

# The Aquarist

and Pondkeeper

NOVEMBER 1965



MONTHLY  
Vol. XXX No. 8

**TWO SHILLINGS AND SIXPENCE**

## 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

POLISHED STAINLESS STEEL		
	Frames	Aquariums
24 x 15 x 12	£ 7 7 0	£ 9 9 0
30 x 15 x 12	£ 8 8 0	£ 11 11 0
36 x 15 x 12	£ 10 10 0	£ 13 13 0
48 x 15 x 12	£ 13 13 0	£ 21 0 0

### DISTRIBUTOR OF—

- McLYNN'S FISH FOOD
- ES-ES PRODUCTS
- ELECTRICAL AND GENERAL
- WATER LIFE, AQUARIST, DITCHFIELD'S AND T.F.H. BOOKLETS
- REJECTORS, SEDIJETS, AND MAINTENANCE EQUIPMENT
- PROCKTER, SUMMIT AND STAR PUMPS
- CONSTAT THERMOSTATS
- AQUAFERN AND COLOFERN PRODUCTS
- HYFLO PRODUCTS
- LIVERINE PRODUCTS
- STOKES FOUNTAIN
- WINDMILL PRODUCTS
- ROCK GRAVEL AND STRATA ROCK WORK
- STUDENTS' MICROSCOPES
- ALL FEEDING AND AERATING APPLIANCES
- MERCURY, SPIRIT AND DUMPY THERMOMETERS
- STUART TURNER WATER PUMPS
- ZOUBEKO AND BIKO PUMPS
- VI-FIT FISH FOOD
- BLACK MAGIC GLAZING COMPOUND
- GLASTICON '30' AQUARIUM SEALER
- AQUAMASTA GLAZING COMPOUND
- LIQUIFRY AND INTER-PET PRODUCTS
- FIBRE GLASS PONDS
- OTTER WATERFALL AND FOUNTAIN KITS

Angle Iron Aquariums, Frames and Stands a speciality.  
Odd sizes made to order, painted any colour, guaranteed square and free from welds. Stove enamelled Corner Bows, Bow Fronts and Wrought Iron Units.  
Half Carriage Paid on these items.

Retail Price List 6d Inc. Postage  
Wholesale List to bona-fide Traders on application  
Premises closed Sunday and Monday throughout the year.

## WALTER R. SMITH LTD.

39 Tib Street and 16 Whittle Street  
(Off Tib Street)

Manchester 4

Telephone: Deansgate 2961 and 2529

## M. & R. (DOG-FISH) LTD.

presents



Over 120 varieties including Marine Tropicals on show and for sale. We are Direct Importers of Tropical Fish. Decorate your tank with 2,000 year old wood—stocked only by us. Fish for personal shoppers only.

466 PAISLEY ROAD WEST, GLASGOW, S.W.1

Telephone: BRDX 3615

Open Sundays 11 a.m.—2 p.m.



## PHILLIPS fish food

Fine Grade for Tropicals and  
Coarse Grade for Cold-water Fish\*

Extra high in protein and rich in vitamins and minerals, Phillips Fish Food contains dried shrimp, daphnia, meat meal, white fish meal, alfalfa, milk powder, cod liver oil, wheaten cereal and yeast, scientifically blended to provide a well-balanced, nourishing food.

For all Cold-water Fish - - 1/3d  
For Tropicals - - 1/6d



\*Phillips Cold-water Fish Food contains

**SAPROLEGNIL**

to protect against the ravages of "cotton wool" fungus.

PHILLIPS YEAST PRODUCTS LIMITED, Park Royal, London N.W.10

## Ideas for Christmas

**NEW!**

### **EXOTIC AQUARIUM FISHES**

by WILLIAM T. INNES

A classic in the Aquarium World—The ideal present for  
beginner and expert.

19th Edition      **Price 63/-**

### ***The Swirl Away***

Aquarium Vacuum Cleaner (cleans your aquarium at the touch  
of a switch). Powered by U11 torch batteries. Highly efficient.

Standard model 46/8

Super model 56/8

Spare disposable bags 4/- per box

with more powerful motor

### **The GRO-WEL Bubble-up Filter**

The outstandingly successful new filter

Filters up to 10 times as much water as an ordinary filter—the answer for  
your large aquarium. Works off an ordinary air pump.

**Price 35/-**

**Remember!** *Liquifry is the ideal first food for baby fishes*

Liquifry No. 1 for Egg-layers      **2/6 per tube**  
Liquifry No. 2 for Live-bearers

**A few drops a day is the Liquifry way!**

Please write for details of these and many other quality products

**INTER-PET** 18 Church Street - Dorking - Surrey

Sales Division of Liquifry Co. Ltd.

Testimonials prove that  
**IT PAYS TO BUY  
WINDMILL  
PRODUCTS**



"WINDMILL"  
HAND REJECTOR  
AQUARIUM  
CLEANER

Complete with  
Hand Bellows

15/- each



"REGENT"  
INSIDE  
FILTER

Designed for  
easy cleaning

10/- each

"WINDMILL"  
AIR REJECTOR  
CLEANER

will work  
connected to  
any make of  
Aerator

10/- each



"WINDMILL"  
BREEDING  
TRAPS

Beautifully  
Designed and  
Constructed

15/- each

RETAIL ENQUIRIES FROM  
ALL LEADING WHOLESALERS

## Tried, Proven and Tested

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 coactively 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 saws. 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

Pamphlets willingly sent on receipt of 3d. postage

## WINDMILL PRODUCTS

24 VAUXHALL BRIDGE ROAD, LONDON, S.W.1

Telephone: Victoria 3179

## TACHBROOK TROPICALS

244 VAUXHALL BRIDGE ROAD, LONDON, S.W.1

Telephone: VICTORIA 5179

# POST!!!

ALL PARTS OF THE U.K.  
ALL PARTS OF THE WORLD

WE OFFER YOU A POSTAL SERVICE SECOND TO NONE—PROMPT AND EFFICIENT—ALL ORDERS ARE ATTENDED TO ON THE SAME DAY AS RECEIVED. IMMEDIATE NOTIFICATION GIVEN IF ANY DELAY IN DELIVERY

## SEEING IS BELIEVING . . .

COME ALONG AND SEE OUR DISPLAY . . . .



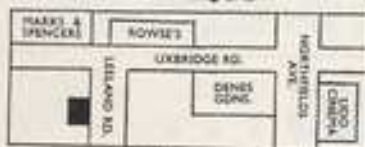
### ILLUSTRATED CATALOGUE

This catalogue is a new and complete price list of all aquaria requisites including tanks, covers, stands, heaters, thermostats, thermometers, air pumps, ornaments, books, cleaning equipment and all other accessories. Available by return of post. Send 6d. to cover postage, etc.

*We can offer an extremely Good and  
Healthy Variety of Tropical and Coldwater Fishes*

# J. T. HUNT (AQUAPETS) LTD

17 LEELEND ROAD, WEST EALING, W.11  
Tel. EALING 2748



BUSES: 207, 207A, 258, 85

Opening Hours 9.00—1.30.  
Half-day Wednesday

WE CATER FOR  
THE NEW AND  
FOR THE  
EXPERIENCED  
AQUARIST

382 EWELL ROAD, TOLWORTH, SURREY  
Tel. ELMbridge 6078



BUSES: 281, 406, 418, 282

### PISTON PUMPS AND AERATORS

HYFLO JUNIOR	..	..	..	..	45	7	4
"A"	..	..	..	..	48	10	0
"B"	..	..	..	..	68	5	0
"C"	..	..	..	..	112	10	0
WISA 200	..	..	..	..	111	15	0
300	..	..	..	..	119	15	0
PERMA AQUARIUM PUMP	..	..	..	..	114	9	0
ZOOBEKO	..	..	..	..	12	10	0
JETO TWIN	..	..	..	..	12	19	4
SILENT	..	..	..	..	12	19	4
BENA	..	..	..	..	12	8	0
FINI	..	..	..	..	12	1	0
QUICKO	..	..	..	..	13	2	0
MONTROSE MAJOR	..	..	..	..	13	4	0
MINOR	..	..	..	..	11	7	0

### EHEIM AQUARIUM POWER FILTER

£12 INCLUDING FILTER MATERIALS  
(SEE ARTICLE IN APRIL ISSUE OF "THE  
AQUARIST")

BACKING PAPERS—21" wide, 1/3 per ft.  
STRATA ROCKWORK, PEBBLE BEACH SEA  
AND SHORE

### LIVE FOODS

WINGLESS FRUIT FLIES CULTURE	..	..	7/6
GRINDAL WORM CULTURE	..	..	3/-
BLACK WORM CULTURE	..	..	3/-
WHITE WORM CULTURE	..	..	2/-
WHITE WORM, 1 etc.	..	..	4/-

Post Paid

### GLAZED ORNAMENTAL DIFFUSERS

DIVER	..	..	6/6	HIPPOPOTAMUS	7/6
FROGMAN	..	..	7/6	BRIGHTOSAURUS	7/6
CROCODILE	..	..	7/6	DINOSAUR	7/6

A LARGE SELECTION OF FRENCH CERAMIC  
ORNAMENTAL DIFFUSERS ALSO IN STOCK

WE HOLD IN STOCK A LARGE  
VARIETY OF LIVEBEARERS,  
CHARACINS, BARBS, SHARKS,  
CICHLIDS, CATFISH, LOACHES,  
TETRAS, SUCKER FISH AND  
MANY RARE FISHES

### SEDIMENT REMOVERS

SWIRLAWAY BATTERY POWERED	..	..	46/8
SUPER	..	..	54/8
WINDMILL AIR DIRECTOR	..	..	10/-
HAND	..	..	15/-

PERMA COLOURED GRAVEL  
2/- per quart. postage 1/6  
RED — YELLOW — LAVENDER — ORANGE  
BLUE — RAINBOW

### NEW GRO-WEL BUBBLE-UP AQUARIUM FILTER

(UP TO 10 TIMES THE POWER OF OTHER  
FILTERS) 20/- each

DAPHNIA AND TUBREX ALWAYS IN STOCK  
PERSONAL CALLERS ONLY

GOLDEN TENCH .. 2/6d. 12/6d. 18/-  
HIGGI CANY .. 8/6d. 5 17/6  
EXCEPTIONALLY BEAUTIFUL FISH

### AQUARIA

80W-FRONTED AQUARIA	..	..	..	..	..	..	..
26x12x15" WITH	..	..	..	..	..	..	412 0 0
36x12x15" PLAIN	..	..	..	..	..	..	417 0 0
48x18x15" STAND	..	..	..	..	..	..	427 0 0
36x12x15" WITH WROUGHT- IRON SPOCKCASE	..	..	..	..	..	..	428 0 0
STAND	..	..	..	..	..	..	429 0 0

### ARBE PLASTIC 80W-FRONTED AQUARIA

(Fully wired for heating and lighting. Heater  
and strip bulb only to be added.)

18 x 12	..	..	..	..	..	..	428 5 0
24 x 12	..	..	..	..	..	..	429 12 6
24 x 15	..	..	..	..	..	..	432 12 6
36 x 12	..	..	..	..	..	..	434 19 4
36 x 15	..	..	..	..	..	..	432 10 0
CORNER CONCAVE FRONT	..	..	..	..	..	..	431 0 0

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

All Standard Sizes of Aquaria in  
Stock. Any sizes made to specifica-  
tion. Quotations Free. Complete  
Installations quoted for.

### AQUARIUM BOOKS

TROPICAL FISH IN THE AQUARIUM	..	..	17/6
ALL ABOUT TROPICAL FISH	..	..	26/-
AQUARIUM PLANTS	..	..	36/6
ENCYCLOPEDIA OF TROPICAL FISH	..	..	42/6
ILLUSTRATED DICTIONARY OF TRO- PICAL FISH	..	..	47/6
FRESHWATER FISHES OF THE WORLD	..	..	86/-
EXOTIC TROPICAL FISH (LOOSE LEAF)	..	..	135/-
TROPICAL AQUARIUM FISH	..	..	95/-

Postage Paid

UNLESS OTHERWISE STATED PLEASE ADD POSTAGE ON ALL GOODS  
UP TO 10/-—1/6d. 20/-—2/- 30/-—2/6d.

THE AQUARIST

**IT'S SO EASY**  
 WITH THE  
**'DIAL-O-MATIC'**  
**THERMOSTATIC HEATER**

- ★ The perfect aquarium heater.
- ★ The natural choice of the discriminating.
- ★ The result of 30 years experience from the originators of glass-cased aquarium heaters.
- ★ It is one of a range of twenty first-class products to suit all pockets.
- ★ Products with those extra touches of craftsmanship—Made to a high standard—Safe to use—Dependable—Durable—Different. *All guaranteed.*

**YOU CANNOT GO WRONG WITH 'Es-Es'**



PRICE  
**35/-**  
 100w 150w  
 10" 12"



View of Control Head with Condensation Cover removed. Note the Neon Indicator and the Calibrated Control Dial affording immediate visual selection of temperature between 60°—90°F. To prevent accidental alteration the dial is recessed and its movement requires the insertion of a ball-pen point into the cavity provided. The required temperature numeral should be aligned with the raised arrow point against the cable inlet recess.

**SINGLETON BROS. (Electronics) LTD.**  
 53, VICTORIA STREET • LONDON • S.W.1.



POSTAL SERVICE

**Tropical Fish and Plants**



*This month we have many interesting fish and  
plants arriving for*

**THE BRITISH AQUARIST FESTIVAL**

**SEE US ON STAND No. 1**

Just inside Main Entrance at Bello Vue, Manchester  
NOVEMBER 27 - 28

We also have our usual extensive stock. Over 200 varieties of Tropical Fish  
20 varieties Plants, Plus Marines of course

## **GOOD NEWS**

### *for Aquarists*

For a yearly Subscription of 5/- we are producing a monthly News-Flash, with up to the minute information of new Fish stocks, new Equipment, and general information

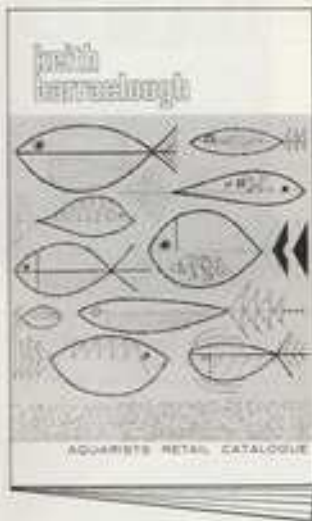
**KEITH BARRACLOUGH**

Early Closing Wednesday





POSTAL SERVICE  
**Equipment**



*We are proud to present our*

## **MAIL ORDER CATALOGUE**

*A Catalogue to beat all Aquatic Catalogues*

*This is something no Aquarist, Novice or Expert  
can afford to be without.*

32 pages full of illustrations and lots of information, quick easy reference to over 350 Aquatic items, available to you by return of post.

CONTENTS INCLUDE: Aquariums, Angle Iron, Stainless Steel, Fibre Glass and Perspex, Heating, and Thermostatic Equipment, Aeration and Filtration Components, Foods, Hundreds of Gadgets plus a 5-page water gardening section; also many 1966 items not yet announced

**SEND NOW 1/9 Post Paid**

**215 GREAT HORTON ROAD - BRADFORD 7 - YORKSHIRE**

Telephone: BRADFORD 73372  
Late Night Friday 8.30 p.m.

**When fish are properly fed, they keep fit and they live longer**  
**There is a 'Hobby' Food for all circumstances**

**Hobby Yolk Flakes (Yellow):**

Made from pure egg yolk, easily digested, therefore the best food for young fry.

**Hobby Leaf-Green Flakes (Green):**

Containing chlorophyll, recommended for such algae eaters as Plecoptera & Molluscs.

**Hobby Mixed Foods (Red):**

A mixed diet which even the "difficult" fish enjoy.

**Hobby Gold:**

A diet rich in vitamins and proteins which will maintain all fish in perfect health.

**At 2s. each per packet, or 2s. 4jd. by post.**  
**Breeders' packs of any of the above, 7s. each, or 7s. 5d. by post.**

**HOBBY 'BLUE DAILY'**

Hobby 'Blue Daily' is vacuum packed, so it is as fresh when you open it as when it left the factory.  
Made from crushed insects, flies, and mosquito larvae. Your fish will really appreciate it.

**Price 3s. per packet, or 3s. 4jd. by post.**



Importers of Tropical Fish for  
Wholesalers  
Members of the Pet Trade Association

**HILLSIDE AQUATICS** 44, Woodberry Way, London, N.12.

*Fantasy*

Regular Grade for Adults

Fine Grade for Fry

1/- 2/- 5/- 10/-

**The professional food that wise amateurs prefer**

It contains all essential ingredients to keep fish in peak condition and colour and to ensure rapid growth. A superb basic diet for Goldfish, Tropical and Marine fish.

Available at your local stockist now



**Fantasy Pet Products Ltd**

13, Nutley Lane,  
Reigate, Surrey.



# QUEENSBOROUGH FISHERIES

SEE OVERLEAF FOR FURTHER INFORMATION

## NEW SPECIAL PLANT COLLECTIONS (post only)

All post enquiries: 111 Goldhawk Road, W.12. 2s. post and packing on all collections

### TROPICALS

No. 1 10 plants including  
Dwarf Lily Crypsocoryne  
Wisteria etc. £1

No. 2 12 Vallisneria  
12 Myriophyllum  
2 Micro Sagittaria  
4 Ludwigia  
6 Elodea Densa £1

No. 3 12 Vallisneria  
4 Myriophyllum  
4 Ludwigia  
4 Elodea Densa  
4 Bacopa  
1 Amazon Chain Sword  
1 Portia Hair Grass £1

No. 4 1 Nymphaea Stellata  
1 Giant Hygrophila  
1 Apogoneton  
1 Wisteria  
1 Giant Sagittaria  
1 Crypsocoryne  
1 Indian Fern  
1 Portia Hair Grass £1

No. 5 6 Vallisneria  
6 Myriophyllum  
6 Hygrophila  
6 Elodea Densa 10/-

No. 6 1 Portia Hair Grass  
1 Portia Clover  
6 Micro Sagittaria  
6 Bacopa 10/-

No. 7 9 Vallisneria  
9 Ludwigia 10/-

No. 8 9 Sagittaria  
9 Hygrophila 10/-

No. 9 6 Vallisneria  
6 Hygrophila  
6 Ludwigia 10/-

No. 10 2 Water Wisteria  
4 Micro Sagittaria  
6 Bacopa 10/-

No. 11 12 Elodea  
9 Vallisneria 10/-

No. 12 2 Clover  
2 Chain Swords  
4 Bacopa 10/-

### TROPICAL OR COLD

No. 14 12 Sagittaria  
6 Myriophyllum  
6 Ludwigia  
6 Honeywort  
6 Hornwort  
1 Portia Blade  
3 Portia Hair Grass £1

No. 15 10 Plants for year  
Aquarium—Value 30/- £1

No. 16 6 Vallisneria  
4 Honeywort  
6 Elodea Densa  
3 Hornwort  
3 Portia Hair Grass 10/-

No. 17 Giant Amazon Sword Plants  
2-3 inches 7/6

No. 18 Water Lettuce  
Very beautiful plants  
or 5 for 10/- 2/6

No. 19 Water Hyacinth  
6-8 inches Floating Plant 7/6

No. 20 Spatterdock 3/6

Live  
Daphnia 2/-  
Tubifex 1/6 2/6  
Microworm 3/-  
Whiteworm (Free Feed) 3/-  
Snails 6d. ea.

OWING TO POPULAR  
REQUEST OUR  
WRAYSBURY BRANCH WILL  
BE OPEN ON SATURDAYS  
AS WELL AS SUNDAYS  
FROM 10 a.m.—4 p.m.

QUEENSBOROUGH HOUSE,  
FERRY LANE, HYTHE END,  
WRAYSBURY, Nr. STAINES



# Special News

See Page ix



We are specialists in aquarium installations. All sizes and styles to customers' own specifications carried out. We have many displays set up in our showrooms. Why not call and let us quote.

## WHY NOT A BOOK FOR CHRISTMAS?

### BOW AQUARIUMS

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

48in. x 12in. x 15in.—29 gns.

Fancy bronze, black & gold,  
and cream. Also glass stands

### STANDS

18 x 10 x 36 — 37/8  
24 x 12 x 36 — 47/8  
30 x 12 x 36 — 52/8  
36 x 12 x 36 — 57/8  
48 x 12 x 36 — 67/8

**BACKING PAPERS**  
**STRATA ROCKWORK**  
**SEA & SHORE**  
**BLUE SKYS**  
**SAND & SHELLS**  
24in. long x 20in. high. 2/6  
per sheet, or 1/3 per foot.  
(post free)

Please add 1/6 extra postage on appliance orders up to 10/-; 2/- up to 20/-; 2/6 up to 30/-.

### THERMOSTATS

- Constant External ... 36/-
- Springfield External ... 25/-
- Springfield Int./Ext. ... 17/-
- Springfield Int./Ext. ... 10/-
- U.S.G. ...
- Int./Ext. ... 18/-
- Int./Ext. "Popular" ... 16/-
- "Popular" with neon indicator ... 12/6
- Rena (with Neon) ... 25/-
- "Ea-Ea" Sentinel ... 24/6

### THERMOMETERS

- Mercury ... 4/6
- Platinum ... 4/6
- Spot Blue Gem ... 5/-
- "Ea-Ea" Therapy ... 4/6

### FILTERS

- "Wadswell" Plastic ... 20/6
- Outside Filter ... 19/6
- "Wadswell" Biological ...
- Aquarium Filter 12/6, 15/-
- "Wadswell" Magnet ...
- Inside Filter ... 18/-
- Corner Filter ... 6/-
- Air Lift ... 2/6
- "Sea-Jet" Outside ...
- Filter ... 17/6
- "Near King" Outside ...
- Filter ... 22/6
- Bottom Filter ... 4/3
- Ornamental Rock ...
- Filter ... 17/6
- One-Wall ... 3/6
- Bubble-up ... 35/-

### AERATORS & PISTON PUMPS

- Mommas ... 21/-
- Fairy ... 24/-
- Star ... 27/6
- Sea ... 36/-
- Rena ... 56/-
- Zoo-Box Total ... 75/-
- Hydro-Jonah ... 107/8
- Hydro "A" ... 136/-
- Hydro "B" ... 165/-
- Hydro "C" ... 199/-

### HEATERS

- "QUEENSBOROUGH"  
12in. ... 21/-
- 18in. ... 26/-
- 24in. ... 31/-
- 30in. ... 36/-
- 36in. ... 41/-
- 42in. ... 46/-
- 48in. ... 51/-
- 54in. ... 56/-
- 60in. ... 61/-
- Rena (75-200w.) ... 10/-
- "Ea-Ea" Flexible Heaters (100w.) ... 19/-
- "Ea-Ea" Thermostat: ...
- Heater, 100w. and ...
- 150w. ... 24/-
- Power-matic ... 24/8
- Inter-Pet Thermo- ...
- static Heater 12/6 and 20/6
- Heater Holders ... 2/-

### REMEDIES, etc.

- Malacoid ... 3/6
- Liquor ... 1/6
- Dissolvent ... 1/6
- Brusian White Spot ... 2/-
- Cure ... 1/6
- Sea Salts ... 1/6

### SEDIMENT REMOVERS

- "Wadswell" Air ... each
- Receptors ... 10/-
- "Wadswell" Stand ...
- Receptors ... 12/-
- Fishnet ... 3/-
- Siphon Tubing ... 7d. 3
- Hard Type Plastic ... 4/6
- Swirl Away ... 4d. 6

### PLANTS

- Faillanteria Sprata ... 1/-
- Zosteria Denso ... 1/-
- Hypoxis ... 1/-
- Scopus ... 1/-
- Sagittaria nitens ... 1/-
- Sagittaria nitens ... 1/-
- Faillanteria nitens ... 1/-
- Ludwigia ... 1/-
- Myriophyllum ... 1/-
- Cyperocarpus Berkmanii ... 2/-
- "Wadswell" 2/6 and 5/-
- "Concord" 2/6 and 5/-
- Marrubium 2/6 and 5/-
- Waver Hyacinth ... 3/6
- Giant Hyacinth ... 2/6
- Giant Sagittaria ... 2/6
- Najas Alveolata ... 2/6
- Amazon Chain Sword ... 2/6
- Darkwood per portion 1/-
- Algae per portion 2/-

### FOODS

- Electric Flakes ... 1/6
- Hikro Flakes ... 1/-
- Biscuits ... 1/6 and 2/6
- British Frygrain ... 1/6
- Liquor Nos. 1 and 2 ... 2/6
- Infants ... 2/6
- Slits ... 2/- and 4/6
- Dried Daphnia } our 8d.
- Ground Shrimp } over 1/-
- Fish Food } pack 1/6
- to 3 sizes
- Ants Eggs ... 8d.
- Wadswell's Trout Pac. ...
- 7 kinds of food ... 4/6
- H-Glow ... 4/6
- Biol ... 2/6
- O. Barmann ... 3/6
- Foodies ... 3/-
- Supernut ... 2/6
- Terrazon Flakes (all ...
- sizes) 1/11, 2/5, 7/6, ...
- 24/6 and 87/3
- Sungrow 1/- and 2/-
- (for food) 1/3
- Valkhoff 1/10, 6/9, and 22/6

### FULLY-GLAZED AQUARIUMS

- Pressed Steel Angle Iron
- | Attingham    | Inches        | Tank H's Ref. | Inches       | Tank H's Ref.  |
|--------------|---------------|---------------|--------------|----------------|
| 12 x 6 x 8   | 10/6          | 4/8           | 24 x 12 x 15 | 97/8 22/- 6/8  |
| 14 x 8 x 8   | 15/6          | 7/-           | 30 x 12 x 15 | 97/8 22/- 6/8  |
| 16 x 8 x 8   | 18/-          | 7/6           | 36 x 12 x 15 | 97/8 22/- 6/8  |
| 18 x 10 x 10 | 22/6 15/- 8/- | 8/-           | 48 x 12 x 15 | 137/8 48/- 8/- |
| 24 x 12 x 12 | 32/6 22/- 8/6 |               |              |                |

### LIVE FOODS

- Brown Shrimp Eggs ... 1/6 and 4
- Cultures of ... 2/6 and 5/3
- Near Worm 1 oz. ... 3
- White Worm ... 3
- Micro Worm ... 3
- Tubificor worms 1/6 and 2

### BOOKS

- Tropical Fish in the ... 25
- Aquarium Plants ... 26
- Freshwater Fishes of ... 84
- Diseases of Fishes ... 15
- All about Tropical Fish ... 75
- Encyclopedia of Tropi- ... 62
- Electricity in your ... 8
- Aquarium Dictionary ... 47
- Of Tropical Fish ... 47
- Exotic Tropical Fishes 150 ...
- All T.P.M. Books 2/- and ...
- The Book of the ... 10
- Garden Pond ... 10
- A Manual of Aquarium ... 17
- Plants ... 12
- Garden Ponds & Fish ... 12
- Pond Life ... 12
- Aquariums & Fishponds ... 12
- Exotic Aquarium Fishes ... 162
- W. T. Jones ... 162

### SUNDRIES

- Brushing Trap ... 15/-
- Sockers Knob or Shank ... 4d
- Double ... 4d
- Planting Socks ... 1/-
- Dry Floating Rings ... 1/-
- Squares ... 1/-
- Hikro (4 in.) feeder ... 25
- Worm Floating Feeders ... 1/3
- Worm Cradle with ... 1/3
- Sucker ... 1/3
- "Wadswell" Diffuser ... 1/- to 12
- "T" Piece ... 1/-
- Aerator Tubing ... 1/-
- Rubber ... 3/6
- Plastic ... 8d
- 4 Way Piece ... 1/-
- Clamps ... 1/-
- Carbon ... 1/-
- Glass Wool ... 1/-
- Nylon Wool ... 1/-
- Testing sets ... 18/6 and 4/8
- Post 1/9 extra
- Hikro Leak Sealer ... 2/-

# QUEENSBOROUGH FISHERIES

111 GOLDHAWK ROAD,  
SHEPHERD'S BUSH, W.12  
(1 minute from Shepherd's Bush Market)  
Telephone: SHE 3736  
Hours of Business: MON. to SAT.—  
9 a.m.-4.30 p.m. CLOSED THUR.

QUEENSBOROUGH HOUSE,  
Ferry Lane, Hythe End,  
Wraybury Nr. Staines  
Telephone: WRAYSBURY 1885  
Sundays and Thursdays only  
from 10 a.m. to 4 p.m.

16 PICTON PLACE,  
LONDON, W.1  
(1 minute from Selfridges)  
Telephone: WELBECK 643  
Hours of Business: MON. to FRI.—  
9.30 a.m.-6 p.m. SAT. 9.30 a.m.-4 p.m.

ALL POSTAL ENQUIRIES TO GOLDHAWK ROAD ADDRESS

THE AQUARIUM

# The AQUARIST AND PONDKEEPER

Founded in 1924 as "The Amateur Aquarist"



THE BUTTS, HALF ACRE, BRENTFORD,  
MIDDLESEX

Telephone: ISLeworth 6271

PUBLISHED MONTHLY

#### SUBSCRIPTION RATES

The *Aquarist* will be sent post free for one year to any address for £1 15s. 0d. Half-yearly 17s. 6d. Canada, U.S.A. \$5.00 yearly; \$2.50 half-yearly.

#### QUERIES

Postal replies are made to all specialised queries accompanied by a stamped, addressed envelope. This privilege is afforded only to registered readers and direct subscribers. Subscription forms can be obtained on application. In all cases letters should be addressed to the Editor.

Correspondence with intending contributors is welcomed.

MSS. or prints unaccompanied by a stamped, addressed envelope cannot be returned, and no responsibility is accepted for contributions submitted.

The Editor accepts no responsibility for views expressed by contributors.

## Contents

	Page
Indoor Gardens .. .. .	133
<i>Rivulus marmoratus</i> .. .. .	134
Cultured and Other Foods for Fishes .. .. .	137
Aquaria on the Screen .. .. .	139
Pure Water for the Winter .. .. .	141
Pencil Fishes .. .. .	142
Aquarist's Notebook .. .. .	143
The Flame Fish .. .. .	144
Diseases of Fishes .. .. .	144
Our Readers Write .. .. .	145
The <i>Aquarist</i> Crossword .. .. .	146
News from Aquarists' Societies .. .. .	147

VOL. XXX No. 8

1965

## Indoor Gardens

WHAT does the aquarist do with an old leaking aquarium or a fish bowl that is no longer used? What about making an indoor garden (usually called a bottle garden) from them?

To make an indoor garden we set up what is virtually a dry aquarium, that is, one which includes growing plants but excludes water and fishes. The bottom of the container is covered with several inches of a well draining compost. A suitable one would be John Innes potting compost no. 1, with the addition of a few handfuls of aquarium gravel and a cupful of charcoal to keep the compost from turning sour. Slightly dampen the mixture and spread it evenly on the base of the container.

For very small containers dwarf slow growing plants are best, but for larger ones the choice of plants is wider. Small ferns which are suitable can often be found growing between the stones on old walls. A couple of dwarf busy Lizzie plants could be included in a larger container, but slow growers such as *Peperomia* and *Pilea* will do for either size. Young plants of *Chlorophytum*, the spider plant, have attractive yellow and green foliage, as have some of the indoor ivy plants which could be included. *Zebra*, with its attractive silver, purple and green leaves, is also suitable, as are some of the tradescantias.

Water the plants once they are planted and cover the container with a close-fitting lid. An all-over cover glass will do for an aquarium and a sheet of polythene can be made tight-fitting over a fish bowl, with a rubber band. The container is placed in a light position and needs no attention until the plants grow too large and become overcrowded, when they can be pruned.

The container is self supporting. Water which evaporates condenses on the glass sides and returns to the soil. Plants, during photosynthesis, change carbon dioxide to starch and sugars and give out oxygen, and at night they produce only carbon dioxide. Light, heat, food, water and air are thus present and although some of the air and plant foods will be used up to produce new plant tissues, there is still plenty to maintain the set-up.

Such an indoor garden can exist for many months without any attention whatsoever. Ordinary bottles or sweet jars can also be used for bottle gardens, a pair of aquatic planting sticks being used to plant plants through a narrow-necked bottle. Soil is poured through a funnel made from an old newspaper, into the bottle.

The soil may be covered with a layer of aquarium gravel for decoration, and a few small rocks would enhance the garden.

B. Whiteside

## *Rivulus urophthalmus*



Before spawning the male of *Rivulus urophthalmus* approaches the female closely with a shoking motion, staying close to her even with the slightest change in her position. Similar behavior is noticed in many *Epiplatis* species. As the male approaches the female he presses her towards the future spawning site, in this case the bushy strands of *Myriophyllum* growing on the surface.

by A. VAN DEN NIEUWENHUIZEN

*Photographs by the author*

IT is curious that the *Rivulus* group apparently must be reckoned as more or less an "underdeveloped area" in aquarium circles. This may be a strange analogy but, in general, few aquarists have heard of these fishes, let alone seen them. Whenever one speaks of *Rivulus colodracus* there is some nodding of heads in recognition, but as soon as *Rivulus agilis*, *Rivulus xanthurus* or *Rivulus urophthalmus* is brought into the spotlight, puzzled looks appear instead, for it is not known what to make of these names! Perhaps things are different in England from here in the Netherlands, for the fish originates from the Guianas farther on down to Brazil, with Sao Paulo as its approximate southern border. This indicates, of course, that the fish is also to be found in the Amazon basin and the tributaries of the Orinoco.

The fishes from these regions appear, naturally enough, more often in America than in Europe, and, in spite of the fact that the first importation of *Rivulus urophthalmus* was from Maranhao (north Brazil) to Germany, the fish is

seldom seen here. Even in the tanks of Air Fish in Amsterdam (a famous Dutch importer noted for bringing many fishes from these regions to Europe), alas!, only occasionally is this beautiful fish found.

In Nature, *Rivulus urophthalmus* mainly inhabits flowing waters—not very surprising in the light of its elongated body shape. As a consequence of its enormous range, it is likewise no additional surprise to learn that this species occurs in different colour varieties. One encounters, for example, basically greenish varieties, those predominantly brownish, an almost all-blue type and very well known is the orange-red variety (a derivative of the yellow-gold form which is incorrectly offered under the name *Rivulus karni*). On the body of the male we find a number of longitudinal rows of reddish-brown to pure red stippling. The pectoral fins are virtually transparent but do tend towards yellowish at their base with a bluish haze in the middle and a reddish tint at their tips. The small ventral fins are yellow-orange; the dorsal fin is variable in coloration,



One egg is laid on fine-leaved plants and others between the stems of *Vallisneria* and the leaves of *Cryptocoryne*, on the bottom in the peat, against wood, in the corners of the breeding tank, in gaps in the aquarium cement and between stones; in short, no place is overlooked!



Towards the conclusion of spawning, the female retreats to a point of safety. In the breeding tank it is a good idea to supply *Riccia*, which floats upon the surface, for these fish do not seek out their eggs to eat them. The female will not only eagerly spawn in this medium, but will, upon occasion, utilize it as a resting place.



These young are deformed by use of too high a temperature in the hatching container

mostly greenish right at its base and yellow in the upper portion of the fin. Reddish dots cover the base of the dorsal, turning into fine, vertical stripes at the rear, uppermost portion. The anal fin likewise has three zones: at its base, a narrow bluish border, then a narrow greenish zone which grades into yellow, bordered in orange. The tail fin is more or less colourless but the fin rays themselves are tinted faintly in red.

#### Rivulus Spot

This colour description is of fish in my own possession. The dorsal portion of the male's body is olive brown, the flanks are partly a gleaming green, tending to blue near the belly. In brief, the males are quite beautiful. The females are much less colourful. They are basically olive brown. There are also a number of scarcely visible longitudinal rows of red dots, but their colour is so weak as to escape notice and thus appear to be absent. The back is more or less marmorated, this characteristic being clearly shown in some of the accompanying photographs. A spot appears at the root of the tail before the base of the caudal fin—the black "rivulus spot" preceded by a golden spot.

In spite of the fact that I have given but a partial colour description of this fish, one should gain the impression that we have a really beautiful fish. My own personal opinion is that most of the *Rivulus* are similarly quite pretty. Among these beauties are *Rivulus agilis* and *Rivulus sarniensis* as you will find out if you have the opportunity to purchase them. And with such purchase comes the question of what sort of aquarium conditions should be offered to keep them at their best.

Clearly all indications are of a surface fish, and such fishes do best in large tanks. Deviations from conventional shapes, however, are entirely without merit. On the contrary, I have for a long time kept such fishes in a 28 in. by 20 in. by 12 in. tank. This tank depth is only 12 in., so that the surface area is quite large. The aquarium was filled with soft, slightly acid water. On the bottom lay a peat mulch of very finely shredded peat. The planting consisted only of *Myriophyllum* and *Cryptocoryne nana*. The *Myriophyllum* grew long strands upon the water surface, between rafts of drifting *Riccia*. This tank contained my *Rivulus* collection, and in it they all felt quite at home. A constant, briskly running filter not only kept the water crystal clear but imparted some movement as well.

With this tank, I had to do nothing more than net out

the young periodically. I never raised the temperature but kept it between 73° and 77°F (22-25°C). For feeding, mostly midge larvae were supplied, later fruit flies and other water insects, and for the young fish *Daphnia*.

I will not pretend that soft water is entirely necessary for the care of this fish. On the contrary, it is easily accustomed to hard water, thus simplifying the raising of them to maturity. However, if the intention is to raise the greatest possible number of young, then the simplest method is to utilise a tank of about 13 in. by 8 in. by 8 in. It can be done with smaller tanks but I am no advocate of this because I favour giving my fishes plenty of room.

#### Breeding Tank

I always use tanks of 16 in. by 10 in. by 10 in. These breeding tanks are, for all killifishes, filled only to a depth of 3 to 4 inches. Before breeding, the sexes are separated. One must take care with *Rivulus sarniensis* to see that the females are not allowed to become too heavy with eggs; otherwise, they will drop them in a "pseudo-spawning" without the presence of the male. As soon as the females are full enough, they are placed in the breeding tank in a ratio of two females to each male. The fish may be fed while in the breeding tank but, naturally, this must be watched carefully since decaying food can quickly foul the water.

If the fish are in good condition, and fully grown, the first day's harvest of eggs may total 20 or 25 per female, two females, of course, producing about 50 eggs. This number decreases rapidly until, shortly, one is content with a daily harvest of 20 eggs. It will no doubt be observed that a portion of the eggs will turn bad. Therefore, a few drops of an acriflavine solution are added to the dishes in which the eggs are stored to prevent bad eggs from affecting good eggs next to them. The shallow egg-storage containers should be kept in a darkened location, the best storage temperature being about 73°F (23°C). At this temperature the young hatch out in about 12 to 15 days. Frequently, the newly hatched young cannot discard their egg membrane from around their heads. In such an event, we may draw the fry up through a pipette of suitable diameter, and in passing through the opening of the pipette the "hull" or membrane will drop off and the fry may be transferred to a rearing tank. Higher temperatures during egg development may be fatal. At temperatures between 81° and 82°F (27-28°C), embryonic development is significantly retarded. Frequently, such embryos die before development is completed. Those that do survive are often deformed.

#### Rest Period

The breeding period can extend over a long period of time. When using two females to one male, 1 or 2 days' rest may be given per week. The lengthening or shortening of this rest period is learnt through experience, the speed of recovery of the female being the only guiding factor. Rearing of the fry is easily accomplished and they take brine shrimps from the start. It is best to place the newly hatched young in a shallow container. After about a week, one can begin to raise the level of the water with fresh water. This greatly stimulates growth.

With the yellow-gold variety of *Rivulus sarniensis*, we often get the impression that the first generation of young is almost all red coloured. This is a consequence of its basic coloration being overlaid with intensely red dots. With age, at a length of about 2 inches, these spots fade somewhat, resulting in an exceptionally beautiful fish.

Concerning the length of this species, textbooks give this as 2 to 2½ inches. Perhaps, however, this measurement does not include the tail for actually fully grown *sarniensis* easily reach 3½ inches.



# Cultured and Other Foods for Fishes

by A. JENNO

OVER the years, aquarists have found several small creatures which are easily cultured at home in quantity and which are very suitable fish foods. These are dealt with here in order of size.

Infusoria is a general name given to various groups of small organisms which are used as the first food for small fry. Infusoria can be collected from ponds, water butts etc., but to obtain it in any quantity it must be cultured. The old-fashioned method, which is very effective, is to stand rows of jars in the sun, each containing crushed lettuce, hay or other vegetable pieces. The jars then become infected with Infusoria spores from the air, and in a few days the jar will be full of Infusoria. This is then fed to the fry. The quantity to be fed requires some judgement and does, of course, depend on the size of the spawning. The trick is to keep enough jars going in rotation to ensure a constant supply.

Nowadays there are various Infusoria tablets etc. on the market which can be added to the fry tank and produce Infusoria easily. One method of producing Infusoria, which also provides additional aquatic interest, is the keeping of *Ampullaria* snails. These large snails live mainly on green food and their droppings encourage the growth of quantities of Infusoria. Depending on the type of food given, different types of Infusoria will be produced, but unless the aquarist is prepared to identify the types with a microscope this is rather a fine point. The most favoured food for *Ampullaria* is lettuce.

When using these snails it is essential that the water in their container is not allowed to foul as they will not tolerate bad conditions. Therefore, even when no fry are being fed, the Infusoria must still be removed and replaced with fresh water regularly. If it is wished to breed the snails, a temperature of about 78°F (25°C) is preferred. They are not bisexual so a pair is necessary. After mating, the female lays the eggs above the water line in the form of a large pink bunch which looks like an overgrown raspberry. The eggs take up to a month to hatch and must be kept warm and damp. There are several species of *Ampullaria*, one of which is said not to eat aquarium plants, but unless the aquarist definitely possesses this species, it is best not to put these snails in planted aquaria.

One of the foods most favoured for young fishes is the brine shrimp. This small animal is found naturally in certain salt-water lakes in America and the eggs are collected, dried and sold all over the world to aquarists. The eggs can be kept for very long periods and are thus a convenient means of transporting the food. Having obtained some eggs, the aquarist must hatch them out in salt water, and it is the newly hatched shrimps which are then used as food. One desertspoon of sea salt per pint of tap water will usually hatch the eggs. The time taken to hatch will depend on the temperature of the water. At 80°F (27°C) hatching takes place in 24 hours, and at 70°F (21°C) about 56 hours.

If the aquarist wants to use brine shrimp in quantity and to give daily feedings, several hatching containers will be necessary and must be used in rotation. The container should be wide and the water in it shallow, and some means

of warming the water will be necessary. Many aquarists hatch their shrimp in large jars which are floated in an aquarium to keep warm. This is not a good practice as over a period of time a salt content may build up in the aquarium used, and this might not agree with the type of fishes kept. It is usually sufficient to stand the dish or jar on top of an aquarium which has a thin cover glass. Provided that the location of the aquarium is not cold, the jar will keep warm enough in this way. Aeration is beneficial and the water should only be a few inches deep.

The number of eggs used will obviously depend on the number of shrimps required at each feeding, but, as a start, put in as many as will cover a sixpence and continue to add this amount at times corresponding to the feeding times. By doing this it should be found that once the initial hatch has hatched, newly hatched shrimps should be available for each feed. When hatched the shrimp will congregate in the area of the container which receives the most light, and they can be siphoned off from there, carefully, into a fine net or clean white handkerchief. With care, no shells or dead shrimp will be removed as these will be either at the surface or on the bottom, although if aeration is used it will be necessary to stop this and allow the jar to settle before siphoning. The shrimps should be washed in the net under the tap to remove the salt from their bodies before feeding to the fishes. One container of salt water used in this way will usually last just over a week, after which time the water goes sour and the hatching rate drops. It is therefore necessary to use at least three containers if a constant supply is required; one just finishing, one going at its best and the third just starting. Brine shrimps can be raised to the adult stage by feeding with Infusoria etc., and they make a very good food for adult fishes, but to raise any quantity requires almost as much bother as raising a spawning of young fishes, so not many people do this.

It is sometimes possible to buy frozen adult brine shrimps, which are defrosted and then fed to the fishes, but so far these are not generally available in this country. Newly hatched brine shrimps are used by almost all breeders as an excellent first food for livebearers and large egg-layers, and as a second food for other egg-layers. Fishes should not be fed continuously with brine shrimp for more than a few weeks, however, as an excess of salt may be produced in the body, and this can prove harmful.

Micro worms are also used for very young fishes. These small, white worms are just visible to the naked eye, and when required in quantity must be cultured artificially. The method is to prepare a shallow dish or container, the bottom of which is covered with a layer of cooked porridge made up into a thick paste. The dish is kept at about 75°F (24°C), and preferably in the dark, and the new culture must be seeded with a small portion of an old one. After a few days the worms will have bred to such an extent that the surface of the culture will be covered with them and there will be a thick band of them on the sides of the dish just above the culture level. These can be removed with a fine paint brush and fed to the fishes. The culture will continue almost indefinitely, but usually

after about a fortnight the smell becomes very strong and the worms do not breed quite so fast unless fresh porridge is added. It is better to start a new culture each week and use them in rotation (unless one possesses a very weak sense of smell and lives alone!).

Grindal worms are a stage larger than micro worms and are cultured in peat or earth. They too must be kept warm and the culture must always be very damp. It is usual to buy a culture to start with and to keep this going by feeding with porridge oats, bread, Bemax, dry fish food, or practically anything convenient. The food is laid on the surface of the peat and a piece of glass placed on top of this. When the culture develops a lot of the worms will lie on the underside of the glass and this can then be dipped into the aquarium to feed the worms to the fishes. Avoid including the worms' food and the peat from the culture. The secret of keeping both Grindal and white worm cultures going well is not to take off so many at once that the number left in the culture is reduced beyond that needed to keep up the breeding rate. If a large supply is required several cultures must be used. Dig the peat over occasionally and keep it wet. The worms seem to appreciate a change of food almost as much as the fishes do.

White worms are the largest of the cultured worms generally used as fish food. They differ from Grindal and micro worms in not liking heat and do best at 50-60°F (10-15°C). Their culture and method of feeding is as already described for Grindal worm, except that they are usually cultured on a larger scale in shallow wooden boxes. They are a useful food for adult fishes, but should not be fed to very young fishes as they can become entangled in the gills of a small fish and thus strangle it. Nor should they be fed too heavily to adult fishes as they are a very rich, fatty food, and if used in excess are said to cause degeneration of the reproductive organs. Apart from these points, however, correctly used white worms are an excellent food for promoting growth and getting fishes into breeding condition. They have the advantages of being cheaply obtainable and easily cultured.

Drosophila is the name given to a small wingless fruit fly developed by scientists for experimental use. It is also a very good food for medium and large sized fishes. The flies are cultured in bottles or jars kept at about 70°F (21°C). The top of the jar is covered with fine mesh gauze or linen and a half-inch layer of fruit mash put on the bottom. This must be in a state of fermentation and must be kept damp. This last point is very important. Yeast and wheat bran can be added to the mash. When a large number of the grubs have changed into chrysalids the culture is allowed to dry out and the newly hatched flies are then fed to the fishes. Remember to retain future breeding stock. It is important not to let ordinary winged fruit flies into the culture, as winged young may then be produced which would be difficult to feed to the fishes, and also would not go down well with the aquarist's family. Drosophila can be obtained from biological supply firms, universities and large schools.

#### Table Foods

We now pass on to the foods for fishes which many aquarists ignore. Almost everything we eat will be taken to advantage by our fishes, in one form or another. This does not mean that you can throw all the left-overs into the fish tank, but it does mean that by a little bit of experimenting, several very useful foods can be obtained from the wife's shopping trips.

First and foremost on my list comes cooked peas. Fishes invariably do not get enough green food in a nice aquarium and this is an easy method of providing it. Remove the transparent shell and feed with the inside. Liver, salmon and various meats are excellent foods but

should be prepared by immersing in hot water to remove any grease and then crushed in the fingers before feeding. Be especially careful not to overfeed and pollute the tank. Further examples on my own fishes' diet are fish 'fingers', hard-boiled egg yolk, dry cooked porridge, cheese (occasionally) and fish paste.

There are many other things which can be tried. The main points are to avoid introducing grease into the aquarium and not to overfeed. When introducing fishes to a new food don't expect them to take it greedily at first. Feed a little in with their usual food and let them get used to it before feeding with it separately.

Some of the commercial pet foods can be used to advantage as well. In particular dehydrated cat foods consisting of hard dry lumps, usually sold in paper bags, are very good. The large fishes at London Zoo aquarium are regularly fed on canned meat usually sold for cats and dogs. The use of marrowbone jelly is probably a bit dodgy.

#### Dry Foods

There are available on the market today very many different prepared dry foods for aquarium fishes. Practically all aquarists use them and in most cases dry food is the major part of the fishes' diet. The better class and more expensive dry foods are almost a substitute for live foods, but they must not be regarded as the best food available. The serious aquarist must provide live foods in his fishes' diet if he expects good results. Dry foods are useful, and the better ones will even keep fishes going for long periods without live foods, but they must not be relied on entirely.

Dry foods should be fed sparingly otherwise clouding of the water will result, with consequent pollution. Some can be obtained in tablet form, and this is useful where inexperienced persons perform some of the feeding duties. Most good dry foods carry an analysis of contents. This should be studied, and when buying a new food these can be compared. Special foods are also sold containing a high proportion of vegetable matter, and others with increased richness which are called conditioning foods.

One of the big controversies among aquarists, especially those who show fishes, is over the use of colour food. The basis of this food is aureomycin, which is an antibiotic, and this causes increased growth rate in young fishes and a very marked intensification in the colours of both young and adult fishes. Unfortunately, what we gain on the roundabouts we lose on the swings, and aureomycin has its disadvantages. Heavy feeding with this causes lack of vitamins E and K, which produces sterility and shortens the life of the fishes. Therefore if it is desired to use colour foods, it is important to make sure that the contents of the particular food used contains additions of vitamins E and K to compensate for these disadvantages, and it is also better not to feed with the food too often, once or twice a week being quite sufficient.

These notes have been prepared with the aim of helping the beginner aquarist and also encouraging the more experienced aquarists to give their fishes a better diet than they probably do. It is sometimes a lot of trouble to feed our fishes properly and often takes up a fair amount of time, one way and another, but the reward is well worth it. A tank of healthy, colourful fishes is one to be proud of, while unhealthy fishes, kept on a poor diet, will not encourage their owner or anyone else to have any enthusiasm for the hobby. Many troubles in set-up aquaria can be traced back to bad feeding or overfeeding and thus, by getting his fishes on to a good diet and maintaining it, the aquarist can win half his battles quite easily.

Detailed instructions with illustrations for culture of live foods are given in "Fish Foods and Feeding" (4s. 11d. post free from *The Aquarist* or from dealers).

# Aquaria on the Screen

A report of the recent  
Hendon A. S. Convention  
written by A. E. STEVENS

**A**N audience of well over 300, including aquarists who had travelled from the Midlands, South Coast towns and from Ireland, packed the lecture hall at Hendon Aquatic Society's annual convention last month to hear Mr. A. van den Nieuwenhuizen's talk and to see his photographs.

In the first part of his lecture, Mr. van den Nieuwenhuizen explained how Dutch aquarists furnished their tanks, with advice on the choice of plants and rocks. The layout design of the tank was obviously to be influenced by its position in the room and the placing of plants was very important to obtain "depth" in the final picture. Extensive use is made in Holland of dead wood and cork bark for tank furnishing. Slides, projected by the speaker's assistant, Mrs. L. Reinecke clearly illustrated the points made and showed that tanks used on the Continent are made to blend with room furnishings. Another feature was the size of the tanks: in most cases they were 6 feet long, 3 feet wide and 2 feet deep, and in some cases were larger—a far cry from the usual 2 feet or 3 feet sizes that are so popular here!

Plant growth with special fluorescent tubes originally produced for horticultural use (Gro-Lux lamps) was described by the lecturer, who had grown a variety of aquarium plants under these lamps during the last 18



Photo: A. E. Stevens  
Mr. A. van den Nieuwenhuizen feeding the carp on his visit to the London Zoo Aquarium.

months or more. In some cases, leaf form was distorted, that is leaves were of thinner width. The colour of the



A section of the large audience who attended the Convention at Hendon to hear Mr. A. van den Nieuwenhuizen's talk on aquaria.

leaves was also affected and a lightening of the greens was a common result. With some plants the growth was very good, especially with the Madagascar lace leaf plant, but only for several months—algae would appear almost overnight and clog the delicate form of the lace leaves. Use of a mixture of this light with normal fluorescent light or tungsten filament lamps gave a better balanced growth, reported the lecturer. He also pointed out that fluorescent lighting, although efficient in terms of light output for power consumed, is expensive to install.

Slide sequences on fishes and their habits were next featured and described. The colours of fishes before and after spawning was a very interesting subject and some time was spent showing the changes. The feeding of fishes was also commented on.

During a refreshment break aquarists had the opportunity to meet each other and chat to the various lecturers, judges and writers who could be identified by name badges in their lapels. Great interest was shown in the several exhibits. Mr. H. J. Vosper, well-known lecturer in the south-east, displayed a great variety of rocks and fossils and gave advice on the safe types of rockwork that could be used for aquarium use. To demonstrate easy methods for transporting plants to shows, Mr. F. C. Katritzky had brought along with him various species of aquarium plants and presented them in the manner recommended for showing rooted and cutting plants. The foyer and hall were decorated with very attractive settings of pot plants supplied by a local florist and pet shop, Flora and Fauna, and Mrs. I. Jackson of the Central Aquarium was present with a display of equipment, foods and accessories which could be purchased. Newer products on the market were available for inspection.

An aquarium lighting display was staged to show the effect of special lamps. Two 24 in. by 12 in. by 12 in. tanks were arranged side by side, each furnished with fishes, rocks and plants. By means of a control switch, the type of illumination over the tanks could be varied. Five illuminations were provided for: (1) low power tungsten filament bulbs (one 25 watt over each tank), (2) a 4 ft. white fluorescent tube, which resulted in a rather

"cold" lighting effect but of much brighter intensity even though approximately the same amount of electrical power was consumed, (3) a warm white fluorescent tube, a much more pleasing effect than (2) being given by its addition of more of the 'red end' of the visible spectrum, (4) a Gro-Lux lamp, the light emitted being of a lavender colour, and (5) high power tungsten filament bulbs (one 100 watt over each tank) giving the same intensity of lighting as that given by (2) and (3).

Great interest was shown in the Gro-Lux demonstration. With it, the green of the plants was almost unaffected but the most startling effect was on the colours of the fishes. Those having reds and blues were changed quite remarkably. Neons and cardinals really glowed, but the effect on quite average coloured red swordtails had to be seen to be believed; their increase in colour was such that the writer is at a loss for words to describe the change. Even a blind cave fish looked as if it had been freshly skinned and was raw all over!

Continuing after the break with more information on fishes, Mr. van den Nieuwenhuizen also showed some other creatures from the same region as the fishes. Birds and snakes were amongst those shown and the speaker included some slides of his own and friends' pets, including monkeys and an amusing sequence on the bath-time antics of a pet owl. With tropical marine fish-keeping becoming a little more popular in this country it was only natural that some information on the requirements and habits of some of these fishes was given. An outstanding sequence was one showing interdependence of the amusing clown fish and the sea anemone. The enthusiastic audience showed its appreciation with a terrific round of applause, which once more brought another successful Hendon A.S. Convention to a close. However, the busy weekend for the Hendon club members was not over yet, as on the following day a party travelled with their Dutch guests to Regent's Park Zoological Gardens where, of course, visits behind the scenes of the Aquarium and the Reptile House were made. With Mr. van den Nieuwenhuizen's great interest in birds, he made a special visit to the newly re-opened bird cage designed by Lord Snowden.



Displays of equipment, plants, rocks and a demonstration of the effectiveness of different types of aquarium lighting were arranged in the foyer to the lecture hall at the Convention

## ABOUT THE POND THIS MONTH

# Pure Water for the Winter

by A. BOARDER

**A**T this time of the year the question arises as to whether to clean out the garden pond or not. There can be no hard and fast rule about this as so much depends on the type of pond, its position and its inhabitants. Any small pond will benefit from a thorough clean out but what constitutes a small pond is another question. Any concrete pond of less than 12 ft. by 10 ft. should be cleaned out, especially if the water looks impure. This may not be obvious to the beginner whereas an experienced aquarist can tell at a glance if the water is in good condition. It should smell sweet and have no dull colour. Foul water usually looks bad and lacks that crystal clearness so sought after by pondkeepers.

It has often been said that a pond with green water is a healthy one but this state can suddenly become very dangerous. If the green algae are too thick the pond can be anything but healthy and if much of the algae die off then the water can soon become very foul with a putrid smell. A bad condition is when there is mauve or purple patches of flannel weed round the edges of the pond or on plants. The water in such a pond will smell badly and must be changed. I know that green water has often been spoken of as very good for fishes and I know that in the past I have held that opinion. However, time has made me change my mind as I have lost whole batches of fry by giving them water too thick with green algae. I do not mind admitting that I may have been wrong in the past as I am old enough in the tooth to admit faults or wrong ideas. We are all inclined to take as gospel truth anything which we read but it is only after years of experience that we begin to question some of these so-called truths.

The good aquarist is always experimenting and it is surprising how many of the old ideas he can prove to be false. Even the question of cleaning out the pond can arouse many arguments. We all know the aquarist who proudly claims that he never cleans out his pond and has no trouble, but there are many losses of fishes caused by the owner of the pond neglecting to do this task.

One might raise the point that in Nature a pond is not cleaned out, but there are many things which can tend to keep such waters clear. For one thing there is the natural removal of the fittest going on among the fishes and other inhabitants. Few ponds in Nature would function well if they contained as many fish per gallon as the average garden pond. Nor do such ponds have to be subjected to the constant feeding which the garden pond has to suffer.

If the pool has any trees in the vicinity it is almost certain that some leaves will have blown into the pond. The water is able to take a fair amount of these but if the pond is small or the water shallow it is probable that the decaying leaves will soon pollute the water. A pale brown appearance soon occurs in such a pond and although some fishes seem to be able to withstand such water there are others which will soon succumb.

The time to clean out the pond will be when all the leaves have fallen and the water lilies have died down. In the way, it is a good plan to remove the water lily leaves as they start to die as they soon pollute the water. A decaying leaf on top of the water will soon show oily patches around it, which indicates that putrefaction is taking place. The pondkeeper who has wisely planted

his lilies etc. in separate planting crates will now be rewarded for his care, as it is easy to slide out these containers to the side of the pond when some of the water has been removed. If the lilies and other water plants have been set in a depth of soil at the bottom of the pond it will be almost impossible to remove them. In such a case it will be possible only to remove most of the water and carefully refill with fresh.

The emptying of the pond can present problems. The thoughtful pondkeeper who made the pond at the highest part of the garden, if any, will be able to siphon out much of the water. Others will have to resort to the bucket unless they are the happy possessors of electric pumps. I bought one of these over 25 years ago and it has been very useful many times since. My plan is to set this pump working before breakfast and then by mid-day the pond is nearly empty. Once the water is low enough the fishes are carefully caught and placed in a spare tank or bath. Then the water plants in their containers are dragged out to the side. Do not try to catch the fishes too soon or you will cloud the water so that the fishes cannot be seen. Once the water level is lowered the fishes can be seen and caught with less trouble.

When I made my pond I constructed a deep bowl-like structure in the middle to take the water lily. This has since proved most useful as all the mud gradually sifts into it, where it can be removed with a bucket. Once all has been removed the pond sides can be examined to see if there are any cracks. These are easily mended with Prompt cement and sand in equal parts. The sand must be fine to penetrate into small cracks. This cement sets in half an hour, when the whole concrete surface can have a good brush round and thorough washing with a hose.

The fresh water can now be run in and the water plants gradually returned to their right positions. At the same



"And in this one you can breed kidney-shaped fish!"

time, if any have become too large they can be divided or pruned. Do not be in too much of a hurry to return the fishes. I find that they are not too fond of fresh tap water and so I never like to put any fishes directly into this until it has had a chance to lose most of the chlorine. Whether this is what the fishes dislike I cannot be sure, but if young goldfish are suddenly placed into tap water, freshly drawn, after they have been in mature water, they are anything but comfortable and their mucous covering looks wrong, rather milky in appearance and uneven. After a time the water appears to get in better condition and this is helped by the fact that some of the old water from among the water plant roots will tend to alter the tap water somewhat. When using fresh tap water for a tank of young fishes I like to have half the tank at least filled with mature water from a pond or another tank. The fishes are then undisturbed and can start eating immediately whereas they will not start to do so for perhaps a day if they are changed suddenly from mature water to fresh tap water.

As the fishes are returned to the pond they can be examined carefully to see that they are not infested with pests, such as leeches, lice or anchor worms. These last-named appear to be on the increase in garden ponds and I have had notice of several infestations during the past few months. They appear as small hair-like projections hanging from the fishes and are quite difficult to pull off. A touch with neat Dermal or Milton on cotton wool will usually kill them.

Once the pond has been cleaned out it will be necessary

to inspect it now and again to make sure that no moss-leaves have fallen in. If these are netted from the surface soon after falling they are easily removed, but if many are allowed to sink they may take a lot of clearing out. The main purpose of cleaning out the pond is to save the lives of the fishes during a severe freeze-up. Many pondkeepers think that it is the cold which kills their fishes when the pond freezes over but this is not so. Goldfish can withstand hard frosts and just remain dormant whilst the water is frozen over. What kills the fishes at such a time is that once the water freezes over the foul gases cannot escape and fresh oxygen cannot enter the water. Foul water when it is covered with ice is then a death trap for the fishes underneath.

A hole in the ice is very important, as for one thing it allows the pressure under the ice to escape. It is surprising how much pressure can build up under ice on a concrete pond. One way to help to reduce this pressure is to have a strong box standing in the water. This can be about a foot square and must stand on bricks or be tall enough to have at least 6 inches above the top of the water. A strong lid is fitted and then when ice forms the water inside the box takes longer to freeze than that outside it and so the water can rise inside it and lessen the pressure on the rest of the water. To open a hole in ice a hammer must not be used but if a can of boiling water is stood on the ice a neat round hole will soon be formed. If electricity is at hand it is easy to install a tropical tank heater to switch on when severe frost occurs.

## Pencil Fishes

by B. WHITESIDE

**T**HERE are a number of different varieties of characins called pencil fishes available to the aquarist but none of them is as popular as it deserves to be.

Commonly available to the aquarist is the golden pencil fish (*Nannostomus aureolineatus*), which only grows to 1½ in. in length and is ideal for the community aquarium. The fish has a relatively long thin body ending in a pointed snout, which, combined with a narrow black line running from the snout to the centre of the tail, gives it its name from its resemblance to the stub of a pencil. Above the black line is a reddish golden line. The body of the male has a reddish purple sheen, and the male has a red anal fin and white tips to the ventral fins when in breeding condition. The female is a pale golden colour with the golden line very prominent.

Golden pencil fish seem to thrive best in a temperature of about 75°F (24°C). They are seen at their best when a number of fish (four or five) are kept together. When not on the move, the group often remains static, with fins beating rapidly.

Adult fish are not difficult to bring into breeding condition and this can be done in the community tank if a variety of live foods is included. These should be small, as the fish have small mouths. A good dried food is also readily eaten (a recipe for one by Mr. A. Vernon Ashford I find excellent; see "Our Readers Write", *The Aquarist*, January 1955). When in breeding condition the fish will be quite easily distinguishable into male and female as the males will have bright colours, the black line being much thicker than usual, and the white tips to the ventral fins being

prominent. The female fish will be plumper than the males and the colours less conspicuous.

To spawn the pencil fish I introduced a group of five fish, three males and two females, into an 18 in. by 10 in. by 10 in. aquarium which had been set up a week previously. Water quality does not seem to be important but the temperature was gradually raised to 82°F (28°C). Two days later, in the afternoon, spawning began. Two male fish would adopt an aggressive side by side attitude, fins fluttering and colours flashing. They continued in this position for several seconds, like Siamese twins, and then one of the two would dart off after a female who would be moved into a position beneath a selected leaf. The female placed the ventral surface of her body on the lower surface of the leaf and the male joined her in an embrace, as the eggs were deposited. Repetitions of this process continued for several hours, all five fish taking part in pairs, until the females had lost their rounded shape. Eggs which did not adhere to the plant leaf were eaten by the spawning pair as they sank in the water. After spawning the parents were removed. Two weeks later they were again seen to be spawning in the community tank in which they had been placed.

To provide suitable leaves for spawning, the bottom of the breeding tank must have a layer of gravel and some plants with broad leaves, such as *Cryptocoryne*, must be planted.

Hatching of the eggs took 3 days, the fry becoming free-swimming on the fifth day. A tubed fry food was introduced into the water 3 days after spawning and the water was treated with Infusoria when the fry were ready to feed. Only a few of the fry were raised. After infusorians the remaining fry were fed on a second grade of tubed fry food and then micro worms were introduced into the diet. The home-made dried food previously mentioned, sieved through a nylon stocking, was next added to the diet and the young fish, now 4 weeks old, are approaching ½ in. in length.

A group of these little fish will add an attractive element to any community tank and the prospect of raising a few young ones from eggs gives an added interest.

## AQUARIST'S Notebook

by P. M. FULLER

A FISH caught off the coast of Dar es Salaam has been causing quite a sensation among the Moslem adherents in the region. Apparently it bears certain characters on its tail which resemble the Arabic prayer "Lailaha Illalah", which being translated reads "There is no God but Allah", reports *The Observer*. Although these single vertical strokes do not appear in the characters, which are situated at the base of the caudal fin of the fish, similarity has been confirmed by The Institute of Islamic Studies, London. The report goes on to quote an earlier recording of a similar find in J. R. Norman's *The History of Fishes*: "In a specimen which made its appearance in the fish market at Zanzibar the markings on the fin bore a remarkable resemblance to the old Arabic characters, reading on one side of the tail 'Lailaha Illalah' and on the other side 'Shani Allah' (a warning sent from Allah)."

The fish, which was bought for a penny, eventually sold for 5,000 rupees!

Reported recently in a leading magazine is the story of six giant crabs which were being flown from Alaska to European aquariums in Manchester, London and Hamburg. When the plane stopped at Orly Airport in Paris, they were transferred to the cold storage room for safe keeping until the next day, when they were to resume their voyage. Unfortunately, the chef of the airport restaurant was not informed that the crabs were intended to go to aquariums, and, assuming them to be for kitchen use, he served them up in a crab salad "à la façon du chef".

On a recent visit to the Swiss lakes, one of the most interesting things I noticed was the widespread habit of keeping live trout in tanks in restaurants and some food stores. One such tank was placed just outside a cafe in Mürren, a popular tourist resort near the French border. Customers to the restaurants can thus choose the particular fish they wish to eat, and have it, what is more, absolutely fresh. I should imagine that the keeping of wild fishes in tanks in this way presents its own particular problems, but one comfort to the proprietors is that assuming business is good, the expectation of life of the fishes is comparatively short. I did notice, however, that every tank was subjected to constant aeration, and protected from the direct light of the sun. On one occasion I saw a large garden pond crammed full of freshly captured trout awaiting consumption at the owner's leisure.

I was delighted to read reports in the *Daily Mail* recently of researches into fish culture at present being undertaken in the British Isles. The theory behind it is sound. By selective breeding "super fish" for the table can be evolved as much the same way as the common goldfish has been evolved from its wild-type ancestors. Of course, the experimenters will not be looking for aesthetically satisfying points, as does the aquarium breeder, but merely for size, and other factors tending to improve the species for human consumption. Further, the protection afforded gives a vastly increased survival rate, and consequent increased efficiency for the industry. Mr. James Shelbourne, director of the experiments, claims to have achieved a 70 to 80 per cent survival rate with sole as compared with the survival rate in the wild, which is believed to be well under 1 per cent.

The world's first experimental fish farm for plaice is situated at Ardree, Ardnamurchan in Argyllshire, where approximately 150,000 baby plaice are being fed on boiled



Photo:

The 'prayer fish'

The Observer

mussels by a housewife, having been reared to the inch-long stage at the large indoor tanks at Port Erin, Isle of Man. As a control, a further 150,000 are separated and hunted for their own food, to compare the standard of artificially fed fishes with those which have to feed themselves, as under natural conditions.

It seems the time may well come when fish farms are as common a sight as their terrestrial equivalent, and when one will begin to see various artificial strains of sole, plaice and herrings in the fish shop just as there are various breeds of hen, pig and aquarium fish which would never have evolved without the intervention of man. Another feature of the fisheries to come will undoubtedly be the eventual absence of trawlers and fishing vessels altogether. Whereas there are undoubted examples of romantic bravery in the thought of men weathering storm and tempest to obtain the fish we eat, it is equally certainly an inefficient means of doing so, and the eventual installation of fish farms in a big way will surely render it obsolete.

It is well known that travellers tend to exaggerate their experiences, and also well known among those who have come into contact with the fish that reports of the ferocity of piranhas tend to be somewhat over-dramatised. However, sufficient damage to herds has been caused in areas where they are indigenous to force the native people to have an "early warning system" installed, enabling them to keep themselves and their animals away from the water when a large shoal is passing through. The fishes are said to attack cattle by tearing the flesh from the ankles, thus causing the creature to stumble and fall into the water where the fish can demolish the remainder of its body. Apparently the only instances where human beings have been killed after encounters with this fish have been when the victim has been haemophilic; because wounds tend to bleed profusely, such an individual's chances of survival after receiving a bite are negligible when it occurs in isolated places in the wild.

# The Flame Fish

by JACK HEMS



**T**HE flame fish, sometimes called the red tetra or tetra from Rio, after its native home in Brazil, is a deservedly popular member of the family Characidae. Apart from its charming coloration and peaceful disposition, it is always on the go, accepts any small live or dried food, and has a life-expectancy of about 3½-4 years. More than that, it can be bred quite easily in a smallish aquarium by almost any enthusiastic beginner. It is formally referred to as *Hyphessobrycon flammula* and, as a rule, attains about 1½ in. in length.

In general the posterior part of the body and all the fins except the pectorals, which are clear, are vivid red; the front portion is brassy to greenish silver reflecting pinpoints of greeny gold, with two dark vertical bars on the shoulders. Sexing is best done by observing the anal fin. In the female the outer margin is concave, in the male it is more nearly straight and quite heavily lined and tipped with black. A temperature of 75°F (24°C), with a range of 5°F either way, suits the species very well, and soft water is advised both for normal maintenance and for breeding.

A scrupulously clean 12 in. by 8 in. by 8 in. tank is large enough for spawning a pair, though as will be readily realised, the employment of a larger tank always ensures more rapid growth of the fry. The furnishings of the tank, apart from the essential thermostatically controlled heater and a reliable thermometer, should consist of a layer of well-washed compost and several tied bunches of any plant with finely divided or bushy foliage.

Before placing the fish in the tank, it is recommended to condition them. This means that the sexes are parted for a while and, during their separation, fed on live food plus the richest (in food value) tit-bits you can lay hands on, such as scraped lean beef, crumbs of hard-boiled egg and cooked and shredded liver. A word of warning: always swirl the liver around in a tablespoonful of water to separate the larger particles for feeding from the unwanted, and potentially polluting, bloody residue.

This extra attention should result in the fish showing enhanced coloration, markedly so in the male, and a sprightlier manner. Another thing, if the female is filling, or has filled up, with roe or spawn, her flanks will show a distinct blottedness or bulge. When you feel certain that the fish are ready for spawning, transfer them to the breeding tank—adjusted to the temperature they have been used to, last thing at night or first thing in the morning. Then raise the temperature very slowly to about 78°F (26°C).

If everything goes as planned, it will not be long before the male starts driving the female all over the aquarium. During these drives, he will frequently open and close his dorsal and anal fins with all the adroitness and coquetry one usually associates with the performances given by a fan-manipulating geisha. Sometimes he will even enliven his drives with jerky little dances or abortive glissades to attract the female's attention. All this, of course, leads up to the actual egg-laying, which begins when the female, obviously worked up to a high pitch of excitement, makes

a mad dash into the plants. And there, with the glowing male trembling at her side, she will release some sticky eggs. Thereafter the couple will repeat their actions elsewhere in the plants. And so spawning continues in this manner until roughly 150 eggs have been laid.

As soon as egg-laying is over, the parent fish must be transferred to another tank. If you neglect to carry out this instruction, the eggs will be eaten very quickly. Ordinarily, the fry hatch out within the space of 2 days, and then hang tail down on the sides of the aquarium and the vegetation. But after another 2 days of this inactivity, they will, in increasing numbers, assume a horizontal position and swim away.

To feed the tiny fry, Infusoria, soupy-looking green water and flour-fine dried food may be given. But do take care not to introduce more than the merest pinch of dried food at a time, or else trouble will ensue. As with adult fish, a little food given often (but more often for fry) should be the rule. There is, however, little danger of upsetting the balance of the water if you keep to microscopical live food for the first week or so, after which such things as micro worms or brine shrimps can be placed on the menu.

With the right sort of attention (regular dip-tubing of the bottom to remove accumulating debris, and plenty of food) the baby fish develop their colours in under 6 weeks, and a few score of them shoaling together in clear water is a thrilling sight.

---

## Diseases of Fishes

*The Principal Diseases of Lower Vertebrates* by H. Reichenbach-Klinke and E. Elkan. 600 pages. 397 black and white illustrations, 1 colour plate. Academic Press. 126s.

**O**NE third of this book is concerned with diseases of fishes, the remainder covering diseases encountered in amphibians and reptiles. In their Preface the authors state that they have not attempted to make their work "popular", and some knowledge of biological subjects is undoubtedly expected of the reader. However, serious aquarists and herpetologists will find much to interest them, not least being the practical details of treatments of the diseases, which are given wherever this is possible. Useful summaries of symptoms and treatments are also included. A good deal of information from work hitherto published only in foreign languages is presented and numerous references to all sources are given in the text. The illustrations, many of them photomicrographs, are of a uniformly high quality and the book as a whole is luxuriously produced. It has a detailed subject index and two glossaries of trivial and scientific names and habitats of all the animals mentioned.



## our readers

*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.*



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

### Growth of Aquarium Plants

I WOULD like to compile some information, for later publication on specific facts relating to the healthy growth of tropical aquarium plants. Many aquarists find some plants, which they would like to grow in their aquaria, impossible to grow. Information in books is often vague and over generalised and does not include specific facts obtained in a scientific manner, from a number of sources. A set of specific facts governing healthy growth for each aquarium plant would be very useful information.

I would be pleased to receive such information from any reader who is successful in growing one or several tropical plants and who can supply reasonably accurate information on such facts as: water hardness, pH, temperature, sort of compost in which plants thrive (e.g. grade, whether or not peat or leaf-mould is used or if fertilisers are used), whether under-gravel filters etc. are used, the wattage of lighting used and for how long each day, whether the plants receive natural sunlight, whether bulb or tube lighting is used, what types of fishes are kept, what other types of plants thrive or do not thrive in the tank with the named kind, whether or not the plants have bloomed, whether the pH of the water has been adjusted by the use of chemicals. In other words, any relevant information which may have a bearing on the growth of healthy aquatic plants. All of the above facts need not be included but the more that are, the more accurate should be the resulting conclusions.

I will not, unfortunately, be able to answer letters received, but the results should, if they are of use, be made available to readers. Any information will be greatly appreciated.

B. A. WHITFIELD,  
91 Glenarm Road, Larne,  
Co. Antrim, N. Ireland.

### Criticism of Fish Breeding

I FEEL that your contributor, Mr. A. Burch, in his article "A Criticism of Fish Breeding" (*The Aquarist*, September), has been a little unfair towards clubs. May I be permitted to answer his criticisms in case he has influenced potential club members and fish breeders away from their aims?

Mr. Burch does not say what experience he has had of clubs, and it would appear that his knowledge, both of club activities and the disposal of surplus fishes, has been gained secondhand. As Mr. Boarder states in his article in the same issue, success by club standards is measured on the show bench.

It should be pointed out that as far as breeding fishes for

show is concerned, and this is the true aim of a club member, the emphasis is on quality rather than quantity. One breeder's entry consists of either four or six fish, depending on the rules of the governing body. For this reason, a club member will not breed except with fish of a high standard, which will therefore give broods of good quality. This means that dealers are always ready to take surplus stock from club members, although I am quite ready to believe that Mr. Burch has had difficulty in disposing of his surplus through a wholesaler—this is probably due to the fact that he does not have the quantity required.

As for the amateur being likely to have disease in his broods, surely the reverse is the case, owing to the fact that his work is primarily a "labour of love".

I would suggest that Mr. Burch or anyone having doubts of the above statements join a local club and see for himself.

G. W. BOSTOCK,  
Show Secretary,  
Hendon and District Aquatic Society.

I MUST violently disagree with the comments of Mr. A. Burch in his article "A Criticism of Fish Breeding" (*The Aquarist*, September).

To my mind your contributor has rushed into print without giving the matter just consideration, and it would appear that he has never taken part in the varied activities of club life. If, however, he has, then he will, I am sure, have difficulty in proving his comment—"It cannot be really doubted that the local club is responsible for encouraging extensive breeding as a means by which it can perform its natural but perhaps not altogether desirable function as judge of a member's relative skills."

To illustrate my point, my own Society has 12 perpetual trophies, of which only one is awarded to the most successful breeder of the year. The remaining 11 are awarded for success in activities that we consider to be just as important and desirable; for example, to the non-committee member who, in the opinion of the Society has contributed the most to the life and work of the Club within the year; for the Furnished Aquaria Competition held annually for three classes (aquariums up to and including 2 ft. in length, aquariums over 2 ft. in length, and Ladies' Section), and as a final example, the Points Shield, most prized of all the Society's trophies, awarded to the member attaining highest aggregate points for all the above (including the Breeders' Competition), plus points for awards won in table and open shows. My Society is, I am positive, not alone in their recognition of these above competitions,

and I would suggest that Mr. Burch looks to these for his criticisms, not to Societies which are exceptions to the general rule.

M. J. PARRY, *Shew Secretary*,  
Newport A.S.

I WOULD like to answer the article "A Criticism of Fish Breeding" by Mr. A. Burch, in the September issue of *The Aquarist*.

Mr. Burch's article starts: "The successful breeding of fish is often thought to be the ultimate goal of every aquarist. It is the means by which every fish-keeper is popularly judged." I have never yet judged a fellow aquarist by his breeding conquests and it is beyond my comprehension how Mr. Burch manages to do so. The fact that someone is a successful breeder does not make him any better than a knowledgeable non-breeder. How many of our judges today are true breeders? Yet still they are judges and very popular too.

And really Mr. Burch! surely you must realise that if it were not for clubs performing this "not altogether desirable function as judge of the members' relative skills" we would still be a nation of also-rans instead of one of the top three in the tropical fish world.

The majority of fish-keepers and breeders get their experience and knowledge from clubs and in my view, it is most desirable that a club be the initial judge of member's relative skills. Where else is the beginner (and we all were once, you know), to learn all the complexities of breeding and showing, sportsmanship and enthusiasm?

W. T. LANGRIDGE, *Secretary*,  
Lytham Aquatic Society.



## BRITISH AQUARISTS' FESTIVAL

27th - 28th November, 1965

### Admission

(including also the Belle Vue and Amusement Park)

2s. 6d., children half price

For particulars of Federation Assembly apply to:

J. E. Shore

53 Refuge Street

Shaw, Lancs.

Speaker at Assembly will be Mr. J. Kelly

Illustrated lecture on "American Visit"

Sunday 28th November

## The AQUARIST Crossword Compiled by L. BRADLEY



### CLUES ACROSS

1. Thick-lipped gizzard (6, 7).
9. A sucker catfish (11).
11. Gathering together of hounds and huntmen (4).
12. See "10 Down".
13. Fishes that would very much like diet (7).
15. Herring (7).
16. Herring are commonly found on them (5).
17. Used to catch fish (4).
18. As well it can be seen in the Royal Society (4).
19. Undergrowth (5).
21. Ref. once (mag.) and exonerates strictly the laws of the game (7).
22. Sand Don (mag.) (7).
23. Insect (of this month) (8).
26. Hail (4).
27. *Chloris parviflora* (11).
28. Is this fish made of stone? (6, 7).

### CLUES DOWN

2. Perhaps contained in 6 down (4).
3. Not the boxer's first line of defence (7).
4. Waxed expenditure (4).
5. Aquaria (7).
6. Musical composition (4).
7. *Brachycephalus dorsalis* (8, 8).
8. Star among goldwater fish (5, 8).
9. *Therapsis obliqua* (7, 4).
10. Organ stabilising fish to 12 across (4, 7).
14. Invertebrate (5).
15. Group of animals or plants (3).
19. There is a school for this according to Sheridan (7).
20. Pertaining to plants (7).
24. A fern (4).
25. Sounds like a parasite but it is just a twitching of the muscles (1, 3).
26. Marine mammal of the family Phocidae (4).

Solution on page 148



# from AQUARISTS' SOCIETIES

Monthly reports from Secretaries of aquarists' societies for inclusion on this page should reach the Editor by the 5th of the month preceding the month of publication.

**THE results of the Nottingham and District A.S. show were as follows:** *Anabantidae* (Anabantid): *Betta splendens* (male)—1, R. Bird; 2, Lamborn; 3, M. Davis; *Betta splendens* (female)—1, A. Mason; 2, P. Reynolds; 3, N. H. Goodfellow; 4, K. Murray; *Colisa labeo*—1, M. Davis; 2, N. H. Goodfellow; 3, K. Murray; *Colisa labeo*—1, Mrs. Dennis; 2, L. P. Tye; 3, G. Sargent; *Trichogaster Latescens*—1, J. Talbot; 2, R. Himmelfarb; 3, Mr. and Mrs. G. Hill; *Trichogaster Trichopterus*—1, A. Himmelfarb; 2, Mrs. J. Ballymore; 3, J. Brough; *Gourami*, any other species—1, Mrs. H. Dennis; 2, Mrs. J. Lindley; 3, M. Davis; *Anabantid*, any other species—1, F. C. Smith; 2, Mr. and Mrs. Hill; 3, Master Reynolds; *Burbs*: *Burbs* *Auratus*—1, A. Bettany; 2, M. Davis; 3, E. Leadley; *Channa*—1, Miss L. Moore; 2, Mr. and Mrs. Hill; 3, A. Lindley; *Compositae*—1, A. Mason; 2 and 3, A. Mason; *Latescens*—1, G. Sargent; 2, E. Leadley; *Nigrofasciata*—1, W. Sargent; 2, J. Dennis; 3, J. Allan; *Channa*—1, K. Riley; 2, A. Saxon; 3, *Tetraodon Papiamentensis*—1, P. Rogers; 2, A. Leadley; 3, K. Riley; *Sphaerocoma*—1, A. Lindley; 2, J. Allen; 3, W. Sargent; *Tinea*—1, G. Sargent; 2, A. Saxon; 3, K. Riley; *Burbs*, any other species under three inches—1, F. Sibson; 2, J. Brough; *Burbs*, any other species over three inches—1, H. Hughes; 2, J. Dennis; 3, Mrs. Nicholas; *Latescens* and *Morone* (sharks)—1 and 2, G. Saxon; 3, H. Hughes; *Chaetodon* (*Hypoclinemus* varietal): *Fasciata*—1, J. Tye; 2, Mrs. H. Hill; 3, W. Bink; *Gracilis*—1 and 2, N. H. Hill; 3, J. Talbot; *Indus*—1, F. Gwynne; 2, K. Riley; 3, D. Bennett; *Palaemonetes*—1, L. Tye; 2, Mrs. J. Lindley; *Rosetta*—1, L. Tye; 2, Mrs. J. Lindley; 3, J. Dennis; *Sphaerocoma*—1, M. Davis; 2, P. Rogers; 3, J. Dennis; *Scolotes*—1, Mr. Burt; 2, A. Mason; 3, A. Gaskell; *Sepias* or *Callinectes*—1, Mrs. J. Lindley; 2, L. Tye; 3, J. Dennis; *Heterostichus*—1, G. Saxon; *Gymnocharacinus* *Terracei*—1, J. J. Thorne; 2, L. Tye; 3, Mrs. Goodfellow; *Thalassidroma*—1 and 2, Mr. and Mrs. Hill; 3, V. Thorne; *Stenohalaeus*—1, H. Bennett; 2, A. Saxon; *Stenohalaeus* *Acuminatus*—1 and 2, A. Gaskell; 3, A. Mason; *Stenohalaeus* *Margaritatus*—1 and 2, A. Gaskell; 3, L. Tye; *Pseudocorymbus* (*Gobius* and *Harmata*)—1, G. Sargent; 2, J. Talbot; *Pseudocorymbus* (*Trichostomus*)—1, Mrs. Lindley; *Trichostomus* (*Gambusia*)—1, Mrs. Dennis; 2, A. Mason; *Channa*, any other species—1 and 3, M. Davis; 2, Mrs. Nicholas; *Latescens*; *Xiphophorus*, *Microgaster* (*Moon* *Ptery*)—1, Mrs. Dennis; 2, and 3, E. Nelson; *Xiphophorus* (*Moon* *Ptery*)—1 and 3, J. Britton; 2, H. Gahan; *Xiphophorus* (*Variatus*)—1, A. Lindley; 2, D. Bennett; 3, M. Davis; *Xiphophorus*, any other variety *platy*—1, L. Tye; 2, A. Mason; 3, J. J. Thorne; *Xiphophorus* (*Red* *Severid*)—1, P. Clark; 2, J. Burt; 3, J. Brough; *Xiphophorus*, *Halteri* (*Green* *Severid*)—1 and 2, K. Burt; *Xiphophorus* *Halteri* (any other variety *severid*)—1, R. Burt; 2, Mrs. Dennis; 3, J. Dennis; *Mollanisa* *Black* *Molly*—1, M. Davis; 2, P. Duffy; 3, Mrs. Dennis; *Mollanisa* (*Spotted* *Molly*)—1 and 2, J. Britton; 3, L. Tye; *Mollanisa*, any other species—1, M. Davis; 2, Mrs. Hill; 3, D. Bennett; *Lebistes*; *Reticularis* *Males*—1, P. Knowles; 2, T. Nason; 3, P. Duffy; *Lebistes*; *Reticularis*; *Tanais*—1, Miss M.

Lindley; 2, H. Adley; 3, P. Clark; *Latescens*, any other species—1, and 2, F. Gwynne; 3, A. Mason; *Danio* *Tanichthys* *Rubra*—1, Mrs. Hill; 2 and 3, H. Bird; *Brachydanio* *Albivittatus*—1, S. Hill; 2, Miss A. Hill; *Danio* *Melanostomus*—1, H. Hughes; 2, Miss M. Lindley; 3, K. Riley; *Tanichthys* *Albivittatus*—1, S. Hill; 2, G. Saxon; 3, Miss H. Goodfellow; *Radiata* *Heterostichus*—1 and 2, Mr. Pickett; 3, K. Riley; *Radiata* *Trichostomus*—1, Miss M. Lindley; 2, T. Pickett; 3, J. Britton; *Radiata*, any other species—1, G. Saxon; 2, Miss M. Lindley; 3, G. Sargent; *Cichlids*: *Amatitlana*, species—1 and 3, A. Mason; 2, P. Rogers; *Cichlasoma*, species—1, R. J. Sproston; 2, K. Hagan; 3, Mrs. Chubb; *Apistogramma*, species—1, Mrs. Nicholas; 2 and 3, T. E. Smith; *Pseudocichla* (*Imber* or *Scutes*)—1, M. G. Davis; 2, D. Paddy; 3, L. P. Tye; *Pseudocichla* *Black*—1, Mrs. Dennis; 2, T. J. Thorne; 3, K. Burt; *Pseudocichla*, any other variety—1, L. Tye; 2, W. Sargent; *Cichlid*, any other species under 3 inches—1, R. Gaskell; 2, S. Kowalski; 3, G. Saxon; *Cichlid*, any other species over 3 inches—1, H. Hughes; 2, Miss G. Davis; 3, Mrs. R. Hall; *Monodactylus* and *Soma*—1, H. Hughes; 2, Mr. Davis; 3, Mr. M. G. Saxon; *Apistogramma* *Species*—1, B. W. Furman; *Nandia*—1, Mrs. P. Reynolds; *Loricata* *Species*—1, K. Burt; 2, A. Gaskell; 3, K. Burt; *Top* *Mixtures*: *Aphyoseiurus*, species—1, M. Lamborn; 2, Mrs. Dennis; 3, R. Bird; *Pantodon*, species—1, L. Tye; 2, G. Sargent; 3, P. Sibson; *Burbs*, species—1, L. Tye; 2, Mr. and Mrs. Hill; 3, G. Sargent; *Any* other species, top mixture—1, P. Gwynne; 2, G. Saxon; 3, K. Burt; *Acharoides* *Elstneri*: *Melanostomus* species—1, M. Davis; 2, K. Riley; 3, Mrs. Lindley; *Any* other species, *severid* fish—1, W. Sargent; 2, J. Pickett; 3, Mr. and Mrs. Hill; 3, K. Riley; *Latescens* *severid*—1, 2, Mr. and Mrs. Hill; *Burbs* *class* *Latescens* (in fish in brood)—1, Mrs. Dennis; 2, P. Duffy; 3, J. Dennis; *Burbs* *class* *Latescens* (in fish in brood)—1 and 2, K. Willmott; 3, J. Dennis; *Cochrania* *Compton* *goldfish*—1 and 2, Mr. and Mrs. Hill; 3, K. Riley; *Latescens* *severid*—1 and 2, Mr. and Mrs. Hill; *Burbs* *shobunkin*—1, B. Furman; 2 and 3, Mr. and Mrs. Hill; *Scard* *Fantail*—1, G. Saxon; *Callis* *Fantail* or *Vallat*—1, 2 and 3, G. Saxon; *Black* *Moon*—1, J. Burt; 2, Mr. and Mrs. Hill; *Burbs*—1 and 2, Mr. and Mrs. Hill; *Ordo*—1, B. Furman; 2 and 3, Mr. and Mrs. Hill; *Rudd*—1, J. Burt; 2, Mr. and Mrs. Hill; 3, B. Furman; *Tench*—1, B. Furman; 2, Miss A. Goodfellow; 3, S. Hill; *Any* other species *coldwater* fish—1, T. Pickett; 2, B. Furman; 3, Mr. and Mrs. Hill; *Burbs* *class* *coldwater*, six fish in brood—1, and 2, J. Burt; 3, Mr. and Mrs. Hill; *Club* *fantail* *severid* *severid*—1, Burt and District; *Club* *fantail* *severid* *coldwater*—1, L. Tye; 2, B. Furman; 3, B. Furman; *Club* *fantail* *severid* *coldwater*—1 and 2, A. Lindley; 3, E. Leadley.

**THE Brecknell A.S. held a successful show on 26th September and despite adverse weather conditions the show was very well attended both by the non-fish-keeping public and members of other societies. The results were as follows:**—*Gambusia* *goldfish*: 1 and 2, C. Dennis; *Fancy* *goldfish*: 1 and 3, R. Furman-Jones; 2, E. Levey; *A.O.V.* *fish*: 1, 2 and 3, V. B. Hunt; *Platy*:

1, H. G. Buntin; 2, R. Dove; 3, T. R. Duffy; *Molly*: 1, T. R. Duffy; 2, P. Hill; 3, L. Jordan; *Dwarf*: 1, A. Wilkinson; 2, P. A. Low; 3, D. Allen; *Channa*: 1, Mrs. N. Jordan; 2, P. Hill; 3, P. Murray; *Siamese* *fight*: 1, H. G. Buntin; 2, R. Dove; *A.O.V.* *labeo*: 1, E. J. Price; 2, E. Levey; 3, P. A. Low; *Danio* *labeo*: 1, P. D. Hill; 2, N. Franklin; 3, T. R. Duffy; *Burbs*: 1, R. Dove; 2, N. Franklin; 3, P. A. Low; *Coldwater* *goldfish*: 1, N. Franklin; 2, R. Soffin; 3, P. Murray; *Coldwater* *A.O.V.*: 1, H. G. Buntin; 2, P. Murray; 3, P. Hill; *Cichlid*: 1, R. Keeping; 2, L. Jordan; 3, P. A. Low; *Guppies* (male): 1, P. D. Hill; 2, L. Jordan; 3, R. Keeping; *Guppies* (female): 1 and 2, R. Dove; 3, P. Hill; *A.O.V.* *tropical*: 1, A. Wilkinson; 2, R. Dove; 3, R. Keeping; *Burbs* *live*: 1 and 2, T. R. Duffy; 3, R. Jordan; *Burbs* *egg*: 1, R. Keeping; 2, G. Youdell; 3, T. R. Duffy; *Plants*: 1 and 2, R. Dove; 3, L. Jordan; *Fantail* *severid* (tropical): 1, L. Jordan; 2, Miss W. Ryder; *Fantail* *severid* (non-tropical): 1, L. Jordan; 2, Mrs. N. Jordan; 3, Mrs. L. A. Howard; *Dove* *Trophy*: E. J. Price; *Burbs* *Cup*: L. Jordan; *Burbs* *Cup*: R. Keeping; *Michael* *Ingram* *Trophy*: L. Jordan; *"Here and Now"* *Trophy*: H. Buntin; *Coldwater* *Cup*: R. Furman-Jones.

**A SALE of surplus fish, plants and equipment was held for members at the monthly meeting of the Hford and District Aquarists and Pondkeepers Society and a proportion of the proceeds was allocated to the Society's funds.**

The September sale show was for tropical and coldwater fish in three classes. *Burbs* were—Female guppy, any variety: 1, Mr. Sampson; 2 and 3, Mr. Davidson; 4, Mr. Dixon; Male guppy, any variety: 1, Mr. Davidson; 2, Mr. Davidson; 3, Mr. Davidson; 4, Mr. Davidson; *Severid* (without guppy): 1, Mr. Davidson; 2, Mr. Davidson; 3, Mr. Davidson; *Severid* (with guppy): 1, Mr. Davidson; 2, Mr. Davidson; 3, Mr. Davidson; 4, Mr. Davidson; *Any* other species: 1 and 3, Mr. Sawyer; 2 and 4, Mr. Cook.

Anyone interested in fish keeping and aquatic life will be welcome at future meetings, held on the second Monday evening of each month. Further details are available from the secretary, Mr. R. Burt, 13 Dunfold Road, Daglington.

**THE annual general meeting of the Yeovil and District A.S. was held on the 7th October and the following were appointed:**—President, Mr. M. Bostock; chairman, Mr. S. Langdon; vice-chairman, Mr. G. Aston; treasurer, Mr. C. Bushell; secretary, Mr. T. C. Perry; 116 St. Michael's Avenue, Yeovil; Committee: Messrs. V. Collins, M. Hulbert, A. Nichols, D. Pinner, T. Sharp, R. Sisson.

The Society was successful in winning the Victor Capaldi Trophy in the inter-club husband aquaria class at the recent Bristol open show with an entry staged by Mr. D. Silver. Individual members who gained awards were—First and third and the Lowell Balboa Cup for Fishermen: K. Saxon; first for cichlids (excluding angels): G. Giffard; second for latescens: A. Nichols; second for goldfish: W. Burt; second and third for A.O.V. pond or river fish: W. Saxon; V.I.C.C. for A.O.V. pond or river fish: V. Collins; fourth and commended for shobunkin: S. Langdon; fourth for coldwater plants: V. Collins.

**THE annual open show of Kingston and District A.S. was a great success and there were 359 entries. There was also a display by the Fancy Guppy Association and competition with 89 entries. The British Killifish Association had a small display of fish and spawning groups, and by the interest shown, this promises to be an expanding organization. The awards were presented by Miss Laurie Leigh. Results of the show were as follows:**—Best fish in show: 1, E. Gilmour; *Kingston* *Trophy* (corydoras): 1, E. Gilmour; *P.I.A.S.* *Prize* (characin): R. Bagg; *A.V.* *severid*: 1, R. C. Chapman; 2, Mrs. Burt; 3, D. J. Woodward; *A.V.* *platy*: 1, M. G. Bartley; 2, F. J. Woodward; 3, J. Miller; *A.V.* *molly*: 1, J. Cobden; 2, D. J. Woodward; 3, R. Burt; *A.V.* *barb*: 1, B. Fickett; 2 and 3, L. Ayres; *A.V.* *characin*: 3, R. Bagg; 2, G. Atland; 3, V. Cobden; *A.V.* *cichlid*: 1, E. R. Nicoll; 2, C. Fellerman; 3,

D. J. Woodward, A.V. Janis, rubens and W.C.M.M.; 1, R. Bagg; 2, Mrs. Ross; 3, H. Parker, A.V. (cohort); 1, D. D. Woodward; 3, M. Packwood; 3, D. W. Ellis, A.V. corydoras cat. 1, L. F. Clemens; 2, H. S. Peay; 3, B. Cooper, A.O.V. cat. 1, H. Towell; 2, H. W. Ellis; 3, G. Greenhall, A.V. loach and bota; 1, L. Ayres; 2, C. P. Blackland; 3, J. E. Howes, A.V. (light); 1, J. E. Howes; 2, D. C. M. Durrant; 3, C. Peterson, A.O.V. labyrinth; 1, J. Thorne; 2, C. B. A. Fisher; 3, D. M. Porter, A.O.V. tropical; 1, V. P. Vowry; 2, J. Cobden; 3, G. Greenhall, Breeder tropical egyptians; 1 and 2, D. J. Woodward; 3, A. G. Hart, Breeder tropical egyptians; 1, L. Smart; 2, G. Greenhall; 3, R. Elden, A.V. tropical plants; 1 and 2, J. E. Howes; 3, Mrs. J. A. Dunsan, The Fancy Guppy Association—Best male: A. Goodall; best female: G. Bass; best breeder: W. Morris.

The monthly meeting of the Dundee A.S. was attended by 30 members and the table shows many colorful (exotic) and oddwater (native). The results were—Coldwater (exotic): 1, 2, 3 and 4, Wallace S. Russell, Coldwater (native): 1, Miss E. Davidson; 2, G. B. Kirkland.

As a result, the latest placings in the Scott Trophy competition are as follows:—Miss E. Davidson (19 points); 2, J. McGaughey (20 points); 3, W. S. Russell (8 points); 4, A. Harris (7 points); 5, B. Hill and I. Baird (5 points).

The programme which followed was a most interesting talk on "Fish Diseases" in which P. N. Grooming held the floor and answered the many questions put to him in a most comprehensive manner.

The third annual open show of the Newport A.S. was held on 11th September, and proved to be an outstanding success. Special awards—Highest aggregate points in show, Mr. Ralph Harris (Newport A.S. president). Best fish in show and best aquarist in show, Mr. D. Harper (Troisbridge A.S.) for a beautiful red-tailed black shark. Best freshwater in show, Mr. J. R. Wheeler (Troisbridge and District A.S.), mollusca spp. Best freshwater tank in show, Mrs. A. James (Newport A.S.), palaemonetes kibensis. Best exhibit in show by a junior, Master A. Penthos (Bridgend A.S.). Other prizes were as follows:—Siamese fighting fish: 1 and 3, P. Bartlett (Cardiff); 2, A. Doherty (Llanrwst Major). Labridae: 1, J. R. Wheeler (Troisbridge); 2, and 3, R. Harris (Newport). Barbs: 1, K. Ferrant (Llanrwst Major); 2, Mrs. A. James (Newport); 3, C. Cass (Troisbridge). Hermogonema and hypoclinemus: 1, R. Harris (Newport); 2, C. Pease (Troisbridge); 3, J. Burgess (Newport). A.O.V. characin: 1, Mrs. A. James (Newport); 2, R. Harris (Newport); 3, J. Burgess (Newport). Angel fish: 1, J. O'Dwyer (Pontypridd); 2, A. Doherty (Llanrwst Major); 3, Mrs. A. James (Newport). Dwarf cichlids: 1, A. Doherty (Llanrwst Major); 2 and 3, J. Burgess (Newport). A.O.V. cichlids: 1 and 2, W. H. Wood (Bridgend); 3, C. W. Garwell (Cardiff). Corydoras: 1 and 2, R. Harris (Newport); 3, J. Harris (Cardiff). A.O.V. catfish: 1, J. R. Wheeler (Troisbridge); 2, Mrs. A. James (Newport). A.O.V. egyptian: 1, J. Burgess (Newport); 2, R. S. Fagg (Llanrwst Major); 3, C. W. Garwell (Cardiff). Swordfish: 1, K. Ferrant (Llanrwst Major); 2, C. Cass (Troisbridge); 3, N. John (Newport). Platies: 1, R. Harris (Newport); 2 and 3, K. Ferrant (Llanrwst Major). Molluscs: 1 and 3, J. R. Wheeler (Troisbridge); 2, J. Burgess (Newport). A.O.V. freshwater: 1, J. Burgess (Newport); 2, P. Bartlett (Cardiff). Breeder egyptians: 1, Mrs. A. James (Newport); 2, A. Doherty (Llanrwst Major); 3, R. Harris (Newport). Breeder freshwater: 1, A. Doherty (Llanrwst Major); 2, J. R. Wheeler (Troisbridge); 3, R. Harris (Newport). A.V. coldwater fish: 1, J. R. Wheeler (Troisbridge); 2 and 3, C. Cass (Troisbridge). A.V. aquarist plant: 1, P. Bartlett (Cardiff); 2, J. Burgess (Newport); 3, A. Penthos (Newport). Juvenile classes: (1) A.V. egyptian: 1, A. Penthos (Bridgend); 2, C. Pease (Troisbridge); 3, B. Pomeroy (Bridgend). (2) A.V. freshwater: 1, N. John (Newport);

2, D. Barthol (Newport); 3, S. Pomeroy (Bridgend). Notice is given that the third annual dinner of the society is to be held on Saturday, December 11th, at the Trelawny Arms Hotel, Newport. Further information may be obtained from the Treasurer, Mr. C. W. Lewis, Top Flat, 28 Herengwyn Road, Newport, Mon.

The 19th annual dinner of the Llanrwst A.S. was held in October and the chairman, Mr. E. Ferrant, welcomed the 42 members and guests present.

In his toast to the Llanrwst Major Society, Jack Burgess of Newport, spoke of his visits to the shows and meetings, and the friends he had made in the society. He wished the society well in the future. The president, Alderman P. J. Smith, responded and thanked Mr. Burgess for the way in which he made the toast. He said how pleased he was to see the society still active after over 15 years since it was formed. At the time of Llanrwst Major being so small it was very difficult to keep an organization going.

Mr. Jim Sanders proposed the toast to the guests and thanked them for past support to the society. Mr. Wynn, the chairman of the Barry society responded and said this kind of social evening cemented the friendship of the local societies.

The president made the following trophy presentations: the W.C.M.M. Smith Cup for the member of the year to Mr. R. S. Wigg; the President's Cup for amateurs egyptians to Mr. A. Doherty. The Strangely Cup for Best fish at September show to Mrs. A. Doherty. The Mr. and Mrs. Ann Cup to Mr. R. Wigg for best furnished aquaria. Mrs. Taylor presented the Miles Thomas Points Cup to Mr. K. Ferrant. Mr. D. Julius presented the Jim Holmes Memorial Cup to Mr. W. Wood for breeder egyptians. Mr. S. Storr presented his own Guppy Cup to Mr. R. Wigg for best guppy. Meetings are held in the Town Hall, 1.30 p.m. second Tuesday. New members are always welcome. Hon. secretary, B. S. Wigg, 15, Han Lane South, Llanrwst Major.

NEWS from Britain Tropical Fish Club sessions that a new show containing 1966 has been elected. The show secretary is Mr. P. Barry, 18, Porton Road, Ashton, Bolton, 3. Because of the increasing number of new members larger accommodation has been found necessary and the club now meet at the Stag and Hounds, Old Market Street. The meeting night is still the third Thursday of every month. New members and visitors are always very welcome. One of the recent speakers was one of our own club members, Mr. F. Brown. His topic was sub-gravel filtration. This talk was greatly received and caused much discussion.

The Bradford and District A.S. monthly bulletin contains a report on the trip to Chester Zoo and an article on the grounds. In addition are the table show placings for the Thornley Memorial Trophy 36 positions as far being as follows: 1, Mr. C. Hildesworth (21 pts.); 2, Mrs. M. Firth (29 pts.); 3, Mr. H. Greenwood and Mr. J. R. Smith (14 pts.); 4, Mr. A. W. Gripps (13 pts.); 5, Mr. J. Hooper (11 pts.). The same aquaria competition results will be announced at the annual dinner.

The town bulletin of the Coventry Pool and Aquarium Society gives news of the presentation of a tropical furnished aquarium to the children's ward at Kennedy Hospital. The speaker at this first of the inter-society shows was Mr. Colin Ross, who spoke on tropical marine aquaria, and the present placings in the league are as follows: Page 21 pts.; Coventry 17 pts.; Tamworth 17 pts.; Altham 10 pts.; Leamington 10 pts.; Northampton 10 pts. The results of the same aquaria competition were: Tropical—1, Mrs. Farver; 2, Mrs. Hey; 3, Mr. Shorby and Mr. Mann (jointly). Coldwater—Mr. Bousfield.

The highlight of September for the Blackpool & Fylde A.S. was the 15th annual open show, for which a record number of entries was received. The judges were Mr. E. Peagley

and Mr. J. Hodgson who awarded the best fish in show trophy to Mr. E. Pellingor (Merseyside), with a Piranha.

The trophies for member with best fish and member gaining most awards were won by Mr. J. Smith of (Blackpool).

Members furnished tropical aquaria was won by Mr. G. N. Hadley (Blackpool), also the open individual. Goldwater Jackson Trophy, and Mr. J. Cross third. Open individual coldwater furnished aquaria, Blackpool & Fylde A.S. Challenge Trophy won by Mrs. G. N. Hadley, second Mr. B. Stammers (both of Blackpool). Goldwater Jackson Trophy, Mr. Karpinski (Blackpool); Sec. 1—1, Mr. W. H. Smith (Stretford); 2, Mr. Walsh (Blackburn); 3, Mr. Walsh (Blackburn); Sec. 2—1, Mr. Karpinski (Blackpool); 2, Mrs. Gidston (Preston & Barry); 3, Mr. Phillips (Ayrton). Sec. 3—1, Mr. Hill (Bolton); 2, Mr. Collings (Belle Vue); 3, Mrs. B. Wolfercroft (Haywood). Livebearers: Blackpool & Fylde A.S. Trophy. Winner Mr. Whitson (Lancs. Breeder Soc.); Sec. 1—1, Mr. J. Leonard (Gorton); 2, Mr. L. Howitt (Blackpool); 3, Mr. Davis (Cardiff). Sec. 2—1, Mrs. P. Nicholls (Ormsk); 2, Mr. Maxwell (Workop); 3, Mr. Dornie (Workop). Sec. 3—1, Mr. A. Buckley (Preston & Barry); 2, Mr. J. Leonard (Gorton); 3, Mr. Shaw (Ormsk); Sec. 4—1 and 2, Mr. Whitson (Lancs. Breeder Soc.); 3, Mr. Hillier (Cardiff). Characins: Sec. 1—1, Mr. L. McCourt (Gorton); 2, Mr. Dornie (Workop); 3, Mr. Hillier (Cardiff). Sec. 2—1, Mr. Pellingor (Merseyside); 2, Mrs. P. A. Nicholls (Ormsk); 3, Mr. Willie Stretford. Labridae (other than lightfish): 1, Mr. Gidston (Stretford); 2, Mr. Killebrew (Stretford); 3, Mr. L. Kaye (Huddersfield). Figures: 1, Mr. L. Kaye (Huddersfield); 2, Mr. A. Maxwell (Workop); 3, Mr. E. S. Brooks (Leeds). Minnows and Barbs: Paragon Trophy, Mr. K. Parkes (Merseyside). Sec. 1—1, Mr. Hughes (T.A.B.); 2, Mr. Davies (Hepworth); 3, Mr. Thomas (Merseyside). Sec. 2—1, Mr. Hughes (Belle Vue); 2, Mr. J. Smith (Blackpool); 3, Mr. K. Withraham (Ormsk). Sec. 3—1, Mr. Brunner (Garswood); 2, Mr. Gregory (Ormsk); 3, Mr. Pickup (Blackpool); Sec. 4—1, Mr. K. Parkes (Merseyside); 2, Mr. Hughes (T.A.B.); 3, Mr. Davies (Hepworth); 3, Mr. H. Pickup (Blackpool); 2, Mr. J. Wiles (Huddersfield); 3, Mr. Collings (Belle Vue). Sec. 2—1, Mr. Hill (Bolton); 2, Mr. Wood (Haywood); 3, Mr. Robinson (Stretford). Sec. 3—1, Mr. Hughes (T.A.B.); 2, Mrs. P. A. Nicholls (Ormsk); 3, Mr. B. Parkes (Merseyside); 3, Mr. Gregory (Ormsk); 3, Mr. Gidston (Stretford). Sec. 4—1, Mr. Hill (Bolton); 2, Mr. L. McCourt (Gorton); 3, Mr. L. Kaye (Huddersfield); 2, Mr. Barker (Blackpool); 3, Mr. A. Killebrew (Stretford); A.O.V. Tropical: 1, Mr. Hughes (T.A.B.); 2, Mr. K. Parkes (Merseyside); 3, Mr. G. Howard (Blackpool). Pairs Class: Mr. J. Smith (Blackpool), presented with a heater and thermostat by Mrs. Fisher. Sec. 1—1, Mr. Dornie (Workop); 2, Mr. Hill (Bolton); 3, Mr. J. Hayes (Blackpool). Sec. 2—1, Mr. J. Smith (Blackpool); 2, Mr. Swanson (Merseyside); 3, Mr. J. Smith (Blackpool). Breeder Class: 1, Mr. K. Withraham (Ormsk). Sec. 1—1, Mr. B. Stammers. Sec. 2—1, Mr. Shaw (Ormsk); 2, Mr. Davis (Cardiff); 3, Mr. Dornie (Workop). Sec. 3—1, Mr. K. Withraham; 2, Mr. K. Withraham (Ormsk); 3, Mr. J. Smith (Blackpool). Sec. 1—1, School's Furnished Aquaria won by Miss Ann Wakeling (Haworth Hall Co. Primary School); 2, Master K. Stammers; 3, Master G. Stammers (Blackpool). Sec. 2—Silver Challenge Shield, Schoolchildren's Individual Aquaria, same as Sec. 1.

The first September meeting of the Cardiff A.S. was not held as all the members attended the fish show arranged by the above society at the Cardiff Horticultural Show. The aim of this stand proved successful as at the following meeting, four prospective new members were present. At this meeting a discussion was held and the new members were invited to ask any questions they wished about the hobby. A talk on "Breeding and keeping guppyfish californicus old" was given by Mr. P. Bartlett.

and the traffic was won by Mr. C. W. Smith. Meetings are held on the second and fourth Thursdays of each month at The Old Arcade Inn, Church Street, Cardiff, commencing at 8.00 p.m. Visitors, new members and wives welcome. All enquiries should be sent to the honorary secretary, Mr. N. A. Connell, 29, Llanmorris, Road, Gwynedd, Cardiff.

**OBITUARY**

THE death is announced of Mr. G. Sosis, one of the active members of Nottingham Tropical Fishkeepers. Mr. Sosis was well known in the Nottingham and surrounding areas for his ponding of fish, and he will be greatly missed by the Society.

**MEMBERS** of the *Loyne Aquarists*, held the last of their monthly summer meetings recently. They were entertained by Mr. R. Smart of Widdowson, who, instead of giving a talk, asked members to ask any questions on any fishy subject. This proved to be very interesting and Mr. Smart was kept very busy for over two hours with questions ranging from fish breeding to the building of a fish house. Mr. Smart then judged the fish show with the following results: 1. Mr. J. Mills with a Rony Barb; 2. Mr. J. Goodger with an anglet; 3. Mr. G. Goodger with a sword-tail.

Members will now be meeting every fortnight during the winter months, and any one interested in fishkeeping are invited to attend. The secretary is Mr. J. Mills, 13, Brookfield View, Bolton-in-Sands.

AT the October Meeting of the *Pontefract & District A.S.*, members received a lecture on Aquarium Plants. The table shows were the cichlids and A.O.V. and the results were as follows: Cichlids: 1. Mr. Moorner; 2 and 3 Mr. Bailey. A.O.V.: 1. Mr. Cohen; 2. Mr. Bailey; 3. Mr. Morrison. The Society decided on a stronger advertising campaign hoping that this will attract new members for the coming year.

AT the end of September the *Wakefield and District A.S.* held an inter-society table show, judged by Mr. Skinner. The results of which were as follows: 1 and 2, Mr. Wakefield (York); 3, Mr. Turner (Wakefield). Mr. Meredith (Agriculture) then gave a talk on pond life illustrated with slides shown through a projection microscope.

At the October meeting of the *Wakefield and District A.S.* held at the Waterloo Hotel two table shows were held the results of which were as follows: Livebearers: 1 and 2, Mr. English; 3, Mr. Bennett. A.O.V.: 1, Mr. Bowyer; 2, Mr. Turner; 3, Mr. Cohen. At this meeting the members were entertained by a Hendon tape and slide lecture which proved extremely interesting and is recommended to other societies as an alternative to live speakers.

THE September meeting of the *Bath A.S.* consisted of a tape-recorded talk by Mr. L. E. Chivener, who is a Bath member, on plants and the setting up of tropical aquaria. This talk proved most interesting especially to some of the newcomers to the hobby. The rest of the evening was taken up by a table show which was judged by Mr. King and Mr. Overman both of Bath. The results are as follows: Livebearers: 1, Mr. E. Short; 2, Mr. Dismore; 3, Mr. Reeves. Cichlids: 1, Mr. Reeves; 2, Mr. Callow; 3, Mr. E. Short.

IN September, members of the *Independent A.S.* travelled by coach to a fish emporium in Cambridge, in order to purchase new fish and plants.

On the following night the members were engaged in an Inter-Club table show, with some very good fish on the bench and the winners were as follows: Angles: 1, F. Tomkins; 2, J. Kettle; 3, J. A. Chapman. Fishers: 1 and 2, J. Clarke; 3, J. E. Chapman. G. Bailey. A.O.V. Livebearers: 1 and 2, Miss A. Kettle; 3 and 4, J. Kettle. Danios, Bushwags, W.C.M.M.: 1 and 2, J. Clarke; 3, Miss A. Kettle; 4, J. Kettle.

A few weeks later the club organised another

outing, this time a motorcade to Marshall's Aquaria, Buckhurst Hill, now run by Independent members Fred and Margaret Caffell.

On the following Monday there was another table show which was a preview of the Inter-Club meeting on 25th October when Independent are hosts. The winners were as follows: Medias: 1, 2 and 4, Mrs. M. Caffell; 3, J. Banks. A.O.V. Cichlids: 1, B. Gales (best fish in show); 2 and 3, J. Kettle; 4, F. Caffell. Tropical Breeders: 1, F. Tomkins (winner of the Brooke Trophy); 2 and 4, J. A. Chapman; 3, J. Clarke. Goldfish Breeders: 1, 2 and 3, J. Clarke; 4, B. Rowell.

THE *Nottingham Tropical Fishkeepers* recently enjoyed an evening with an episcopal presence and coloured ponds together with a lecture given by Mr. Purdy, Vice-Chairman. The results of the table show were as follows: Cichlids: 1 and 3, Mrs. Scrimshaw; 2, Mr. Purdy. Medias: 1, Mr. Purdy; 2, Mr. Hart; 3, Mrs. Scrimshaw. A.O.V.: 1, Mr. Purdy; 2, Mr. Purdy; 3, Mr. Swain.

At the last meeting there was a very interesting and informative lecture on Plants given by Mr. A. Lindsey, who also very kindly commented on the judges for the evening table show, results as follows: Groupings: 1 and 3, Mrs. Scrimshaw; 2, Mr. Hart. White Clouds: 1, Mrs. Scrimshaw. Danios: 1, Mrs. Scrimshaw; 2, Mr. Hart.

New members would be welcomed and for any information regarding the club please contact the secretary, Mrs. H. Purdy, 37, Barkstead Road, Beeston Park, Notts.

**NEW SOCIETY**

A NEW club has been formed at Yate and will be known as *Yate and District A.S.* Meetings are to be held at Newmans Club the first Monday of the month at 7.30 p.m.

The officials appointed at the first meeting, which was attended by 12 members, were as follows:—Chairman, D. Baker; secretary, M. Pagler, 82 Highwood Crescent, Yate; official treasurer, R. Madzali; committee, K. Shield and J. Martin.

Anybody interested in tropical or coldwater fish is welcome to come along to any meeting.

THE *South London Section of the F.G.A.* held a meeting recently and there was a large attendance and plenty of enquiries for the table show. The results were:—Danios: 1, A. Goodall; 2, P. Summers; 3, G. Gale. Veiltail: 1, P. Summers; 2, R. George; 3, F. Baker; 4, R. Harris. Forzails: 1 and 2, A. Tarrant; 3, A. Jamison. Swordtails: 1, A. Jamison; 2, F. Baker; 3, Mrs. J. Summers. Colour class: 1, A. Goodall; 2, A. Gale; 3, G. Gale. Superba females: 1 and 2, G. Goodall; 3, A. Jamison; 4, T. Hibbert. Wadgers: 1, D. Ford; 2, A. Tarrant. Original fish: 1, A. Jamison. Breeders families: 1, T. Hibbert; 2, A. Jamison. Breeders males: 1 and 2, R. Murrell; 3, A. Jamison. Breeders pairs: 1, R. Murrell; 2, P. Summers.

THE annual open show of the *Hadfield Section of the F.G.A.* was held recently and there were 282 entries. The results of the show were as follows:—Daisy rulers: 1, A. W. Goodall; 2, G. Gales; 3, P. Summers; 4, A. W. Goodall. Veiltail: 1, T. Hale; 2, H. Harris; 3, R. George; 4, P. Summers. Panda: 1 and 2, A. W. Goodall. Swordtail: 1 and 2, G. Goodall; 3, D. King; 4, T. Hale. Plug and sword: 1 and 2, R. Clarke; 3, G. Goodall; 4, T. Hale. Colour males: 1, G. Goodall; 2, A. W. Goodall; 3, Rose Arford; 4, G. Arford. A.O.V. males: 1, G. Arford; 2, G. Goodall; 3, H. Harris; 4, A. Park. Breeders males: 1, G. Goodall; 2, W. Murrell; 3, A. W. Goodall; 4, B. Bennett and J. Jeffrey. Superba females: 1, G. Goodall; 2 and 4, H. Harris; 3, T. Hibbert. Scalloptail: 1, R. Hawkins; 2, A. Park. Wedgetail: 1, A. Park; 2, R. Bennett and J. Jeffrey. Oreganetail: 1, G. Arford. A.O.V. female: 1, H. Harris. Breeders females: 1, E. Dymore; 2, Dr. Atkins; 3, G. Goodall; 4, S. Burgess. Breeders pairs: 1, W. Murrell; 2, A. W. Goodall; 3, G. Goodall; 4, R. Bennett and J. Jeffrey. Master breeders team: 1, E. Dymore; 2, R. Bennett and J. Jeffrey; 3, P. Summers; 4, D. King. Junior breeders: 1,

Faithie Monk. Best male, A. W. Goodall (daisy). Best female, W. Murrell. Best fish in show, A. W. Goodall (daisy).

THE open show of the *Seaham and District A.S.* attracted 239 entries and the results were as follows:—A.V. guppy: 1, D. Payne (Horden); 2, C. Simpson (Peters); 3, J. Reid (Newcastle); 4, J. Robertson (Newcastle). A.V. paddle: 1, F. Panton (Hartlepool); 2, S. Withers (Seaham); 3, B. Abbey (Hartlepool); 4, A. Bailey (independent). A.V. swordtail: 1, D. Panton (Newcastle); 2, M. Whitley (Seaham); 3, A. Bailey (independent); 4, R. Dean (Seaham). A.V. livebearer: 1 and 2, R. Kirkpatrick (Newcastle); 3, H. Stiel (Seaham); 4, Mr. Faircliff (Tadcaster). A.V. barb (small): 1, A. E. Whitlock (Tadcaster); 2, R. Skyles (Newcastle); 3, D. Panton (Horden); 4, M. Hamblett (Tadcaster). A.V. barb (large): 1, R. Adamson (independent); 2, E. M. Smith (Seaham); 3, A. Bailey (independent). A.V. channa: 1, E. M. Smith (Seaham); 2, R. Adamson (independent); 3, W. Payer (Hartlepool); 4, A. Bailey (independent). A.V. lybriach: 1 and 2, A. Bailey (independent); 3, H. M. Smith (Seaham); 4, Mr. Watson (Newcastle). A.V. sphinx: 1, A. E. Whitlock (Tadcaster); 2 and 3, J. Barker (Tadcaster); 4, J. Wallace (independent). A.V. cichlid (small): 1, Mr. Greenall (Tadcaster); 2, J. Faircliff (Tadcaster); 3, J. Robertson (Peters); 4, M. Hamblett (Tadcaster). A.V. cichlid (large): 1, J. Robertson (Peters); 2, R. Abbey (Hartlepool); 3, F. Wallace (independent); 4, M. Robertson (Peters). A.V. catfish or loach: 1, A. Trotter (Seaham); 2, R. Skyles (Newcastle); 3, R. Caterham (Tadcaster); 4, J. Faircliff (Tadcaster). A.V. rainbow and minnow: 1, N. Rumbold (Tadcaster); 2, J. Robertson (Peters); 3, M. Robertson (Newcastle); 4, G. Lamb (Seaham). A.O.V. eel: 1, E. M. Smith (Seaham); 2, J. Faircliff (Tadcaster); 3, N. Rumbold (Tadcaster); 4, R. Barnes (independent). Breeders egg-layers: 1, N. Faircliff (Tadcaster); 2 and 3, R. Caterham (Tadcaster); 4, R. Barnes (independent). Breeders livebearers: 1, J. Robertson (Newcastle); 2 and 3, J. Reid (Newcastle); 4, N. Faircliff (Tadcaster). Breeding pairs: 1, R. Hay (Hartlepool); 2, L. Greenhall (Tadcaster); 3, R. Adamson (independent); 4, N. Faircliff (Tadcaster). A.V. goldwater: 1, G. Hain (Seaham); 2, G. Lamb (Seaham); 3, A. Trotter (Seaham); 4, E. Dymore (Newcastle). Parrotfish: 1 and 2, J. Reid (Newcastle); 3, J. Robertson (Newcastle); 4, A. Bailey (independent). Pet goldfish: 1 and 2, L. Stiel (Seaham); 3, M. Duggan (Seaham); 4, F. Todd (independent). Best fish in show: Mr. R. Adamson (South Shields), yellow fin barb (84 points).

**Crossword Solution**

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

FOR THE BEST FISH-FOOD

## McLYNN'S FISH-FOOD

THE FOOD  
IN THE PLASTIC BOX  
1/6, 2/6, 5/-, 6/6 & 17/6  
THE DIET FISH PREFER  
CONTAINS EVERY  
ESSENTIAL INGREDIENT  
WILL NOT FOUL THE WATER

*From your Pet Shop or direct from:*

FOR THE BEST BOOK

"ALL ABOUT  
TROPICAL FISH"  
by D. McINERNEY OF  
McLYNN'S AQUARIUM  
75/- Postage 3/-



FOR THE BEST FISH & PLANTS

## McLYNN'S AQUARIUM

VISITORS WELCOME  
BY APPOINTMENT

11 a.m.—5 p.m. CLOSED  
ALL DAY WEDNESDAY

BUY DIRECT FROM  
THE BREEDER

*ALL STOCK FREE FROM DISEASE  
SOLD UNDER A WEEK'S  
GUARANTEE*

DEMAND SO GREAT, SALES LIMITED,  
TO CALLERS ONLY

### McLYNN'S AQUARIUM

EWHURST, Nr. CRANLEIGH, SURREY

Telephone: EWHURST 446

## New from Denmark

**Vacation Food.** When taking your holiday, drop one Hykro Vacation Block in your tank. This will feed your fish in an average size tank for at least 2 weeks and does not foul the water.

**Also New.** Nylon Clamps, Tees and 4 ways. These are as strong as metal, do not wear or rust; obtainable at all good Aquarist and Pet Shops.

**Hykro Foods.** Although reasonable in price are still the best and stocked by all good retailers.

## JOE GRASSBY

The Hykro Depot, Mobberley, Nr Knutsford, Cheshire

## STOP PRESS!

### NEW VITAKRAFT REMEDIES and AIDS.

- ANTIMALADIN—against Whitespot 4/-
- CHLORNEUTRAL—chlorine Neutraliser 4/-
- FLORASIN—Plant food 4/10
- MULTI-VT-MIN—Vitamin Complex for marvellous colours 8/8



Find out for yourself why these foods by Vitakraft-Werk H. Wuhmann—Germany's biggest fishfood manufacturer—are best sellers in so many countries. In your dealers now.

Vitawil	Staple food	2/-	3/-	6/9d	22/6d	70/-
Vitality	Conditioning food	3/6d	6/9d			
Nature	Growth food	3/6d	6/9d			
Rosawil	Colour food	3/6d	6/9d			

**INTER-PET** 18 Church Street - Dorking - Surrey

## JOHN COLLINS

Hathaway - No Mans Heath - Tamworth - Staffs.  
Phone Newton Regis 358

### Mail Order Service

Aquariums, Stands and Hoods  
"Up to a quality—not down to a price"  
Free delivery service—50 miles radius Birmingham

### All reputable brands of equipment stocked

Please send for free lists

### Assortments

of Tropical Plants 12/6 17/6 25/- each

### Cultures

of White Worm, Micro and Grindal Worm, 2/6 each

### Examples of Aquarium Hoods

All Over, Aluminium  
18 x 10 19/6 painted  
24 x 12 26/6 painted  
36½ x 12 32/6 painted  
Special sizes made to order

All orders over £1-0-0 will include special opening Xmas gift offer. Value at least 2/6d.

### Traders!

Can we supply you with tanks, stands and hoods. Full Trade discount



**USE**  
**"CORAL"**  
**AS**  
**YOUR**  
**BASIC FOOD**

It is a **BALANCED**  
**PROTEIN DIET**, not  
just a cereal filler.

From dealers in 6d., 1/-, 2/- drums.

**Keep Them Healthy on Coral**

**"CORAL" FISH FOOD**  
For **TROPICAL & COLDWATER FISH**  
A **STAPLE DIET**. The best fish dash for and **thrive on**.  
**PLEASE FEED SPARINGLY**  
Once per day only.  
The safe and economical food.  
Manufactured by **LIVERINE LTD.**  
GRIMSBY, ENGLAND.





## DRIED TUBIFEX

THIS WONDERFUL NATURAL FOOD  
FOR ALL FISH NOW AVAILABLE  
AT ALL GOOD PET STORES

Also "STIMULITE" brand of Goldfish  
and Tropical Fish Foods

If any difficulty in purchasing, please send the name  
and address of your nearest dealer, postage refunded

WHOLESALE DISTRIBUTORS REQUIRED

Write to:

**P. H. Hastings Ltd.**  
**182, SULTAN ROAD, PORTSMOUTH**

SOLE IMPORTERS AND DISTRIBUTORS FOR EUROPE



## CONRAD A. DOWDING

AQUARIST & PET SUPPLIER  
Breeder and supplier of Tropical Fish  
British and Foreign Cage Birds  
Softbills and Nectar Feeders a Speciality

MEMBER  
OF  
THE PET TRADE  
ASSOCIATION  
LTD.

1 ST. JOHNS TERRACE, LEWES, SUSSEX

Tel: LEWES 3970

Telegraphic Address: "CAD LEWES"

Always a large selection of Tropical Fish in stock, including many unusual varieties. All fish in first class condition.  
Stockist of "Arbe" Aquariums, Angle Iron tanks, Bookcase units etc. All foods and appliances.

### Suggestions for Christmas:—

**BOOKS** 'All about Tropical Fish', by D. McIver, 75/-; 'Encyclopedia of Tropical Fish', Adria & Verduwiler, 60/-; 'Dictionary of Tropical Fish', Hans Froy, 65/-; 'Aquarium Plants', H. C. De Wit, 35/-; 'Tropical Fish in the Aquarium', by J. M. Leitch, 16/-; 'Educational Aquarium', T. F. H. 12/-; 'Tropical Fish and Fish Tanks', R. Dutoy, 8/-; 'Living with Reptiles', K. Pichard-Smith, 18/-; 'Reptiles and Amphibians of Europe', by W. Hellmich, 16/-; 'Flourish and Soft-billed Birds', Bates & Bosenbark, 75/-; 'Parrots and Related Birds', by Bates and Bosenbark, 75/-; 'Tropical's Digest on the Diseases of Birds', 45/-; 'Parrots Birds in Colour', by A. Rutgers, 18/-; 'Tropical Aquarium Fish in Colour', by G. Heron, 9.6. Postage extra. 1/- up to £1, 1/6 to £2, orders over £2, 2/6.

Tropical Aquariums installed and maintained. 'Why not let us quote?' We also stock and specialise in Foreign Birds, Humming Birds, Sugar Birds, Tanagers etc. and always carry a large selection. Please write for Lists.

Hours of Business: Monday—Thursday 9 a.m.—4 p.m., Friday and Saturday 9 a.m.—8 p.m. E.C.O. Wednesday.  
Closed 1 p.m.—2 p.m. every day.

**PLEASE NOTE** that during Christmas week, 26th—24th December we shall remain open until 8 p.m. every night,  
including Wednesday 22nd.  
Evenings and Sundays by appointment only.



# Announcement

by TETRACRAFT LTD., 11 Station Road, Marlow, Bucks.

## Revised Prices of all Tetramin Aquarium Products effective from 15th October

	Retail Price		Retail Price
<b>TETRAMIN STAPLE FOOD</b>		<b>TETRACARE REMEDIES</b>	
No. 1 one-unit size	1/11	Blackwater Toxin	4/6
No. 2 two-unit size	3/3	General Toxin	5/3 (inc. P.T.)
No. 3 five-unit size	7/6	Contra Ick	5/3 (inc. P.T.)
No. 4 twenty-unit size	24/6	Fungi stop	5/3 (inc. P.T.)
No. 5 hundred-unit size	87/3	Fluoropide	4/6
Tablet food	3/-	Contra chlorine	4/6
Large flakes	7/6	Blackwater Toxin 1 pint	22/-
Tetramin	4/3	Contra Ick 1 pint	27/6 (inc. P.T.)
<b>TETRAMIN SPECIAL FOODS</b>		<b>TETRAMIN BRINE SHRIMP</b>	
Hahnst guppy food	4/3	4 c.c.m. tubes	1/9
Unworth food	4/3	10 c.c.m. tubes	2/9
Constant food	4/3	30 c.c.m. tubes	6/-
Colopside	4/3	1 litre tin	40/-
Baby food—Livebearer	2/3	Brine shrimp sieves	5/6
Baby food—Egglayer	2/3	Sieve sets	25/-
<b>TETRAMIN MARINE FOODS</b>		<b>BRIGHT FILTERS</b>	
Tetramarin flakes	4/3	Complete single filter	18/-
Tetramarin tube	4/3	Spare sponges	4/6
<b>TETRAMIN GOLDFISH FOOD</b>		Hoods for terrages	4/6
No. 1 two-unit size	1/10	Plastic sucker holders	9/6
No. 2 five-unit size	3/10		
No. 3 twenty-unit size	12/6		

## MAPSON AQUARIA

TROPICAL FISH SPECIALISTS  
100 varieties in stock including marines  
all fully quarantined  
Large range tanks and equipment, tanks and stands  
made to your design  
Daphnia and Tubifex usually available  
Hours 9.30 a.m.—4 p.m. 8 p.m. Fridays  
Closed all day Wednesday  
**64 VICTORIA ST. BRISTOL 1.**  
Phone 34291  
Four minutes from Temple Meads  
Run by a hobbyist for hobbyists

## A Tropical Aquaria in Falmouth

contains everything for the Aquarist including  
over 50 varieties of Tropical Fish, Plants, Aquariums,  
Heaters, Thermometers, Pumps and all accessories  
Come and see our colourful display  
We will gladly advise you on starting your own  
Aquarium  
**Marine Facilities Limited**  
Custom House Quay, Falmouth Tel. No. 88

## GOT A TIGER IN YOUR TANK?

THEN WE CAN'T HELP YOU.  
WE SUGGEST YOU TRY A  
BUTCHER . . .  
BUT IF YOU KEEP FISH—  
COLD WATER, TROPICAL, FAMILIAR,  
EXOTIC, RARE, VALUABLE, OR  
SIMPLY SWOPPED FOR A JAM JAR—  
**ELITE** IS THE FOOD FOR YOU

**ELITE (Tropical) 2/- and 5/-**  
**ELITE (Coldwater) Large Tin 2/6**

Trobs Agent:  
Barry M. Austin,  
230 Staines Road, Twickenham, Middlesex.

Or Post Free direct from the original makers:  
**DERHAM'S FISH FOODS LTD.**  
'Roxton Dene', South Rd., Chorleywood, Herts.  
Phone: Chorleywood 2386



QUALITY AQUATIC FOODS



HI-GLOW 30  
COLOUR FOOD  
4/6

Try some and see the  
difference

Just one of the superlative  
range of Wardley's quality  
Aquatic Foods  
distributed by

T.F.H. PUBLICATIONS (LONDON) LTD.  
13 NUTLEY LANE REIGATE SURREY

WHY NOT SEND  
THE TROPICAL FISH HOBBYIST  
AS A  
CHRISTMAS PRESENT THIS YEAR?  
IT'S SO EASY! AND WELCOME!  
TWELVE TIMES A YEAR!

Just complete the form below and we will do  
the rest.

To T.F.H. Publications (London) Ltd.,  
13, Nutley Lane, Reigate, Surrey.

Please send the TROPICAL FISH HOBBYIST for  
one year starting \_\_\_\_\_ month to

Name \_\_\_\_\_ } Black  
\_\_\_\_\_ } letters  
\_\_\_\_\_ } please.

And indicate with the first issue that this is being sent with the  
compliments of \_\_\_\_\_

I enclose Postal Order/Cheque for 35/- (12 issues at 2/6, plus  
5/- postage.)

**REPTILES — AMPHIBIANS**

*Imports from all Continents*

*Write for current price list*

*Sole agency for England:*

**MR. ALAN COOK**

"The Anton",

Beechwood Drive, Eaton, Congleton, Cheshire

DRS. W. DE ROYER  
Ericalean 9  
Ermelo, Holland

**W. HAROLD COTTON**

F.R.N.S.

**ICHTHYONOTOMIST**

**POST MORTEM EXAMINATION  
of Tropical and Coldwater fishes**

*Specimens should be wrapped loosely and very wet in grease-  
proof paper, surrounded by a damp cloth and then re-wrapped in  
dry greaseproof paper and sent in a strong container.*

*A brief history and any relevant details should be given. No  
preservatives please.*

Examination fee 2/-

39, BROOK LANE, KINGS HEATH,  
BIRMINGHAM 14  
Phone HIGhbury 1893

**P**UDDINGS ARE PROVED BY EATING

Don't spend another penny on charcoal until you have tested  
a free sample of  
**MAXSORB ACTIVATED CHARCOAL**

Pieces all the same size, no grains so no money down the drain. Does not float.  
Clarifies where others fail.

Send now for a free sample and easy but powerful test to

**REGAL TETRA LTD.** 133 SIRDAR ROAD, N.22. Phone: NOR 5281

## PREPAID ADVERTISEMENTS

5d per word (12 words minimum) Box number 2/- extra

### FOR SALE

**PERRY'S** for Plants. 1st and 2nd Awards British Aquarist's Festival. Assorted selections Tropical or Cold 7s. 6d., 10s. 6d., 12s. 6d. Val. Fern, Sagittaria Natans, 6s. per dozen. Cryptocoryne Cordata 1s. 6d. to 2s. 6d.; Willisia 2s. 6d.; Haerostium 2s. 6d.; seven assorted 10s.; Water Wisteria, Giant Hygrophila 2s. 6d. Post Is. All Advertised Accessories. C. R. Perry, Professional Aquarist, 613, West Street, Crews.

**AQUARIA FRAMES.** For quality and accuracy buy direct from the manufacturer. 1 x 1 x 1 in. steel angle: 36" x 15 x 15 in., 27s; 36" x 12 x 12 in., 24s; 30 x 15 x 15 in., 24s, 6d.; 30 x 15 x 12 in., 24s; 30 x 12 x 12 in., 24s, 6d.; 24 x 12 x 12 in., 22s, 6d.; 40s; 18 x 15 in., 15s; 18 x 12 in., 16s, 6d. from 1 x 1 x 1 in. All mitered and welded ground flush. Carriage paid. Any size made to order. C.W.O. Money refunded if not satisfactory. For complete list, stands, shades, etc., see to J. E. Henney, 52, Charter Street, Ayrington. Phone Ayrington 34535.

**WHEN IN STOCK** visit Beatty's for tropical fish, plants and accessories. Finest selection for the aquarist in the Province. 16, Marshall Road, Stoke-on-Trent. Phone 48353.

**CALLING ALL AQUARISTS.** Call and see our large selection of Tropical and Coldwater fish, Plants in variety. We also stock all accessories at "The Aquarium," 192, Wellingborough Road, Northampton. Phone 34610.

**RUSTPROOFED Aquariums** Finest including bow and scaper type. Ornamental Stands, Glazing, Glass and Equipment Manufacturers. Wesley's Barton, Ormskirk.

**GLAZED aquaria** in all sizes including 36" x 15 x 12, 75s. 6d.; 18 x 10 x 10, 17s. 6d.; 24 x 12 = 17, 42s. 6d., tanks dispatched in any part of Britain, outside extra. Plants, Accessories, Fish. Wright's, 10, Laine Road, London, N.A. Phone Anthony 3925.

**TROPICAL FISH** fully quarantined, over 100 species offered at lowest prices. All aquarist's requirements supplied. Personal shoppers only. Sterling Fisheries, 62, Mayes Road, Wood Green, N.22.

**GUARANTEED** thermostat, heater and thermometer, 20s. post paid. State heater wastage. Sterling Fisheries, 62, Mayes Road, N.22.

**AQUARISTS.** Mr. Joseph Sanley, late of Northfield and Worcester Street, Birmingham, is now in attendance for the sale of all aquaria and requisites. Also glass-fibre pools, fountains, waterfalls, pool-side goldfish, and advice on all fish problems at: Furness, Bull Ring Centre Market, Birmingham, MID 5569.

**AQUARIUM STANDS, frames, shades.** Stands to take 2 tanks, 1 x 1 x 1 in. steel angle: 18" x 12 x 36 in., high, 32s.; 24" x 12 x 36 in., high, 36s.; 30" x 12 x 36 in., high, 40s.; 36" x 12 x 36 in., high, 44s.; 30" x 15 x 12 in., 28s. Large frames, 1 1/2 x 1 1/2 x 1 1/2 in. steel angle: 48" x 12 x 12 in., 47s.; 48" x 15 x 12 in., 50s.; 48" x 15 x 15 in., 55s.; 60" x 12 x 12 in., 60s.; 60" x 15 x 15 in., 65s. Stands: 48" x 12 x 36 in., high, 70s.; 48" x 15 x 36 in., high, 75s.; 60" x 12 x 36 in., high, 80s. Aluminium shades: 48" x 12 in., 40s.; 48" x 15 in., 46s.; 60" x 12 in., 56s.; 60" x 15 in., 64s.; 24" x 12 in., 21s.; 30" x 12 in., 26s.; 36" x 12 in., 30s. Any size frame, stand and shade made to order, care paid. Money back if not satisfied. Hackney Engineers, 35-37, Somers Street, Leeds, 1. Tel. 25061.

**PLYMOUTH TROPICALS** for fish, plants and equipment. 127, North Road, Plymouth. Tel. 62663.

**MICRO WORMS BY RETURN** Super Starter Culture, only 1s. 6d.

**GRINDAL WORMS BY RETURN.** Super Starter Culture, 3s.

**WHITE WORMS BY RETURN.** Super Starter Culture, 3s. All above cultures, post paid, with instructions. D. Jett, 10 Lee Road, Bowers Gifford, Banlilan, Essex.

**THE CUT PRICE** aquarist's king strikes again. Our aquarists are the lowest prices obtainable: 24" x 12 x 12, 29s. 6d., or including fully guaranteed heater thermostat thermometer 39s. 6d., carriage 13s. 6d. extra. 36" x 15 x 12, as above, 99s. 6d., all aquarist's accessories sent post free, special size aquaria made to order. All tropical fish at lowest prices, example, new tetras, 2s. or 12 for 20s. Norwood Aquarium, 96A Norwood High Street, London, S.E.27. QIP 6908. (Corner Rathfield Street).

**TROPICAL FISH** in variety. By rail anywhere. S.A.E. for list. Naylor, 44 Duxley Dean Road, Holly Oak, Birmingham. 382, 3773.

**FATFELVE'S FISHBIRIES (TROPICAL) LTD.** for quality tropicals and aquatic plants. Suppliers to the trade only. Write, phone or call: 62, Lamb's Conduit Street, London, W.C.1. Holborn 3002 and Willaden 4312.

**SUPERS VILTAL GUPPIES.** Awarded "Water Life" diploma. Best in open show. £1 per pair, carriage 3s. 6d. C. R. Perry's Professional Aquarist, 613, West Street, Crews.

**TIME SWITCHES** recommended, 14 day clock, noise on once off every 24 hours, jerrilled movement, fully guaranteed. Venger 1 amp, 25s.; Hartmann 10 amp, 35s. F. and P. 2s. 6d. A. B. Hutchler, 4 Park Road, Hoveley, Kent.

**COVENTRY CALLING ALL AQUARISTS,** for the finest display of tropical and coldwater fish, plants and all equipment. Visit "The Coventry Aquarist," 43 Melbourn Road, Coventry.

**SUPER PET STORES,** 116 Vauxhall Street, Blackburn. Tel. 25048. Tropical and Coldwater Fish and Plants. Plastic coated

tanks, Bow tanks and wrought iron stands, second hand tanks and stands usually for sale. All accessories, etc.

**TAYLOR'S AQUARIUM,** 76 Manchester Road, Burnley. Tel. 28542. Quality aquaria plants and speciality. Complete selection equipment, accessories, tanks, stands, etc. Rare varieties tropicals available.

**HERTFORDSHIRE AND NORTH MIDDLESEX.** Large variety of tropical fish, plants and equipment always available. Dealers surplus purchased. Cuffey 2214, 105, Palmers Road, Cuffey, Herts. **CHILTENHAM AQUATICS** (Prop. Mr. B. K. James). Largest selection of Tropical and Coldwater fish in Gloucestershire. Broomfield and Scintless steel aquaria Equipment, Replicas and Amphibia and everything for the Water garden. 11, Suffolk Parade. Tel. Cheltenham 24848.

**NEWLY** identified by Kew Botanists. *Limnophila Arumata*—Reddish stems; serrated long leaves. Green uppermost shaded red veins. 4 strong plants 10s. Nonparasitic other rare and common plants for the Trade and Private Aquarist.—J. Ellis, Hasting, Geinsby. Tel. Hasting 22073.

**OLDBURY'S OF CHESTER,** 100 Victoria Tropical Fish, Plants, Equipment, Tubifics. Evenings after 7 p.m. Also weekends.—36, Peel Lane, Vicars Cross, Chester. Tel. 41671.

**AQUARIA.** Frames and stands. S.A.E. for list. Dodmond Engineering Co. 43, Baker Avenue, Stratford-on-Avon.

**FISH SALES.** "Handbook of Tropical Aquarium Fishes," by Andrew A. Schultz, 75s. Over 150s. new. "All About Tropical Fish," 35s. Both as new.

**WHITE WORM BY WEIGHT.** 1 oz., 4s.; 4 oz., 15s. Post paid. Visit our Hatchery—Fish and Plants in variety. Duns & Son, Denford Aquaria, Alconier Road, Parkway, via Alrechurch, Wotton-under-Edge, Wythall 2382.

**TOP** quality Stock at bargain prices. Immediate Dispatch. No waiting. Live delivery guaranteed. Carriage, Birds 4s.1. Animals, Boulders, 6s. Easy terms arranged. Badgers—Greys, greys, blues, 70s. pair. Six assorted pairs, £13 10s. Ponds, lanterns, albatross, rain-bow, violas, whitewings, 70s. pair. Six assorted pairs, £19.

19s. pair. Indian quail, 35s. pair. Painted quail, 45s. pair. Yorkshire canaries, £5 pair. Parakeets, £12 pair. Assorted foreign finches, six pairs, 4s.; twelve pairs, £4. Indian bulbuls, miniature mynahs, 25s. Hill mynahs, 70s. Indian owls, £8. Large larks, £20. Large plovers, eagles, £8. Small falcons, £10. Pigeon squabblers, 25s.; pairs, 45s. Pigeon montgomerie, £8. Giant montgomerie, £12. Tame great cats, £25. Marmoset monkeys, £8. Squirrel monkey, £15. Spider monkey, £30. True pair Arctic blue larks, £30. Marine toads, horned toads, skinks, geckos, blood lizards, small iguanas, 25s. Red sand boas, 60s.; golden water snakes, giant seal snakes, red-legged tortoises, £8. Water monitors, £8. Giant monitors, 3 ft. box construction, £70. 4 ft. box construction, giant iguanas, £20. 2 ft. iguanas, basilisks, £2. 1 ft. iguanas, £3. D. I. TAYLOR, Newmarket Bird Farm, Claycross, Chatterfield, Derby. Phone Claycross 1906.

**OUTDOOR POOL BRED.** A few surplus hardy Yorkshire bred for disposal from exhibition stock of Calico Veillets, Fantails, Shubunkins, Red Scaled Fantails. In colour and coming in colour: Orandas, Golden Lombards, Pearl Scales, real Black Moons, Golden Tails, Golden Orfs, Golden Rudd. From 2s. 6d. each. Aquarium grown or pond plants from 3s. doz. Stamp for list. H. North, 2, Leonard Place, Off Broadway Road, Leeds 7.

**BRITISH AND BEST** McLyne's fish food.

**CULTIVATED AQUARIUM PLANTS.** Equis Dross, Vallis Ferns, Sag. Natans, Myrio., Verticillium, Lambwort, Mollus, Hygrophila Polysperma, 6d. each or 4c. per dozen. Giant Sag., Giant Bacopa, Red and Green Cabomba, Microsarrhenon, Vallis Spiralis, Lysimachia Nummularia, 6d. each or 6c. per dozen. Giant Vallis, 1s. 6d. each. Quillwort Rush, 1s. 6d. each. Crypto Gilaria, 2s. each. Echino Species, 2s. 3d. each. Botton Ferns, 2s. 3d. each. Batana Plants, 2s. 6d. each. Crypto Haerostium, 3s. each. Apogonon Undulatum, 3s. each. Radicans, 7s. 6d. each. Cape Post Squarredocks, 7s. 6d. each. Water Wisteria, 1s. 6d. each. Echino Major, 13s. each. All orders taken in strict rotation, please add Is. post and packing on orders under 12s. 6d. Victoria Aquaria, Stairias, Saltburn, Yorks.

**EXCELLENT** Paddy Grappin, Championship Strain, also Blue Dacca. Postage after seven. "Wayside," Peel Lane, Little Hulton, Manchester.

**THERE** was a young lady from Bray,  
Said by fish tank was cloudy and grey,  
Since she fed them McLyne's,  
It's as clear as two peas.

No more mud in the eye, as they say.

**BLANKET WEED REMOVER.** This device is an unique, effective, and original as the shredder. Made of stainless steel, it will remove blanket weed from aquaria without damaging plants. Price 3s. 6d. plus 5d. postage. **SHRODDERS** for White Worm, Earthworm, Must etc., etc. I can now offer the Super Shredders Combination at 28s. plus 1s. postage. This comprises the usual fine toothed plate, a coarse toothed plate and the top plate with handle; a perfect combination in stainless steel. **GIANT SAGITTARIA,** as supplied to London Zoo; suitable for tropical or coldwater aquaria, also ponds. Young plants, 6s., 1s. 6d. or 3s. 6d. dozen. Large plants 1s. 3d. and 1s. 6d. each. Postage 1s. 3d. **SHUBUNKINS** from prize-winning strain. S.A.E. for particulars. Fish used by aquarists every. H. S. Walker, 143/45, Bow Lane, Christchurch, P.S.—Postal trade only. Local purchasers can obtain supplies from Cook's Aquaria, Rombe.

continued on page 871

PREPAID ADVERTISEMENTS—continued from page 871

#### FOR SALE

**GREENS OF BLACKPOOL** for tropical and coldwater fish, plants, tanks and accessories. Open daily 10.30 p.m. (Wednesday, 1.30 p.m.), Sunday, 10 a.m. to 1 p.m. 207, Waterloo Road, South Shore. Telephone 43669.

McLYNN'S fish food sends 'em, so send for McLYNN'S.

**SCOTLAND**—One of Scotland's largest dealers of Tropical Fish and Plants. We also manufacture aquarium and stands to customers specifications. All leading brands of aquarium and pet requisites stocked. Open Sunday, 12-5.30. Aquaticum Installations, 84, Calder Street, Blawie, Near Glasgow. Tel. 2307.

**GUARANTEED QUALITY PLANTS**—Ambulia, Hygrophila, Bacopa, Ludwigia, Dwarf Amazon, Dwarf Sagittaria, Sagittaria, Vallisneria spiralis, Java, Hairgrass, 6d., 7d., 6d. stems; Berkett, Cabomba, Round Indian Fern, 1c., 6d., 15c., 6d.; Wisteria, Giant Hygrophila, Dwarf Lily, C. Geranioides, Cordata, 2c. each.—Antonia Beard, Cape Fear Spouterock, 8c., 6d. each. Mors, Grindal worms, 2c., 6d. Post 6d. all orders. Over 120 varieties tropical fish, personal shoppers only. Kingsharrow, 189, Croydon Road, Rockingham, Kent. BR 3716. Closed Wednesdays.

#### WANTED

**WANTED, TOP PRICES** paid for good quality plants and fish. Super Pet Stores, 114 Victoria Street, Blackburn. Tel: 53049.

**AQUARIUM MAGAZINES AND BOOKS WANTED**—Especially pre-war English magazines and pre-1918 American magazines. Please send titles, date and price required to Box 7298, The Aquarist, The Barn, Brentford, Middlesex.

**FISH BOOK** (Avalon, Home) state price. Duberry, 82, Beach Ave., Swanton, Wis.

#### PLAQUES, SHIELDS, ETC.

**E. HOLTON & SON**, 309, Oldbury Road, Southwick, 41, Flaxton, Lincoln, Lincoln, Cops and Medallions for Aquarists and Bird Societies. Trophies and Coldwater fish names in full colour. Write for details to above.

#### REPAIRS

**GUARANTEED HEATER REBUILDS**, 5s., 6d. each. Send old heaters and state wattage required. New heaters, year's guarantee, 8s., 6d. All by return. J. Weir, 7, The Drive, Witley.

#### MISCELLANEOUS

**THE LOWEST POSSIBLE PRICES** for REALLY GOOD FURNITURE, CARPETS and FURNISHINGS consistent with the quality of service, display and availability of ample stock that Members of A.W.B.S.A. require, are guaranteed by our very long standing experience of almost 25 years in this trade. We have supplied thousands of your colleagues and look forward to you contacting us with your furnishing orders and requirements large and small. Car and van. **GRIFFITHS HACKNEY CABINET COMPANY LIMITED**, 54, Great Eastern Street, London, E.C.2. Telephone: Shoreditch 4431/2/3. Open Saturdays to 12.45. Thursdays to 1.30. Other weekdays to 5.30.

#### PROPERTY FOR SALE

**COPTHORNE, SUSSEX**. Fine modern luxury bungalow in superb woodland setting, central heating, 3/4 beds, large lounge, dining room, bath, kitchen, conservatory, laundry room, double garage, 20 ft. heated fish house and numerous fish ponds, in all 1 acre. Taylor & Tetton, Ban Gwenton. Tel. 8478.

#### APPOINTMENTS VACANT

**MANAGER** required for modern aquarium and pet shop in Surrey. Accommodation is provided. This is a unique opportunity for a married couple, preferably without children. It is essential that applicants have a thorough knowledge of all aspects of commercial fishkeeping and retail selling. Apply Box 3900, The Aquarist, The Barn, Brentford, Middlesex.

## AQUATIC PLANTS

In response to numerous enquiries we have now started a special Mail Order dept. for Private Aquarists. Now YOU too can choose from the finest range of Cold/Tropical plants.

Many varieties on offer, unobtainable elsewhere.

(Misses) Trade Only) **RETAILER ENQUIRIES ALWAYS WELCOME.** Lists on request.

All orders appointment only please

**J. ELLIS, Healing, Grimsby, Lincs.**

Tel. Healing 2205

## WESSEX AQUARIA AND PET STORES

(Member of the Pet Trade Association)

**25, Beehive Road, BINFIELD,**

**Berkshire. Tel. Bracknell 670**

(Near "Shoulder ofutton" Public house)

For tropical fish, Marine Coral Fish, Plants, Accessories, Tubifex, White Worms, Reptiles and Amphibians. S.A.E. for Lists.

### I've Got Millions!

## WORMS! FOODS! COMPOSTS! RESULTS!

EUGLENA	2/6—With 8 page instructional booklet
MICROWORMS	2/6—Complete with feeding powder
MICRO FOOD	2/6—Specially developed for Plants
GRINDAL WORMS	2/6—Miniature W. Worms Easy to breed
GRINDAL WORMS	3/6—Mature cultures in wooden boxes
GRINDAL FOOD	2/6—High protein content. Rapid results
CARDINAL COMPOST	2/6—Finely ground with organic base
WHITE WORMS	1/6—With complete instructions
WHITE WORMS	3/6—Mature cultures in wooden boxes
WHITE WORM FOOD	2/6—Exclusive formula. No hidden
WHITE WORM COMPOST	2/6—Compost for quicker breeding

Breeder's packs five times 2/6 quantity for 7/6

Ask your dealer, or free delivery from

**E. ARNOLD, 80, MOREGA ROAD, LONDON, E.7.**

# NEW MINI-PACKS

By popular demand we are now supplying **RT FILTER RESIN IN MINI-PACKS** for 10-12 GALLON TANKS. PRICE: 11/3; LARGE SIZE 20-GAL. 21/-. Can be used in any Filter. Ideal for Community Tanks, essential for Discus and Puffers

**REGAL TETRA LTD** 133, SIRDAR RD., LONDON, N.22

# TACHBROOK TROPICALS

244 VAUXHALL BRIDGE ROAD, LONDON, S.W.1

Telephone: VICTORIA 5179

ANGLE IRON TANKS	PRESSED STEEL TANKS	WHITEWORM CULTURE	FILTERS	NETS
18x10x10 in. £1 15 0	10x7x7 in. 11 0	Small 3 0 Large 5 0	Windmill Premier 12 6	Round Nylon mesh 3 in. 9 4 in. 1 3
18x12x10 in. £1 17 4	12x8x8 in. 12 4		Biological Filters (1) 15x10 in. 15 0	Green cotton mesh 3x2 1 0 3x4 2 0
18x12x12 in. £2 0 0	12x8x8 in. 12 0	<b>PISTON PUMPS</b>	Windmill Regent 30 0	4x5 1 0 7x9 2 0
24x12x12 in. £2 12 4	14x8x8 in. 17 4	Hyflo Jnr. £3 7 4	Windmill Consort 19 4	Breeders short wooden handles 5x7 3 0
24x15x12 in. £2 17 4	14x8x8 in. £1 0 0	Hyflo "A" £6 10 0	Internal Corner 4 4	Comer Nylon mesh 3x4 2 0 3x6 3 0
30x12x12 in. £3 18 0	14x10x10 in. £1 7 4	Hyflo "B" £6 5 0	Richard's Under-gravel 8 4	3x2 2 0 6x2 4 4
30x15x12 in. £3 15 0	18x10x10 in. £1 7 4	Hyflo "C" £72 10 0	Growell Bottom 8 3	4x4 3 0 9x7 7 0
36x12x12 in. £4 3 0	18x12x10 in. £1 18 0	Snakes Gdn. Pvc. £7 19 4	Hyflo Jnr. Bottom 3 0	4x5 1 0 4x5 1 0
36x15x12 in. £4 13 0		Final Assembly £1 10 0	Hyflo De Luxe 13 4	3x2 1 0 4x4 3 0
48x12x12 in. £4 2 4	<b>BOW FRONTED BOOKCASE SETS</b>	Dynas P5 1 £9 3 0	Richard's Under-gravel 8 4	3x2 1 0 4x5 1 0
48x15x12 in. £4 13 0	36x15x12 in. £19 17 4	Dynas P5 2 £9 5 0	Clear King External Ornamental Rack 17 4	3x4 1 4 3x4 2 0
48x15x15 in. £4 18 0	48x15x12 in. £22 0 0			4x5 1 0 4x5 1 0
		<b>AIR PUMPS</b>		American carbon mesh 3x2 2 0 6x2 4 4
<b>HEATERS</b>	<b>BOW FRONTED PLAIN STANDS</b>	Sonnet £1 1 0	<b>FILTRATION ACCESSORIES</b>	3x2 2 0 6x2 4 4
Es Es Standard-25, 50, 75, 100w. 7 4	24x15x12 in. £12 10 0	Model "D" £3 3 0	British Glass Wool 1 4	3x4 3 2 with plastic covered handles.
Es Es Super-25, 50, 75, 100, 125, 150w. 18 4	30x15x12 in. £12 0 0	Super Sammi £1 3 0	British Activated Carbon 2 0	<b>BREEDING TRAPS</b>
Ultra Regal-25, 40, 60, 75, 100, 120, 150, 200w. 9 4	36x15x12 in. £14 0 0	Monstress Finer £2 1 0	Carbon 2 0	Woodmill combined breeding and rearing 15 0
Es Es Flexible-100w. only 19 4	48x15x10 in. £22 10 0	Monstress Major £1 4 0	Janor spun glass 1 4	Hydro 3-in-1 7 0
Elephant-25, 40, 60, 75, 100, 120, 150w. 18 4	<b>FLAT FRONTED BOOKCASE SETS</b>	Quinta Pump £1 5 0	Janor filter carbon 1 4	Balport 3-in-1 15 0
Range-25, 50, 75, 100, 150, 200w. 10 9	36x15x12 in. £15 10 0	Artisan £1 7 4	Osaka glass wool 1 4	Growell Sway American 25 4
Isotex Pet 10 0	48x15x12 in. £21 0 0	Fairy Pump £1 5 0	Osaka glass silk 1 0	Hydro fish breeders, fine and coarse 6 4
<b>COMBINED HEATER &amp; THERMOSTAT</b>	<b>TWO TIER STANDS</b>	German Finer £2 0 0	<b>CLEANING EQUIPMENT</b>	
Es Es Dual-Q-Plastic-100, 150w. £1 13 0	18x10x16 in. £1 17 4	Jnr. Zeebeke £2 2 0	Windmill Air Sucker 10 0	<b>AQUAMASTIC</b>
Es Es Pvc-Plastic 30, 100, 150w. £1 4 4	18x12x16 in. £2 1 4	Zeebeke £2 14 0	Windmill Hand Remover 15 0	1 lb. tin 2/3 plus p. 6 p. 2/3
Inter Pet Submar-ite 100, 125, 150w. £1 9 4	24x12x16 in. £2 7 4	Silenta £1 0 0	Agua Var Standard (Battery) 46 0	2 lb. tin 3/9 plus p. 6 p. 2/3
	20x12x16 in. £2 15 0	Small oiling diffuser 1 3	Agua Var Super (Battery) 58 0	4 lb. tin 6/- plus p. 6 p. 2/3
<b>THERMOSTATS</b>	30x15x16 in. £3 3 4	Square diffuser 1 3	Swirlway Super (Battery) 46 0	7 lb. tin 9/8 plus p. 6 p. 2/3
Ultra Popular 10 0	36x12x16 in. £3 5 0	Square diffuser cone 1 4	Swirlway Super (Battery) 46 0	14 lb. tin 17/6 plus p. 6 p. 2/3
Ultra Pop/Neon 12 4	36x15x16 in. £3 10 0	Square diffuser cone with stem 1 10	Windmill Hand Remover spare bags 1 4	<b>DUROGNOST</b>
Ultra Inside Control 11 0	36x15x16 in. £3 10 0	Diffuser stems (2 in. 12 in. 24 in.) 1 6	Windmill Air Sucker spare bags 1 4	Water hardness testing kit 14/8 and 17/6
Ultra Outside Control 10 0	36x15x16 in. £3 10 0	P.V.C. Sealable non-toxic air tubing per ft. 3	Windmill Hand Remover spare bags 1 4	Spare tablets, Pcs. of 10 Strength N.1 or N.5 Indicators each 2/-
Ultra Corner Top 15 0	48x12x16 in. £4 5 0	Rubber air tubing per ft. 3	Windmill Hand Remover spare bags 1 4	<b>COLORMETER FS</b>
Ultra Corner Top Neon 17 4	48x15x16 in. £5 0 0	P.V.C. air tubing 30 ft. roll 7 4	Windmill Rubber Algae Scraper 3 4	Flt. testing kit 27 4
Es Es Floor 10 0	<b>ARBE PLASTIC AQUARIUMS</b>	Hyflo regulator valve 4 0	Windmill Blade Algae Scraper 3 0	<b>MISCELLANEOUS</b>
Es Es Floor Neon 19 0	Bow fronted 18x12x11 in. £8 0 0	Hyflo gang valve 2 4	Aluminium Algae Scraper 2 0	Hydro Aqua Sucker 2 0
Es Es Sentinel 28 4	24x12x11 in. £9 17 4	Air Line Valves 2 4	Hydro Link Sucker 2 0	Aquascope 2 4
Elephant Standard 18 0	24x15x12 in. £12 17 4	<b>AIR PUMP SPARE PARTS</b>	Windmill Automatic Syphon 6 4	<b>OTHER FISH FOODS</b>
Elephant Key Set 19 0	36x15x14 in. £22 10 0	Fairy Diaphragms 1 3	Windmill Fishfall Syphon 1 0	Flakes 3 0
Range Top/Control with Neon 22 4	Corner Aquaria 36x15 in. £21 0 0	Fairy Air Chambers 1 0	Rubber tubing for syphon per ft. 4	Wheat Germ Flakes 1 3
Inter Pet Super Submersible 22 4	3-D BACKGROUNDS	Pressure Diaphragms 1 4	Windmill Dio Tube 15 in. 3 4	Shrimp Meat, Medium 2 3
	for 16 in. and 18 in. tanks 38 4	Aluminium Diaphragms 1 4	Hydro zake-repair sediment remover 2 2	Turtle Food, Large 2 2
<b>OUTSIDE FITTING THERMOSTATS</b>	for 24x12 in. and 34x15 in. tanks 34-	Silenta 2 4	Secco Tonge 4 0	Turtle Food, Small 1 3
Constant Q.K.J. Neon 41 0 0	for 30 in. and 36 in. tanks 62-	Monstress 1 8	Flaming Socks 1 7	Infusoria Powder 3 0
Constant J.L.J. Neon up to 1,000w. 41 12 0	<b>PERMA GRAVEL</b>	Hyflo spare piston seal, old and new model 22 4	<b>HEATER HOLDERS</b>	Infusoria Tablets 2 4
T.D. Thermostat 17 4	Multi-colour, Green, Black, Yellow, Blue, Red, Orange, Lilac, White, 4/4 per 2 lb. bag, plus p. and p. 2/3	Kana Diaphragms 2 for 4 0	Windmill Heater holder 1 4	Conditioning Goldfish Food Large 2 0
Procter Neon 41 16 0		Summit Diaphragms 64	E.T. Heater Bracket One Woodlip Heavy 1 6	Conditioning Goldfish - Natural, Large 1 3
<b>THERMOMETERS</b>		<b>RUBBER SUCKERS</b>	Shrouded Plastics 2 0	Food Large 2 0
Es Es Dimple 4 4		Stank type 2	Spare Knuck Suckers for heater holders 2 4	Conditioning Goldfish - Natural, Large 1 3
Es Es Plastic Back spirit 3 4		Double sized 4		Food Large 2 0
Ultra Silver One 5 0				Conditioning Goldfish - Natural, Large 1 3
Ultra Spirit Fish/bank Floating Spirit 2 4				Food Large 2 0
Ultra Blue One 4 4				Conditioning Goldfish - Natural, Large 1 3
Ultra Petros Back Mercury 6 3				Food Large 2 0
Spare Dunsy Rings 4 4				Conditioning Goldfish - Natural, Large 1 3



# Shirley Aquatics Ltd.

WATER PLANT NURSERIES AND FISH HATCHERIES—Phone: SHIRLEY 130

Stratford Road, Monkspath, Shirley, Solihull, Warwickshire

## PLANTS BY POST

Special offers until Xmas only (Last day of Posting Dec. 19th)

VARIETY AND QUALITY OBTAINED NOWHERE ELSE

Madagascar Lace Plants—Large Flowering Size—15/-. Ruffled Sword Plants (*Ech. Martii*)—15/- each. Melon Sword—Beautiful Bushy Plants—15/- each. King Aponogeton—Magnificent Plants—10/- each. Broad Amazon Sword—Large Plants—10/- each. Junior Amazon Sword—Maximum Height 10 in.—7/6 each. Water Orchids—Flowering Size 10/-—Strong Plants 7/6. Underwater Bananas—3/6 each, 4 for 10/-, 10 for £1. Cabomba Assorted Varieties—Strong Stock—10/- doz. Cape of Fear Spatterdocks—5/- each, 3 for 20/-. Vallisneria Contortionist—18 in. Twisted—2/- each, 20/- doz. Giant Nomophila—Large Strong—2/6 each, 6 for 10/-. Giant Japanese Rush—*Aceras Intermedium*—7/6 each, 3 for £1. Japanese Rush—*Aceras Gramineus*—Good Thick Plants—3/6 each. *Aceras Pusillus*—Dwarf Japanese Rush—3/6 each. Celophane Plant—*Ech. Bertonii*—7/6 each, 3 for £1. Samolus—Water Rose—2/6 each, 6 for 10/-.

### XMAS PARCEL

1 OF EACH OF ABOVE  
(12 Cabomba—4 Bananas) **£5**

### 20/- XMAS PARCEL

Hygrophila, Ludwigia, Bacopa, Noma-  
phila, Alternanthera, Telanthera, Water  
Wistaria, Cabomba, Arbulia, Rotala  
3 of each of above

### £3 XMAS PARCEL

Giant Nomophila, Red Alternanthera,  
Violet Telanthera, Water Wistaria, Willow  
Leaf Hygrophila, Cabomba Caroliniana,  
Vallisneria Contortionist, Underwater  
Banana, Dwarf Bacopa, Rotala Indica  
6 of each of above

Parcel of assorted

### CRYPTOCORYNES

50/-  
1 Aponogetifolia, 2 Ciliata, 2  
Griffithii, 2 Nuri, 1 Blausii  
(Value 85/-)

### MOORLAND PRESERVED WOOD

Hundreds of Years Old—Interesting Shapes—for Aquarium Decoration

### TROPICAL FISH SPECIALS FOR CALLERS

Clown Loach—17/6, 22/6, 30/- True Flying Fox (*Epalz. Kalliopteris*)—17/6, 22/6, 30/-  
LARGE VARIETY OF AQUARIUM SCAVENGERS

## A MANUAL OF AQUARIUM PLANTS

110 pages crammed with invaluable information and extravagantly illustrated. Notes on cultivation on most species. No serious aquarium keeper can afford to be without this book

PRICES IN GREAT BRITAIN

Leather cover edition printed on Diamond Star paper—17/6 post paid  
Hard cover edition printed on heavy art paper—NOW OUT OF PRINT  
New Price-Lists of Aquarium Plants—Send S.A.E. for copy

### MARINE TROPICALS

We are working in close co-operation with the Famous Tropicalism Transfer and are able to offer the same excellent range of Marine Tropicals carried by them, the rarer species being obtained to order.  
We are also stockists of the New Tropicalism Ornae Reactor Tube which is invaluable in marine aquarium keeping. Send S.A.E. for detail

For Cold Aquariums — YOUNG BRISTOL SHUBUNKINS  
Good Colours — 10/- each — Good Fintage

PLEASE NOTE—All enquiries requiring a reply MUST be accompanied by S.A.E. Our premises are situated on the main Strouding-Birmingham road, 8 miles from Birmingham, Midland "Red" Bus No. 130 from Bus Station, Birmingham, passes the door, slight at "The Corner," Monkspath.

HOURS OF BUSINESS—  
Weekdays 10 a.m.—4 p.m. Sundays 10 a.m.—12.30 p.m. (Also Sunday Afternoons May-July Only)

CLOSED ALL DAY EVERY MONDAY

TERMS OF BUSINESS—Cash with order please. Fish sent by rail. Tropical minimum order £10, insulated container and carriage 10/-. Cold water minimum order £5 plus 10/- cart and carriage. Plants by post (minimum order 10/-) please add 1/6 post and packing.

Printed and Published by BUCKLEY PRESS LIMITED, London and Brentford