr. Silson
 (Workop A. and Z.S.); 3, Mrs. Frith (Brad-
 ford). Catfish/Loach: 1, Mr. Brunt (Middles-
 brough); 2, Mr. Wilson (Bradford); 3, Mr.
 Bullemont (Nottingham). Toothcarps: 1, Mr.
 Yeaton (Aireborough); 2, Mr. Greenall (Tad-
 caster); 3, Mr. Taylor (Bradford). A.O.V.: 1,
 Mr. Hooper (Bradford); 2, Mr. Greenwood
 (Bradford); 3, Mr. Machin (Thorne). Breeders
 livebearers: 1, Mr. Whitlock (Tadcaster); 2,
 Mrs. Bullemont (Nottingham); 3, Mr. Tye
 (Workop A. and Z.S.). Breeders agglayers:
 1 and 2, Mr. Hemmingsway (Dewsbury); 3, Mr.
 Tye (Workop A. and Z.S.). Coldwater: 1,
 Mr. Booth (Bradford); 2, Mr. Brunt (Middles-
 brough); 3, Mr. Adamson (Rosen trees).

The special plaque and the A.Y.A.S. Diploma
 for the best exhibitor in show was awarded to Mr.
 Hemmingsway of Dewsbury with his entry in the
 breeders agglayer class of cardinal tetras
 (94 points).

Members Show Results—Livebearers: 1, Mr.
 C. R. Wilson; 2, Mr. K. Emms; 3, Mr. A. W.
 Crapps. Barbs: 1, 2 and 3, Mr. A. Frith.
 Characins: 1, Mr. H. Greenwood; 2, Mr. W. L.
 Haley; 3, Mr. C. Holdsworth. Carps/minnows:
 1, Mr. C. R. Wilson; 2, Mr. T. W. Baisey; 3,
 Mr. G. Goodison. Anabantidae: 1, Mr. K.
 Emms; 2, Mr. J. Holmes; 3, Mr. J. D. Barford.
 Fighters: 1, Mr. C. R. Wilson; 2, Mr. C. Bins;
 3, Mr. J. Holmes. A.O.V.: 1, Mr. C. R.

Wilson; 2, Mr. H. Greenwood; 3, Mr. R. Winterburn. Cichlids: 3, Mrs. M. Pirth; 2, Mr. A. W. Cripps; 3, Mr. W. L. Haley. Coldwater: 1 and 2, Mr. L. Booth; 3, Mr. P. Moorhouse. Plants: 1, Mr. P. Moorhouse; 2 and 3, Mr. R. Winterburn. Breeders livebearer: 1, Mr. R. Winterburn; 2, Mr. C. R. Wilson; 3, Mr. C. Holdsworth. Breeders egglayer: 1, Mr. K. Barnes; 2, Mr. J. R. Smith; 3, Mr. A. Pirth. Best exhibit in show: Mr. C. R. Wilson (crown loach).

AT the recent Annual General Meeting of the **Bethnal Green A.S.**, the secretary reported a steady increase in membership and hoped that the new members could be induced to stay.

Before the election of officers it was announced by Mr. A. Collings and Mr. J. Combes that they would not stand to be re-elected to office, as they felt that the time had come when new blood would be an asset to the club. The results of the election were—Chairman: Mr. L. Bestley; secretary, Mr. D. Allan, 66, St. Peters Avenue, Hackney Road, London, E.2.; treasurer, Mr. J. Hayes; show secretary, Mr. J. Wheeler; assistant show secretary, Mr. H. Chappess; committee: Mr. Collings, Mr. Palmer and Mr. Jones.

A TABLE show was held by **Portsmouth A.S.** for twin tail river and pond at the community centre. Whilst judging was taking place, Mr. Hunt gave a very interesting talk on water life. It is hoped to extend the tropical section at the open show to accommodate an extra 100 entries next year.

The table show results were as follows—Common river or pond fish: 1, W. T. Ryder (stone loach); 2, L. Saurin (trout); 3, S. Saurin (tench); 4, J. Howard (gudgeon). Golden river or pond fish: 1, L. Saurin (golden orfe); 2, J. Howard (golden orfe); 3, J. Howard (golden carp); 4, W. T. Ryder (golden carp). Twin-tailed goldfish: 1, L. Saurin (fantail); 2, L. Saurin (oranda); 3, L. Saurin (fantail).

AT the Annual General Meeting of the **Oldham and District A.S.**, the following officers were elected for 1964-1965—Chairman, Mr. A. Worrick; secretary, Mr. C. Walker, 95, Springwood Hill, Finton Hill, Oldham, Lancs.; treasurer, Mrs. E. J. Brunt; show secretary, Mr. E. Cooper; vice chairman, Mr. Barwood; funds organiser, Mr. C. Holroyd; P.N.A.S. delegates: Mr. C. Walker and Mr. C. Holroyd.

A report of good progress was given the members having had a good selection of newcomers and it was hoped that the Society could continue to build up in the coming year.

THE Hounslow and District A.S. held their final shield shows recently and the winners were as follows—A.O.V.: Mr. R. Luff. Labyrinth: Mr. B. Boulz. Characin: Master C. Smith. Barbs: Mr. Patrick. Pairs: Mr. Thorne. Breeders egglayer: Miss L. Barnes. Breeders livebearer: Mr. R. Luff. Livebearer: Mr. R. Barber. Coldwater: Mr. J. Rowlands. Best fish of the year: Mr. R. Luff. Mr. Blunt was the judge of the shows, placings in home furnished aquaria competition were: 1, Mr. J. Foley (88 points); 2, Master C. Smith (84 points); 3, Mr. B. Boulz (78 points). The highest points winners of the year were: 1, Master C. Smith (130 points); 2, Mr. H. Pratt (106 points); 3, Mr. B. Boulz (84 points). The Society now meet fortnightly on Wednesdays at the Territorial Drill Hall, Hanworth Road, Hounslow, Middlesex, the secretary is Mr. I. J. Woodward, 16, Ellerslie Road, Hounslow.

A SUCCESSFUL annual open show was held recently by **Kingston and District A.S.** The results were as follows—A.V. platy or sword-tail: 1, K. Saunders; 2, A. Nodley; 3, R. Monger; VHC: J. Stewart. A.V. mollie: 1, A. Nodley; 2, D. Ellis; 3, J. Stewart. A.V. barb: 1, Master C. Smith; 2, C. Ward; 3, J. Howe; VHC: C. Ward. A.V. characin: 1, I. Gantier; 2, A. Nodley; 3, Mrs. Bone; VHC: C. Pellerman. A.V. cichlid: 1, A. Nodley; 2, C. Ward; 3, P. Lobb; VHC: Mrs. Bone. A.V. danio, W.C.M.M. or rasbora: 1, R. Monger; 2, A. Barnes; 3, Master Smith; VHC: J. Stewart.

A.V. toothcarp: 1, R. Cleveland; 2, A. Nodley; 3, C. Stevens; VHC: C. Stevens. A.V. corydoras catfish: 1, E. Richards; 2, D. Ellis; 3, C. Stevens. VHC: E. Richards. A.O.V. catfish: 1, D. Ellis; 2, M. Richardson; 3, R. Thompson. A.V. fighter: 1, J. Howe; 2, R. A. Dove; 3, J. Howe. A.O.V. labyrinth: 1, D. Porter; 2, C. Bull; 3, C. Smith; VHC: M. Hurley. A.O.V. tropical: 1, R. Cleveland; 2, R. Dove; 3, A. Nodley. VHC: R. Thompson. A.V. goldfish: 1, W. Walters; 2, R. Longstaff; 3, C. Druce; VHC: W. Walters. Breeders tropical egglayer: 1, S. Hart; 2, D. Ellis; 3, C. Stevens; VHC: A. Hart. Breeders tropical livebearer: 1, R. Luff; 2, C. Ward; 3, R. Yexley; VHC: R. Yexley. The fancy guppy association: best male: Mr. Frazer. Best female: Mr. G. Goodall. Best breeders: Mr. G. Goodall. Best fish in show: Mr. A. Nodley (marble cichlid).

THE Hastings and Bexhill A.S. held its first inter-club table show recently. Three other Aquarium Societies took part, from Brighton, Worthing and Medway. The show proved to be a great success, and was very well attended. Mr. J. Stewart from the London Transport Society, who is an F.R.A.S. judge, was invited to judge the entrants, which were in four classes: barb, characin, labyrinth and livebearer. There was also a special class for danios entered by junior members under 16 years of age.

While the judging was taking place, Mr. Mason-Smith gave a most entertaining film show, which lasted well over an hour. It included sequences showing the mating and spawning of blue gouramis, Hawaiian mouth-brooder and Siamese fighting fish. Other subjects were South African clawed toads, stick insects and praying mantis, and a tour of the botanical gardens at Cambridge. There were also two films of general interest: the first showed some remarkable underwater shots of marine life, taken just off the coast of Malindi, a tiny African fishing village, near Mombasa. The female was a film showing the wild life of an African game reserve, as seen from the balcony of the famous Tree Tops Hotel in Kenya, the scene of the present Queen's succession to the throne.

After a break for refreshments, the results of the table show were announced. The winner of each class was presented with a silver cup with a special cup for the best fish of the show. The young winner of the danio class was awarded a prize of two young fish.

Results were as follows—Barbs: 1, C. Ward (Brighton). Characin: 1, A. J. McCormick (Hastings). Labyrinth: 1, A. J. Pelham (Brighton). Livebearer: 1, J. Sancer (Hastings). Danio: 1, S. Ward, Jun. (Brighton).

Overall points gained by clubs were as follows—1, Brighton (1,285 points); 2, Hastings and Bexhill (1,270 points); 3, Medway (1,253 points); 4, Worthing (1,249 points).

FROM Kingston and District A.S. we hear of the death recently of Mr. J. Rawlings of South Wimbledon. He was very well known in the London area, and built up a wide circle of friends and a good reputation as a hobbyist. In earlier days he was connected with the Balham club.

THE Warrington A.S. now hold their meetings in the Ring of Bells Inn, Church Street, Warrington every fourth Tuesday. Anyone interested should contact the Secretary, Mr. J. Higham, 42, Hood Lane, Sankley, Warrington.

A FINAL crowning success was achieved by the **Workop Aquarist and Zoological Society** when they won the inter-society competition by nine points. Before this fourth and last leg of the show, Workop had a slender lead of one point, but due to the fine quality of the tropical fish shown by Mr. L. Tye, who gained one first and one third, Mr. Hicles with one first, Mrs. J. Sibson with one second and Mrs. N. Sibson with one second, Workop had a final total of 35 points for the four shows. Sheffield came second with 26 points, Mansfield was third with 7 points and Chapletown was fourth with 4 points.

THE Thurrock and District Aquarists have had a busy time recently. An aqua-bazaar has been held in conjunction with the members of All Saints Parish Guild in order to raise funds for the Church. The bazaar proved to be a great success, and the sum of £217 was raised—a record for the bazaar. It is felt that the attraction of the free fish show helped considerably to achieve this result. There were approximately sixty species on view to the public plus the attraction of twelve miniature 14 x 10 x 10 furnished aquaria, which were judged not by F.R.A.S. standards but by the public who attended the bazaar. The winner was D. Durrant. Also on display were two 24 x 15 x 12 furnished tanks, one tropical, one coldwater, plus a goldfish pond.

The second part of the yearly competition with Southend, Leigh and District A.S. was also held. The result was a close run for Thurrock, 19 points to 17 points, so levelling up the scores as Southend had won previously.

The Thurrock club meet at their hall in Gypsy Lane, Grays every fortnight on Monday at 8 p.m. All new members or intending members are assured of a warm welcome.

RECENT activities of the **York and District A.S.** have included a talk by Mr. R. M. Faircliff of Tadcaster on keeping and breeding tropical fish with particular reference to toothcarps. There has been a visit to Wakefield and District A.S. for a projecting microscope lecture of aquatic insects by Mr. Mendham of Ackworth College. The result of an any variety table show was 1, Mrs. M. Turver, Wakefield (thick-lipped gourami); 2, Mr. J. Smith, Wakefield (mosaic platy); 3, Mr. D. Greenwood, York (serpae); 4, Mrs. C. Bingham, York (Australian rainbow). Mrs. Turver was presented with a plaque for the best fish. Mr. D. Dufford of Dewsbury placed the awards.

A three cornered inter-society challenge match with Staithe and District A.S. and Seaham Harbour and District A.S. in the Memorial Hall, Staithe, A. plaque for the society gaining the most points was won by Staithe with a total of 42 points, York came second with 30 and Seaham Harbour third with 6. Mr. J. H. Hurst of Staithe won a plaque for the best fish in show. Award winners for York were: livebearer: 3, G. B. Hawkyb (yellow wagtail platy). Barbs: 1, D. Greenwood (rainbow); 3, Mrs. J. Hields (chequer). Small characin: 2, R. Simmons (bleeding heart tetra). Large characin: 3, G. B. Hawkyb (Buenos Aires tetra). Carps and minnows: 3, Mrs. J. Hields (red finned dace); 2, R. Simmons (charlestin). Sharks: 1, G. B. Hawkyb (red tailed black shark); 2, Mrs. J. Hields (diamond). Anabantids: 2, G. Pygott (serp); 3, G. Pygott (3 spot). Fighters: 1 and 2, G. Pygott. Cichlids: 2, C. C. Smith (angel). A.O.V.: 3, G. B. Hawkyb (aphysosemon callisurum). Coldwater A.O.V.: 3, D. Greenwood (gudgeon).

The awards were placed by Messrs A. Watt and S. Naimish of Glasgow.

LAST month the **Didcot and District A.S.** presented a fully equipped and furnished tank to the Didcot hospital.

It was handed over by the chairman, Mr. L. Timms and was accepted on behalf of the hospital by Mr. Ben Bosley, chairman of the house committee. Several of the members, and members of the hospital staff were present and the tank will be maintained by the club.

Due to a very heavy programme, which includes a public exhibition, the club has had to increase the meetings to the first and third Wednesday each month, and the club room is still the Didcot Labour Club.

The **Portsmouth A.S.** merit award for the best tropical fish in the show was won by one of the Didcot members, Mr. Fred Hall.

THERE was a record attendance at a recent meeting of the **Weston-super-Mare and District A.S.** headquarters, when the club had as guests members of the Taunton A.S.

An inter-club table show had been arranged, with a cup provided to be competed for annually for the club obtaining the highest marks, a trophy for the best fish in the show, and medals for the winners of each of the five classes

winced. There were 76 entries, and the judge was Mr. B. Jones the well-known aquarist and lecturer of Bristol.

To mark the occasion the club had invited Mr. D. Whitley of Bristol to show the coloured movie films he has taken showing the actual courtship, spawning and breeding of various types of tropical fish. These films are remarkable, taken over a number of years, each involving months of preparation, and great credit is due to Mr. Whitley for the patience, time and care he has devoted to the project. One of the Weston members who resided in the London area for several years, and attending various conventions and clubs considered these films to be the best yet shown of the hobby.

The cup was won by Weston, while the trophy for the best fish of the show was taken by Mr. P. Sherring of Taunton with a ramerey. Winners of the various classes were: Labyrinth and cichlids: 1, P. Sherring; 2, J. B. Evans; 3, D. Binding; 4 and 5, S. Clarke. Guppies: 1, 2, 3 and 5, D. Quick; 4, B. J. Evans. Barbs: 1, D. Cronin; 2, S. Clarke; 3, P. Gibbon; 4, P. Barnes; 5, D. Quick. A.O.V. egg-layers: 1, J. B. Evans; 2, D. Binding; 3 and 5, D. Cronin; 4, D. Quick. A.O.V. livebearers: 1, J. B. Evans; 2 and 4, D. Quick; 3, P. Sherring; 5, D. Cronin.

The Weston Club meet at the Victoria Bowling Club in the Boulevard on the fourth Tuesday of each month. Visitors are welcome and can be assured of an interesting evening.

THE winner of the points trophy for best average of all table shows of **Bury and Prestwich A.S.** for 1963-64 was the chairman, Mr. F. Campbell. Recent table show results are:—Guppies: 1 and 2, Mr. F. Campbell; 3, Mr. A. Buckley. A.O.V. livebearers: 1, Mr. Ingles; 2, Mr. Huntsback; 3, Mr. Disherwood. A.O.V.: 1, Mr. Collinge; 2, Mr. Huntsback; 3, Mr. Ingles.

At the next meeting, which it is hoped will be attended by Heywood Society, there will be a lecture by Mr. Parrington of Lancashire breeders on the subject of fancy guppy breeding.

IN conjunction with the Tottenham Borough Council, the **Tottenham and District A.S.** held its open show of tropical fish recently. The response both from the public and aquarists exceeded the expectations of the organisers, and the entries, totalled 444. The judges were Messrs. Creed, Mealand and Russell Holland.

His Worship the Mayor of Tottenham, Mr. Protheroe, after being conducted around the show, presented the first prizes, notable among the prize winners being T.D.A.S. chairman, Mr. L. F. Clements, whose B. Schwarfeldi took the award for best fish in show with 90 points and Mr. C. A. Stevens who took the F.R.A.S. award with his team of Norho Palm-quisti, which were the best of both breeders classes. Successful in club furnished aquaria, the Fancy Guppy Association (Edmonton and District), took the T.D.A.S. inter-club trophy, with a tank planted mainly with cryptocorynes and the fish being an excellent team of fancy guppies. Walthamstow and District A.S. were second with a coldwater tank and Bethnal Green A.S. were third in a class of eleven. Results:—Club furnished aquaria: 1, F.G.A. (Edmonton); 2, Walthamstow; 3, Bethnal Green A.S. Individual furnished aquaria: 1, Mr. D. Nutt; 2, Mr. K. Hobson; 3, Mr. J. Clarke. Egg-layers breeders: 1, Mr. C. A. Stevens (Norho Palmquisti); 2, Mr. E. W. Richens (C. Palatus); 3, Mr. Hart (tiger barbs). Livebearer breeders: 1, Mr. W. Patrick (red plaxies); 2, Mr. J. Stewart (mollies); 3, Mr. R. Elsdon (Wahaden sword). A.V. guppy: 1, Mr. H. Champness (pinstail); 2, Mr. W. Webb (delta); 3, Mr. T. D. Smith. A.W. sword: 1, Mr. A. Nottley (Simpson); 2, Mr. R. Elsdon (uxedo). 1, Mr. J. Mosey (red). A.V. play: 1, Mr. H. Champness (varietal); 2, Mr. B. Lupton; 3, Mr. M. Dixon. A.V. mollie: 1, Mr. A. Nottley (black); 2, Mr. J. Stewart; 3, Mr. G. H. Jennings. A.V. characin: 1, Mr. L. F. Clements (M. Roosevelt); 2, Mr. C. A. Stevens (A. Annostomus); 3, Mr. S. Bone (banded head-stander). A.V. barb: 1, Mr. L. F. Clements

(swanfield); 2, Mr. L. F. Clements (swanfield); 3, Mr. A. W. Collins (rosy). Damio, rasbora or W.C.M.M.: 1, Mr. G. Bandle (elegans); 2, Mr. W. Webb (D. Davario); 3, Mr. P. Barnes (R. Bergperennis). A.V. fighter: 1, Mr. D. Nutt (red); 2, Mr. K. Nutt (red); 3, Mr. P. Knight (red). A.O.V. labyrinth: 1, Mr. R. Cleveland (ophromemus); 2, Mr. K. Nutt (kissing gourami); 3, Mr. M. W. Smith (jeeri). A.V. cichlid: 1, Mr. H. Sumner (Jack Dempsey); 2, Mr. A. W. Collins (synisred); 3, Mr. P. Lobb (A. Agassiz). A.V. Catfish or loach: 1, Mr. S. Bone (C. Puscatus); 2, Mr. R. Elsdon (upside down); 3, Mr. Greenhalf (B. Horse). A.O.V. tropical: 1, Mr. H. Parmoux (black shark); 2, Mr. R. Cleveland (Siamese tiger); 3, Mr. W. Barker (red tailed black shark).

NEW SOCIETY

A NEW club has been formed in Redhill, to be called the **Reigate and Redhill Tropical Fish Association**. The following officers have been elected: Chairman, Mr. A. R. P. Barley; secretary, Mrs. S. Packman; treasurer, D. Crowhurst. For the remainder of 1964 meetings will be held fortnightly and from January, 1965 they will be held weekly at Albury Manor, County Secondary School, Meritham. Except under special circumstances meetings will be held on Monday evenings. All communications and inquiries should be addressed to Mrs. S. Packman, 107, Prince Albert Square, Earlswood, Redhill, Surrey.

AS the **Loyne A.S.** usual meeting night coincided with bonfire night members met on the previous evening instead and heard a very interesting talk from their president, Mr. Eric Somers of Windermere. He spoke on aquarium plants, discussing in great detail such points as the most suitable areas of an aquarium for the different plant varieties. He also mentioned planting and propagation techniques.

DURING the past few weeks the **Independent A.S.** has been very active with fish-shows and lectures. A miniature furnished aquaria competition and an inter-club table show proved to be highly gratifying to organisers and competitors alike.

The furnished aquaria in miniature, which was being tried for the first time, had approximately one dozen entries and members were amazed at the originality shown. Tanks 10 x 8 x 8 were supplied on the night, and owing to the smallness of size this called for some ingenious methods in plant and rock planning, not to mention the number and selection of fish. After some highly critical but good judging on the part of Mr. F. Riddle who incidentally passed on his comments to all participants, Mr. F. Caffell was judged the winner with a fine entry of black mollies in his tank.

The second interesting meeting comprised a table show and a talk on fish-house construction given by Mr. F. Tomkins. This talk helped to iron out any queries that prospective builders may have had, and brought to light a few useful ideas to help those with houses already in operation. Results of the table show were as follows:—A.O.V. catfish: 1, Mr. F. Tomkins; 2, Mr. R. Giles; 3, Mr. F. Caffell; 4, Mr. J. Kettle. Mollies: 1, Mrs. M. Caffell; 2 and 3, Mr. J. Clarke; 4, Mrs. M. Caffell. Coldwater breeders: Mr. J. Clarke (one entry only). Tropical breeders: 1, 2 and 3, Mr. F. Tomkins. Plant class: 1, Mr. J. Kettle; 2, Mr. F. Tomkins; 3, Mr. J. A. Chapman.

THE November meeting completed the first half-year for the **Coalville and District A.S.**, which since its inception in June had made considerable strides towards becoming one of the leading societies in the Midlands. Membership of about 25 at the inaugural meeting has now increased to 62 and so much interest has been caused by the society that many members are from well outside the Coalville area. During the first six months, a varied programme has been enjoyed, including participation in inter-society and open shows, and a monthly newsletter which is causing a great deal of comment

in other societies is being produced. Several outings to various destinations have been held and the society has established firm friendship with other Midland societies. Events which the society are now looking forward to are the home aquaria competition, an outing to the British Aquarists' Festival at Belle Vue, and a Christmas social evening.

At the November meeting, coloured film slides of tropical fish were shown and committee member Mr. Mike Yeomans gave characteristics of each fish. A table show, judged by vice-chairman, Mr. Alf Ings, attracted a record number of 36 entries. Winners were:—Harlequins: 1 and 2, J. A. Reed; 3 and 4, A. Taylor; White cloud mountain minnows: 1, A. Taylor; 2 and 3, J. Beet; 4, J. H. Hensley. Roy's barbs: 1 and 2, M. Yeomans; 3, H. Seal; 4, J. A. Reed. Black Mollies: 1, R. Meakin; 2, P. Stretton; 3 and 4, K. Richards. Prizes for the raffle were given by Mr. Hensley, Mr. Ings and Mr. Yeomans.

THE officers of the **Yeovil and District A.S.** for the next twelve months are: President, Mr. M. Enticott; chairman, Mr. S. Langdon; vice-chairman, Mr. G. Aston; treasurer, Mr. C. Bushell; secretary, Mr. T. C. Perry, 316, St. Michael's Avenue, Yeovil.

Meetings will continue to be held at The Elephant and Castle Hotel at 7.30 p.m. on the first Thursday in each month.

The November meeting was coupled with a coldwater table show and a 1964 coldwater breeders show. Results were as follows:—Single fish: 1, A. Nicholls (moor); 2, S. Langdon (shubunkin); 3, T. C. Perry (shubunkin). Breeders: 1, V. Collins (moor); 2 and 3, S. Langdon (shubunkin).

A TABLE SHOW for Breeders Classes Tropical and Coldwater was held by **Portsmouth A.S.** at the Community Centre Twyford Avenue.

The judge was Mr. R. Matley of Bournemouth. While judging was taking place members enjoyed an excellent talk given by Mr. J. Stillwell on Electricity in the Aquarium. He demonstrated for the benefit of new members the correct way to wire a Tropical Aquarium with equipment he brought with him. He then dismantled some equipment to demonstrate how to maintain; also repairs that can be carried out. The results of the table show were as follows. Livebearers: 1, Mr. E. Warren, 2, and 3, Miss E. Hancock. Egg-layers: 1, Mr. M. Mason, 2, Miss E. Hancock. Guppies: 1, Master M. Masten, 2 and 3, Master P. Carlyon. Coldwater: 1, and 2, Mr. W. Evans.

Crossword Solution

P	E	A	R	L	D	A	N	I	O	R	G
D	E	R	O	A	L	I	A	R			
F	I	R	E	M	O	U	T	H	S	L	V
T	D	O	E	I	L	E	N	S			
				P	O	S	T	A	R	S	
B	L	O	O	F	A	A	M	I	S	S	
L	T	A	F	F	I	N	I	S	N	N	
A	C	O	R	N	I	G	I	N	D	I	A
C	C	C	I	C	H	L	I	D	U	K	
K	N	I	F	E	E	E	N	S	U	E	
M	O	N	B	R	I	D	E				
O	N	C	E	R	M	L	M	S			
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L	O	U	S	E	T	N	A				
Y	S		S	I	L	V	E	R	T	I	P

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Black Veiltail ..	12/6 ..	Marble Hatchets ..	7/6 ..	Cherry (adult full col.)	4/6 3" ..	£10-10-0 pair
Assorted	3/- ..	Silver Hatchets ..	6/6 ..	Cammingi (adult) ..	7/6 ..		
Blue Veil Guppies ..	12/6 ..	Nanoctomus		Nigger (medium) ..	5/- ..		
Delta	12/6 Margineus	4/- ..	Nigger (Small) ..	3/6 ..		
German	Hassell	Nanoctomus Anomalus ..	5/- ..	Ember	17/6 ..		
.. males only ..	45/- each	Nanoctomus Beckfordi ..	5/6 ..	Tinfoil	5/- ..		
Lace Guppies	6/- pair	Copinia Arnaldi	7/- ..	Royal	2/6 ..		
Swordtails		Copinia Guittardi	3/6 ..	Half Banded	3/6 ..		
Red Standard	2/6 each	Prochodus Flagtail ..	60/- ..	Golden	2/6 ..		
Red Large	3/6 ..	Moenkhausia Pitteri ..	5/6 ..	Spanner G.S.	4/6 ..		
Green	2/6 ..	Aleates Loggipina	9/- ..	Clown	5/6 ..		
Albino	3/6 ..	Red Eye Characin	21/- ..	African Redeye	6/- ..		
Green Wagtail	3/6 ..	Leporelus Fredricki ..	37/6 ..	Hanatus (Red Fin) ..	5/- ..		
Red Wagtail	3/6 ..	Leporelus Fasciatus ..	37/6 ..	Arulius	4/- ..		
Tuxedo	3/6 ..	Leporelus Stratus ..	17/6 ..	Vitatus	6/- ..		
Simpsons Red	12/6 pair						
Platies		LABYRINTHS		CATFISH & LOACHES		DWARF CICHLIDS	
Red	3/- each	Siamese Fighter (males)	10/- ..	Corydoras		Kribensis	10/- & 14/- each
Black	3/- ..	Siamese Fighter	(females) 4/- ..	Hanatus (Dwarf) ..	4/6 ..	Egyptian Mouthbreeder	(adult)
Tuxedo	3/- ..	Gourami		Macropalmatus ..	10/- ..		4/6 ..
Comet Tail Yellow ..	3/- ..	Thick Lip	2/- ..	Auratus	8/6 ..	Apistogramma	
Red Wagtail	3/- ..	Dwarf	2/- ..	Palatus	6/6 ..	Agassiz	8/6 ..
Florida Blue	3/6 ..	Dwarf (adult)	5/- ..	Anous (large)	8/6 ..	Reccigi	9/- ..
Variatus	7/6 ..	Three Spot	2/6 ..	Melanotus (large)	8/6 ..	Ramereti	5/6 ..
		Oyashiro	3/6 ..	Arcuanus	10/6 ..		
Mollies		Pearl (Leeri)	3/6 ..	Giant Khuli	3/6 ..		
Liberty	4/- ..	Kissing	5/- ..	Caloric Cats 5" ..	10/6 ..	SHARKS	
Green Sailfin	4/6 ..	Honey	4/6 ..	Talking Cats	5/6 ..	Black	6/- ..
Green Lyretail	6/- ..	Paradise Fish (adult)	2/6 ..	Upside Down Cats	10/6 ..	Diamond	12/6 ..
Black Lyretail	5/- ..	Combeils	7/6 ..	Glass Cats	5/- ..	Red Fin	5/- ..
Black	3/- ..			Chinese Weather		Red Tail (v. small)	3/6 ..
Speckled	2/6 ..			Fish	7/6 ..	Red Tail (2 in.)	10/6 ..
Black Sailfin	2/6 ..			Khali Loach	2/6 ..		
Mosquito Fish	2/6 ..			Sucking Loach ..	2/6 ..	MARINE FISH	
Half Beaks	2/6 ..			Armoneri	5/6 ..	Clowns	30/- ..
				Ostoclinus Affinis ..	9/6 ..	Blue Damself	30/- ..
				Horse Face Loach ..	5/6 ..	Domino	45/- ..
				Myers (large)	10/6 ..		
				Noemochilus	3/- ..	VARIOUS OTHERS	
				Striped Loach	3/- ..	Malayan Angels ..	10/6 ..
				Corydoras Julii	10/6 ..	Bumble Bees	3/- ..
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						Burbiu Christy ..	7/6 ..
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						Leaf Fish	4/- ..
						Miliosana Durivencia	9/- ..
						Madagascar Rainbows	5/6 ..
						Australian Rainbows	3/- ..
						Glass Fish	5/- ..
						White Cloud Mountain	
						Minnow	3/- ..
						Mecynis Schreli-	
						mulleri	12/6 ..
						Blue Rainbows ..	5/6 ..
						Punctatus Head-	
						stander	25/- ..
						African Gobies ..	4/6 ..
						Hemiodus Semitaeni-	
						atus	15/- ..
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						Borneo Sucker ..	12/6 ..

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Cabomba ...	" 6/6	Cape Fear Spatterdock ...	7/-
Bacopa ...	" 6/6	Broad Leaf Amazon Plant ...	9/-
Hydrophyllum ...	" 6/6	Cellophane Sliced Plant ...	9/-
Red Ludwigia Tenais ...	" 6/6	Madagascar Lace Plant ...	15/6
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Water Wistaria ...	" 2/6	Aponogonon Ulvaceous ...	3/6

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The Reading Aquarist
64, King's Road, Reading
Telephone: Reading 53632
E.C.D. Wednesday. R. C.T.P.A.A.

BUCKINGHAMSHIRE

Grange Pet Stores
Well Street, Buckingham
Telephone: Buckingham 3216
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CHESHIRE

Grassby, Joe, F.R.H.S.
"The Glen" Fisheries, Mobberley, Nr. Knutsford
Tel.: Mobberley 3272 W. C.T.P.A.A. R.&A.

DEVON

Plymouth Tropicals
127, North Road, Plymouth
Telephone: Plymouth 62663
Closed Wednesday. R. C.T.P.A.A.

DURHAM

The Fish Bowl
Burdon Road, Sunderland
Telephone: Sunderland 71026
E.C.D. Wednesday (All day). R. C.T.P.A.A. R.&A.

Metcalf, G. R.
187, Northgate (near Minorities Garage)
(On main A.1 road) Darlington
Telephone: Darlington 5991
E.C.D. Wednesday. R. C.T.P.A.A. R.&A.

Powell, M.C.
The Honey Pot,
Claypath, Durham City
Telephone: Durham 2108
E.C.D. Wednesday. R. C.T.P.A.A. R.&A.

ESSEX

Goodmayes Aquaria
Shaftesbury Parade, High Road, Chadwell Heath
Telephone: Goodmayes 2594
E.C.D. Thursday. R. C.T.P.A.A.

Skilton, C. J., Aquarist
"Ridgeway", 139, Galleywood Road,
Chelmsford
Telephone: Chelmsford 56878
E.C.D. Saturday. W. C.T.P.A.A.

GLOUCESTERSHIRE

Patricia Preece (Prop. Mr. B. R. James)
10, Suffolk Parade, Cheltenham
Telephone: Cheltenham 24949
E.C.D. Wednesday. R. C.T.P.A.A. R.&A.

HAMPSHIRE

Arundel Aviaries & Fisheries
241/243, Arundel Street, Portsmouth
Telephone: Portsmouth 20047
E.C.D. Wednesday. R. C.T.P.A.A. R.&A.

Bridgemaury Pet Stores

56, Gregson Avenue, Gosport
Telephone: Fareham 4781
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Wingate Zoological Supplies

7, Market Street, Winchester
Telephone: Winchester 2406
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HERTFORDSHIRE

Cura, L. & Sons
Water End, Hemel Hempstead
Telephone: Water End 44
E.C.D. Saturday. W. C.P. R.&A.

KENT

Kingsfisheries Aquarium
138, Croydon Road, Beckenham
Telephone: Beckenham 3716
E.C.D. Wednesday (all day). R. C.T.P.A.A.

Medway Aquariums
314, Canterbury Street,
Gillingham
Telephone: Gillingham 52158
E.C.D. Wednesday. R. C.T.P.A.A.

Sherwood Pet Stores
(Proprietors, Fairbairns Aquaria, Ltd.),
252, Sherwood Park Avenue, Sidcup
Telephone: Bexley Heath 7217
E.C.D. Thursday. R. C.T.P.A.A. R.&A.

LANCASHIRE

Hornby's
Trafford Bar, Old Trafford,
Manchester, 16
Telephone: Trafford Park 2989
E.C.D. Wednesday. R. C.T.P.A.A. R.&A.

Liverpool Aquaria Company
23, Sir Thomas Street, Whitechapel, Liverpool, 1
Telephone: Central 4891
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LONDON (East)

Wade Aquatics
333, High Street North,
Manor Park, E.12
Telephone: Grangewood 6333
E.C.D. Thursday. R. C.T.P.A.A. R.&A.

LONDON (North)

Philip Castang Ltd.
75, 91, 93, Haverstock Hill,
Hampstead, N.W.3
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Gould, K. T.
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Wood Green, N.22
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LONDON (South)

Fairbairns Aquaria, Ltd.
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South Western Aquarists
2, Glenburnie Road, Trinity Road,
Upper Tooting, S.W.17
Telephone: Balham 7334
E.C.D. Wednesday. WR. C.T.P.A.A. R.&A.

Tachbrook Tropicals Ltd.
244, Vauxhall Bridge Road, Victoria, S.W.1
Telephone: Victoria 5179
(Open all week except Sundays).
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LONDON (West)

Aquapets
17, Leeland Road,
West Ealing, W.13
Telephone: Ealing 2748
E.C.D. Wednesday. R. C.T.P.A.A. R.&A.

Owen Reid's, Aquarium Dept.
12, Spring Bridge Road, Ealing Broadway, W.5
Telephone: Ealing 3259
E.C.D. Wednesday. WR. C.T.P.A.A. R.&A.

NORTHAMPTONSHIRE

The Aquarium
192, Wellingborough Road,
Northampton
Telephone: Northampton 34610
E.C.D. Thursday. R. C.T.P.A.A.

The Pet Shop
120, Kettering Road,
Northampton
Telephone: Northampton 38841
E.C.D. Thursday. R.C.T.P.A.A.

OXFORDSHIRE

The Goldfish Bowl
9, East Avenue, Cowley Road,
Oxford
Telephone: Oxford 41825
E.C.D. Thursday. W.R. C.T.P.A.A.

STAFFORDSHIRE

Walsall & Wolverhampton Aquatics
46, Stafford Street, Walsall and
147, Horsley Fields, Wolverhampton
Telephone: Walsall 21783 and Wolverhampton 24147
E.C.D. Thursday. W.T. AA. R. C.T.P.A.A. R.&A.

SURREY

Aquapets
1, Grand Parade,
Tolworth
Telephone: Elmbridge 0678
E.C.D. Wednesday. R. C.T.P.A.A. R.&A.

Thameside Tropicals and The Pet Shop
Brassey House, New Zealand Avenue,
Walton-on-Thames
Telephone: Walton 24076 R. C.T.P.A.A. R.&A.

SUSSEX

Dowding, Conrad A.
1, St. John's Terrace,
Lewes
Telephone: Lewes 3970
E.C.D. Wednesday. R. C.T.P.A.A. R.&A.

Preston Aquarium
44, Beaconsfield Road, Brighton
Telephone: Brighton 681602
(Open all week). R. C.T.P.A.A.

Regency Aquaria (Prop. R. A. Bassett)
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Brighton
Telephone: 29940 R. C.T.P.A.A. R.&A.

WARWICKSHIRE

The Coventry Aquarist (Prop. W. Dymond)
43, Melbourne Road, Earlsdon, Coventry
Telephone: Coventry 72772
E.C.D. Thursday. WR. C.T.P.A.A.

Fanday Aquaria
Fanday House, 129, Stratford Road, Sparkbrook,
Birmingham
Telephone: Victoria 3537
E.C.D. Wednesday. WR. C.T.P.A.A. R.&A.

WORCESTERSHIRE

The City Aquaria, Bird and Pet Supplies
(Proprietor: Mrs. M. Hemming)
34, Friar Street (opposite Union Street), Worcester
Telephone: Worcester 22005
E.C.D. Thursday. R. C.T.P.A.A. R.&A.

YORKSHIRE

The Corner Shop (Prop. J. Wilde)
526, Abbeydale Road, Sheffield, 7
Telephone: Sheffield 54172
E.C.D. Thursday. R. C.T.P.A.A. R.&A.

Victoria Aquatics
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SCOTLAND

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continued on page 22

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