

# The Aquarist

and Pondkeeper

FEBRUARY 1966



MONTHLY  
Vol. XXX No. 11

**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

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- McLYNN'S FISH FOOD
- ES-ES PRODUCTS
- ELECTRICAL AND GENERAL
- WATER LIFE, AQUARIST, DITCHFIELD'S AND T.F.H. BOOKLETS
- REJECTORS, SEDUETS, AND MAINTENANCE EQUIPMENT
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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  
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39 Tib Street and 16 Whittle Street  
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## M. & R. (DOG-FISH) LTD.

presents



Over 120 varieties including Marine Tropicals on show and for sale. We stock Elheim Filter, Ozonisor, Ozon Reactor, Wias pumps, Automatic Fish Feeder, Pemco tanks etc.

And now Gro-Lux tubes in various sizes.

(cannot be sent by post)

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Telephone: J8802 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, wheaton cereal and yeast, scientifically blended to provide a well-balanced, nourishing food.

For all Cold-water Fish - - 1/3d  
For Tropicals - - 1/4d



\*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

**CONTROLLED IMPROVED FEEDING  
IS YOURS WITH THE  
*NEW***

*Goulb's "A" Brand*

**-(Lazy Susan)  
Electric Fish Feeder**

- Feeds up to 3 times daily with unfailing regularity.
- Permits varied diets to provide all needed nutrients.
- No overfeeding—no spoilage.
- Up to 2 weeks daily feeding at pre-set time.
- Can be used for continuous feeding for quick growing-on.
- A new and valuable aid for the pot-collector, the show tank and for the commercially maintained aquarium.

**Retail Price 135/-**



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

A big step nearer the AUTOMATED AQUARIUM





The FULLY GUARANTEED

# 'PRESET-matic'

HAS ITS OWN BUILT-IN  
LIFE ASSURANCE

i.e.

## MSA

(MAGNETIC SNAP ACTION)

**MSA** IS A DEVICE USED IN ALL "E<sub>2</sub>-E<sub>1</sub>" THERMOSTATS TO ACCELERATE THE OPENING AND CLOSING OF CONTACTS THEREBY REDUCING EROSION AND ADDING YEARS TO THEIR LIFE

**MSA** ENSURES ACCURATE TEMPERATURE CONTROL OVER A LONGER PERIOD AND OBLVIATES TV/RADIO INTERFERENCE

**MSA** MEANS MORE SATISFIED AQUARISTS.

Now available in FOUR sizes

8½" 50 watts and 75 watts  
10" 100 ..  
12" 150 ..

FROM YOUR DEALER

Price **24/6** Tax paid

SINGLETON BROS (Electronics) LTD  
53 VICTORIA STREET, LONDON SW1

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PRODUCT

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  
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will work  
 connected to  
 any make of  
 Aerator

10/- each



"WINDMILL"  
 BREEDING  
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Beautifully  
 Designed and  
 Constructed

15/- each

RETAIL ENQUIRIES FROM  
 ALL LEADING WHOLESALERS

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THE ORIGINAL  
 PREMIER BIOLOGICAL FILTER

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



## They are saying . . . .

- 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.
- 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.
- PLANT GROWTH**—in tanks fitted with the Premier Biological Filter plant growth has been more healthy—plant roots do not rot away.
- WATER CLARITY**—tanks are kept suspension free, always crystal clear water. The Premier Biological Filter continually filters and purifies the water.
- 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.
- NEATNESS.** The Premier Biological Filter is fitted underneath the gravel, only the air lift is visible. Can be worked by even the smallest of vibration aerators. Once installed can be left for years—will not clog up. Suitable for both cold water and tropical aquariums.

Made for 18" tanks at 12/6 each. 24" tanks at 15/- each

Other size tanks see fitting chart of filter box

Pamphlet willingly sent on receipt of 3d. postage

## WINDMILL PRODUCTS

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

Telephone: Victoria 5179

POSTAL SERVICE



## TROPICAL FISH



*Fish of special interest this month*

Discus, Brown, Blue and Heckle, 3"-6". From £5 10 0 each or £57 10 0 per dozen

Baby Piranhas, Serrasalmo Nattereri 1" 25/- each. 1/2" 18/6 each.

Serrasalmo Hollandi 1/2" 18/6 each. 1" 25/- each.

Hi-Fin Platy Variatus (S. American) 1 1/2"	£5 10 0 pr.	Green Vellifers Mollies 3"	.. .. .	50/- pr.
Ember Barbs 2"	.. .. .	Green Vellifers Mollies 2"	.. .. .	35/- pr.
Splry Eels 12"	.. .. .	Distichodus 3"	.. .. .	25/- ea.
Bleeding Heart Tetras 2"	.. .. .	Prochilodus Insignis 3"	.. .. .	25/- ea.
Yellow Fin Bocis 2 1/2"	.. .. .	Striped Tail Cats, Dianema Urostrata 5"	.. .. .	50/- ea.
Piccostomus 2"	.. .. .	Elephant Nose 5"-7"	.. .. .	25/- ea.
Clown Loach 1"	.. .. .	Spanner Barbs 1"	.. .. .	3/6 ea.
Sailfin Black Mollies 2"	.. .. .			

Selection of Marine Fish

All fish guaranteed live delivery and in good disease free condition. 75% rail and packing charge to be included with every order. All consignments of fish to be collected from nearest main-line railway station.

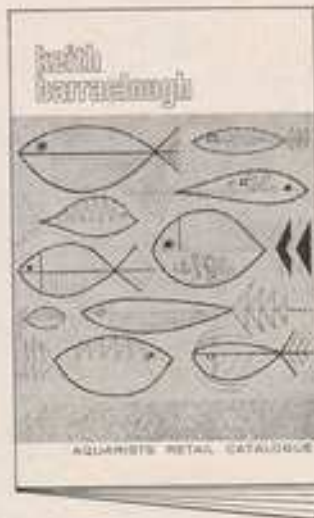
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**Equipment**

## 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, prepaid reply envelopes supplied

**SEND NOW 1/9 Post Paid**

**KEITH BARRACLOUGH**

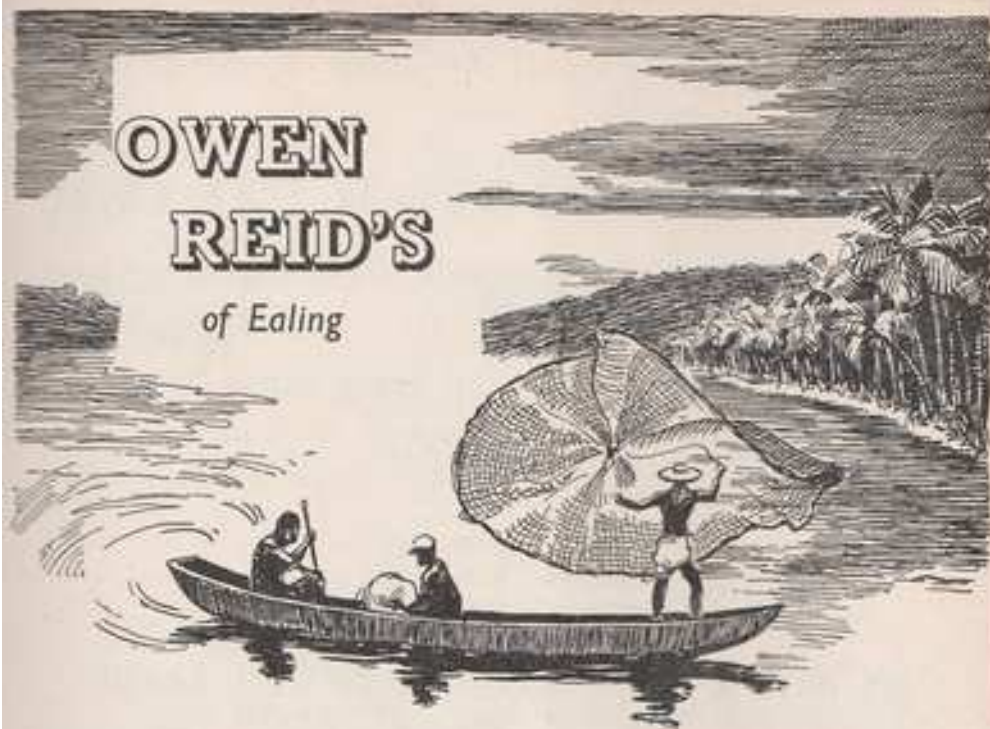
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Telephone: BRADFORD 75372



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**BETTER  
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QUALITY** VISIT THE MOST COMPREHENSIVE  
COLLECTION OF TROPICAL AND  
COLDWATER FISH IN THE MOST  
BEAUTIFUL SHOWROOM IN LONDON **BIGGER  
THAN  
EVER  
VARIETY**

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NORTH FINCHLEY  
LONDON N.12**

Phone HILLSIDE 3510

**HOURS OF BUSINESS—**  
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Early closing day Thursday (1 p.m.)





## There is a GRO-WEL filter for YOU

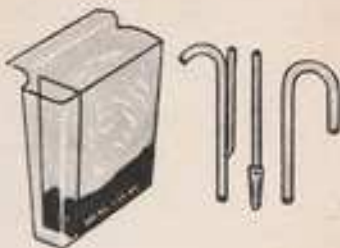


### Slim Jim

The slimmest outside filter on the market. A quality filter for only 17/6.

The brilliant new

**Bubble-up.** Up to 10 times the power of other filters. The most powerful air-operated aquarium filter. The best selling filter. 35/-.



### Klear King

Separate compartments for charcoal and filter wool. Popular self starting siphon.

Price 22/6

Its simplicity is startling—its results extraordinary! This amazing invention will KEEP any aquarium crystal clear.

No gimmicks, no gadget, no valves, no tubing, no diaphragms, no pistons and above all, NO NOISE. Only one moving part silently spinning on a nylon ball performs the miracle.

The filtration and aeration produced by the Dynaflo makes fishkeeping easier for beginners . . . more successful than ever thought possible for the expert.

Perfect for the show tank or the breeding tank.

Why not plug one in—it will be an exciting experience.



And NOW  
the NEW

## DYNAFLO Motor Filter

Up to 25 times the power of other filters.

A self contained unit.

Every aquarist needs a Dynaflo.

Price £5-17-6

Available from your dealer or in case of difficulty from:—

**INTER-PET** 18 Church Street - Dorking - Surrey  
DYNAFLO—A NEW CONCEPT IN AQUARIUM KEEPING

**Herb  Royal**

**NATURALLY**

**the BEST!**

**NOW OFFER YOU**

**TetraKraft**

**PRODUCTS**

It's good news for aquarists. TetraKraft, world's leading range of fish foods, will be delivered regularly to your stockists by Herb Royal, leading British suppliers of animal foods and remedies. There's a TetraKraft food that's right for all your fish—for staple diet, conditioning and growth. To make it easier for you, there is also the TetraKraft Guide to fish feeding, with complete tables of suitable feeds and temperatures for aquarium fish, the common and the rare. Ask your stockist for your copy now!

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**TETRA CARE** Aquarium Remedy. The range of seven effective remedies.

**TETRAMIN** Staple Feed. Wholesome, easily-digested food—also for large fishes.

**TETRAMIN** Conditioning Feed. A vegetable diet for algae and pondweeding tropical fish.

**TETRAMIN** Staple Tablet feed. Vitaminized staple food and conditioning food combination. For better feeders.

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\* TetraKraft incorporates TetraMin and TetraCare

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## Special this Month!

LARGE DISCUS 6'-ET EACH, 1/2 PAIR, 7'-E9 EACH, 1/2 PAIR :: LARGE BLUE DISCUS 6' L10, 1/2 PAIR  
 LARGE GREEN SAILFIN MOLLIES 41 :: LARGE PLECOSTOMUS 15'-, 12/6, 10/-  
 LARGE MARIGOLD PLATY 5/- :: LARGE CARDINAL TETRA 5/- EACH  
 DYNOFLO MOTOR FILTER 25.17 5

"GREEN SHIELD" STAMPS GIVEN (PERSONAL SALES ONLY)

### NEW ARRIVALS

Golden Orfe 5'-7" 8'-9" 15/- & 22 5/  
 2" Golden Tetra .. 5/- & 4/-  
 Green Tetra .. 3/- & 4/-  
 Large Goldfish 7'-8", 8'-10" 15/- & 12/-  
 Small Orfe .. 3/-  
 Medium Goldfish .. 5/- to 7/6  
 Small Goldfish & Shou .. 1/- to 2/6  
**ALL POND PLANTS STOCKED**

### THERMOSTATS

Procter .. 20/-  
 Constant External .. 20/-  
 Constant New Universal Type QK .. 20/-  
 Wilson External .. 25/-  
 Inter-Pet .. 22/6, 20/6  
 UNO ..  
 Out/Adv. .. 15/-  
 In/Adv. .. 15/-  
 In/Adv. "Popular" .. 10/-  
 "Popular" with neon indicator .. 12/6  
 Press Matic .. 24/6  
 Wizard .. 16/-, 12/6, 15/-

### AERATORS

Iron .. 20/-, 30/6 & 50/6  
 Re. Summit .. 21/-  
 Quicks .. 24/-  
 Kona .. 48/6  
 Montrose Make .. 24/-  
 Montrose Make .. 21/-  
 Procter .. 60/-  
 Dynas Mk. I A.C./D.C. 20 0 0  
 Dynas Mk. D A.C. only 20 0 0

### GARDEN PUMPS

Orca .. 20 0 0  
 Snakes .. 27 10 0

### PISTON PUMPS

Hy-do Junior New Super .. 107/6  
 Hy-do "A" .. 120/-  
 Hy-do "B" .. 185/-  
 Hy-do "C" .. 200/-

### Thermometers

Mercury .. 6/6  
 Blue Gem .. 5/-  
 Dumpy .. 4/6

### Sandries

T. Pleco .. 10d.  
 Clamps .. 1/3

### Aeration

Tubing 3/4 yd.  
 Siphon ..  
 Tubing 1/8 yd.

### Glass Wood

Filter Carbon 2/-  
 Material .. 3/-  
 Aquaticency 2/6

### Filters

Covered ..  
 Bubble-Up 22/-  
 Hyko Outside ..  
 Corner .. 4/6  
 Outside .. 18/6

### Windmill

Reverend .. 15/-  
 Windmill Air ..  
 Rotecore .. 18/-  
 Consort .. 18/6

### Premier Bio-

logical Sub-  
 Gravel Filter ..  
 Sedlet .. 8/-  
 Slim Jim .. 17/6  
 Klear King 22/6  
 Bottom Filter 6/3  
 Rock Filter 17/6

### TROPICALS

Neons, 3 for 21; 2/6 each

Roseus .. 4/-  
 Angelfish .. 2/6 & 3/6  
 White Cloud ..  
 Minnow .. 2/6  
 Flames .. 2/6  
 Roscon .. 2/6  
 Black Widow .. 2/6  
 Platys various, ..  
 from 2/6  
 Serranids ..  
 various, from 2/-  
 Schneider barbs 2/-  
 Scaevola .. 2/-  
 Cuppies (pair) 1/6, 2/-  
 Harlequin .. 2/-  
 Cherry barbs .. 2/-  
 Nigger barbs .. 2/-  
 Chequer barbs .. 2/-  
 Red Eyed Tetra 2/-  
 Plectostomus 10/-, 15/-  
 Large Green Sailer ..  
 Mollie .. from 5/-  
 Black Angelfish .. 7/6  
 Black Lace ..  
 Angelfish 4/- to 7/6  
 Tiger barbs 2/6 & 3/6  
 Glowlight .. 2/-  
 Penguin (each) 2/6  
 Rosette Bree ..  
 (each) 2/6  
 Mollie, Black ..  
 from 2/6 & 2/-  
 Lemon tetra .. 4/-  
 Glassfish Adult .. 4/6  
 Assosa Cat .. 7/6  
 Ooclinus Cat .. 7/6  
 Fighters 10/-, 12/6  
 Serpet .. 4/-

Thick Lip 2/-, dwarf or least 2/6, Kissing 4/-,  
 Opaline 2/6, Gourami.

### "AWHEL-AWAY"

Aquarium Vacuum Cleaner .. 40/6  
 Super Model .. 20/6

### EHEIM FILTERS STOCKED

### BOOK CASE

### BOW-FRONTED AQUARIUM

48 x 10 x 15 .. 28 10 0  
 36 x 12 x 15 .. 24 10 0  
 Standard Bow 25, 17, 13 0 0

### PLANTS

Sagittaria .. from 6d. each  
 Vallis Teria .. 6d. "  
 Vallis Spiralis .. 6d. "  
 Anubias .. 6d. "  
 Ludwigia .. 6d. "  
 Hydrocotyle .. 6d. "  
 Cryptocoryne .. 2/- & 2/-  
 Wisteria .. 1/6 & 2/-  
 Glass Hydrocotyle .. 1/6 & 2/-

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

### HEATERS 25w to 200w

Inter-Pet .. 10/6  
 Uno & Ward .. 8/6  
 P.S. Standard .. 7/6

### ADULT RARE FISHES

Pleurocentrus Kribia .. 7/6 & 10/- each  
 Elephant Nose Fish .. 20/-, 25/-, 30/-  
 Horseface Loach .. 4/6  
 Anostomus .. 20/-, 25/-  
 Knish Fish Nigerian .. 7/6, 12/6  
 Black Cardinal .. 4/6 each  
 Scat from .. 7/6 to 20/-  
 Anostomus Cans .. 2/- & 7/6  
 Malayan Angelfish .. 7/6 to 15/-  
 Black Veil Angelfish .. 5/- & 7/6  
 Tin Tail Barbs 2' - 4' - 2' .. 8/-, 7/6, 15/-  
 Silverbarbs 2' - 5' .. 17/6, 25/-  
 Platyfish .. 4/-  
 Red Veiled Guppy .. 10/- & 15/- pair  
 Red Tail Shark 2' - & 10' - .. Large 15/- each  
 Bicolor Plat .. 8/6 & 10/-

Our minimum order for fishes is 2/-, a charge of 15/- is made for container. Carriage charges, by fast passenger train and telegram during time of arrival. Give phone number if possible.

### NYLON COATED AQUARIA, STOCK SIZES

24 x 12 x 15 .. 45 5 0  
 18 x 10 x 12 .. 13 0 0  
 White or black covers .. 18/6 & 25/-

### STANDARD AQUARIUMS

(Light Geop) .. (Angle Iron)  
 12 x 8 x 8 .. 10/6 24 x 12 x 15 .. 55/-  
 10 x 8 x 8 .. 10/6 24 x 12 x 15 .. 60/-  
 14 x 8 x 8 .. 15/- 30 x 12 x 15 .. 70/-  
 14 x 8 x 8 .. 17/6 30 x 12 x 15 .. 87/6  
 18 x 10 x 10 .. 22/6 48 x 12 x 15 .. 120/-

### COVERS

18 x 10 .. 16/- 18 x 10 x 30 .. 35/-  
 24 x 12 .. 22/- 24 x 12 x 30 .. 38/-  
 30 x 12 .. 22/6 30 x 12 x 30 .. 35/-  
 36 x 12 .. 27/6 36 x 12 x 30 .. 60/-

Aquarium covers sent by post only at customer's risk.

### FOODS

Betta Flakes .. 1/6  
 Hyko Flakes .. 1/-  
 Broom .. 1/6 & 2/6  
 Broom .. 5d. & 1/6  
 Dry Daphnia .. 6d. to 2/6  
 Liquidfy .. 2/6  
 Infusory .. 2/6  
 Elbe .. 2/6 C.W. 2/- & 2/-  
 Hobby .. 2/- & 7/-  
 McLynn's .. 1/6, 2/6, 5/6, 17/6  
 Brine Shrimp .. 2/- 2/6  
 Terry Min Growth Food Habitat .. 4/-  
 Wadley's .. 8/-, 4/-, 2/6, 2/3, 1/3  
 Fantasy .. 2/-, 5/-  
 Tetra Min .. 1/11, 2/3, 7/6, 25/-, 54/6  
 Sunagrow .. 1/2, 2/6  
 Vitazeth .. 1/10 & 6/6  
 Shoal .. 2/- & 4/6

CARRIAGE AT COST CHARGED ON AQUARIUMS, STANDS, AND TANKS. SENT AT OWNER'S RISK (Inquiries stamped envelope please) Terms, Cash with Order

# THE CENTRAL AQUARIUM

Sited on the A41 Route, opposite Hendon Central Station  
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**OPEN 8.00a.m.-7.00p.m. Sundays 9a.m.-1p.m. Emergency Phone: HEN 9700**



# Suregrow FISH FOODS BRITAIN'S FINEST



## PELLETISED SOLID FISH FOOD

POND SIZE 4/-  
SMALL SIZE 1/6



## THE TROPICAL FOOD

LARGE SIZE 2/6  
SMALL SIZE 1/6  
FRY FOOD 1/6

**EHEIM "388 COMPACT"**

AVAILABLE SHORTLY

**SOUTH COAST AQUATIC NURSERIES LTD.**

OLD BATH ROAD · COLNBROOK · SLOUGH · BUCKS

THE AQUARIST

# QUEENSBOROUGH FISHERIES

SEE OVERLEAF FOR FURTHER INFORMATION

*It may be necessary to substitute certain plants owing to the time of year*

## NEW SPECIAL PLANT COLLECTIONS (post only)

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

### TROPICALS

No. 1 30 plants including  
Dwarf Lily, Cryptocoryne,  
Wisteria, etc. £1

No. 2 12 Vallisneria  
12 Myriophyllum  
3 Micro Sagittaria  
6 Ludwigia  
6 Elodea Denax £1

No. 3 12 Vallisneria  
6 Myriophyllum  
6 Ludwigia  
6 Elodea Denax  
6 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 Cryptocoryne  
1 Indian Fern  
1 Portia Hair Grass £1

No. 5 6 Vallisneria  
6 Myriophyllum  
6 Hygrophila  
6 Elodea Denax 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  
6 Micro Sagittaria  
6 Bacopa 10/-

No. 11 12 Elodea  
9 Vallisneria 10/-

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

### TROPICAL OR COLD

No. 14 12 Sagittaria  
6 Myriophyllum  
6 Ludwigia  
6 Vallisneria  
6 Elodea Denax  
1 Portia Hair Grass  
6 Bacopa £1

No. 15 30 Plants for year  
Adaptation—Value 20/- £1

No. 16 6 Vallisneria  
6 Elodea Denax  
6 Ludwigia 10/-

No. 17 Giant Amazon Sword Plant  
6-8 inches 7/6

No. 18 1 Apogoneton Crispus  
1 Apogoneton Undulatum 2/6

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

No. 21 2 Apogoneton Undulatum  
2 Apogoneton Crispus 10/-

Live  
Daphnia 2/-  
Tubifex 1/6 2/6  
Microworm 3/-  
Whiteworm (Post Free) 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 xi



We are specialists in aquarium installations. All sizes and styles to customer's own specifications carried out. We have many designs set up in our showrooms. Write for catalog and price.

VISIT OUR WRAYSBURY BRANCH ON SATURDAYS & SUNDAYS 10 a.m. to 4 p.m.

### BOW AQUARIUMS

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

48in. x 12in. x 15in.—29 gns.

Penny bronze, black & gold, and cream. Also plain stands

### STANDS

18 x 10 x 16	37/6
24 x 12 x 16	47/6
30 x 12 x 16	52/6
36 x 12 x 16	57/6
48 x 12 x 16	67/6

### BACKING PAPERS

STRATA ROCKWORK

SEA & SHORE

BLUE SKYS

SAND & SHELLS

24in. long x 20in. high, 2/6 per sheet, or 1/2 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/-. Glass, China, Shells and Live food sent at purchaser's own risk.

### THERMOSTATS

Control External	24/-
Springfield External	25/-
Springfield Ins. Adj.	25/-
Springfield Ins. Adj.	28/-
UNO	
Ins. Adj.	12/-
Ins. Adj. Popular	10/-
"Vyslar" with stem	12/6
Indicator	12/6
"Ea-Ea" Standard	26/6

### THERMOMETERS

Mercury	each
Cam	6/6
Plastic Backed	4/6
Scale Glass	5/-
"Ea-Ea" Dummy	4/6

### FILTERS

"Woodrill" Plastic	each
Outside Filter	19/6
"Woodrill" Biological	
Aquarium Filter 12, 15,	
"Woodrill" Bagnet	
Inside Filter	10/-
Canister Filter	18/6
Air Lift	5/6
"Slim Jim" Outside	17/6
Filter	17/6
"Klear King" Outside	
Filter	12/6
Bottom Filter	8/3
Overmount Sock	
Filter	17/6
Ultraviolet	3/6
Orb-Wall	
Bubbler	35/-

### AERATORS & PISTON PUMPS

Monsoon	each
Fury	21/-
Star	27/6
Star	36/-
Rain	26/-
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VOL. XXX No. 11

1966

## Water Wistaria

by B. FRY

THIS plant, technically called *Synspha triflorus*, is one of the finest acquisitions the tropical aquarist can possibly make for beautifying his aquarium; for provided that the light is quite bright, and the water is quite clear, and the tips of the plant are kept pinched back to promote bushy growth, long-lasting clusters or tufts of attractive foliage will be produced evermore. The leaves are either oblong-lanceolate, with saw-toothed edges, or fern-like and spreading, with deeply cut (slashed would be the better word) margins. They are coloured a delightful apple-green. A temperature range of 68°F (20°C) to 80°F (27°C) suits the plant very well, but 65°F (18°C) should be regarded as the minimum.

If the stems of water wistaria are permitted to grow on unchecked, that is to say, without any pinching back, there is a tendency for all but the topmost clusters of leaves to dwindle away. Yet as the lower leaves are lost, so innumerable strong, smooth and white roots are put out at various points down the stems. If these root-bearing stems are anchored in a horizontal position on the bottom, and thinly covered with compost, each one of them will sprout new leafy plants. These, of course, can be separated by means of a sharp knife and replanted elsewhere. In fact, any piece of healthy green stem pushed into the compost and left undisturbed for a while will usually throw up a new plant, or plants, from the base.

*S. triflorus* was first introduced to tropical aquarists just over 10 years ago. It is widespread over south-east Asia, and is said to be a common plant of the rice fields. It bears violet coloured flowers. In the aquarium it lends itself very well for masking the back or ends, or for growing in shrubby thicket in front of the more massive leaved *Cryptocoryne* species. It has one great enemy: snails. These love to cluster on the foliage and eat it away. The remedy, therefore, is to keep all snails well in check, or, better still, endeavour to rid the tank of them altogether.

# British Newts

by ERIC GILLINGHAM

OF our eight native batrachians (if we are prepared, somewhat arbitrarily, to include the recently introduced Marsh Frog, *Rana ridibunda*) the three members of the family caudata or urodela are the most readily overlooked in the field.

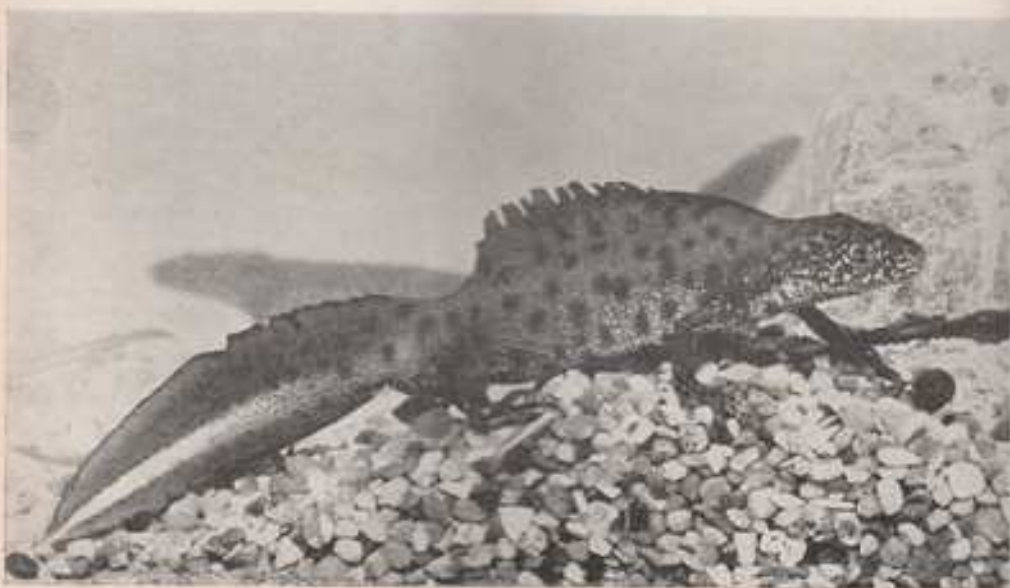
The presence of the Common or Smooth newt in the countryside of today is still fairly apparent early in the year when it gathers in some concentration in the shallower ponds and relatively slow-flowing dikes for the purpose of reproduction. Formerly known as *Molge vulgaris*, it is now referred to genus *Triturus*. I mention this in order to dispel the confusion that can arise on account of the taxonomic readjustments made in recent years. It is the newt with which most of our children are, at least to some degree, familiar as it is, even now, still quite commonly available in early April until late July in the waters quite close to large cities. It should not be inferred from this that individuals remain in the water for three or more months. What actually occurs is that, quite unlike the Anura (frogs and toads), newts do not repair synchronously to the breeding areas but there are always some sexually mature individuals of both sexes in breeding condition present in any suitable locality during these months.

The appearance of this newt is sufficiently well known to most people that I shall not herewith invoke the reader's

impatience by reiterating redundant material. What I would like to suggest is that a cursory appraisal of the known history of the whole group be attempted so that some long-flourishing misconceptions may be ironed out.

It is as well to bear in mind at the start that, from the viewpoint of ancient lineage, these long-bodied, flat-tailed caudate batrachians are very venerable folk indeed! The present writer, who is a plantigrade ape, is a very insignificant character, geneologically speaking, compared with a group of creatures whose ancestors were many millions of years old when the first reptile appeared. *Homo (seditant) sapiens* has a known history of something like one three-hundredth part of this tremendous time-total. Pre-Pleistocene man is totally unknown and the length of the Pleistocene is usually agreed to be one million years.

Now, way back in time, during the Palaeozoic era when the coal-measures were being laid down—in fact, quite early in the Carboniferous period—there were already present in the marshy swamp-lands that covered much of what is today called Europe, early batrachians known as Labyrinthodonts which, to be sure, were not particularly newt-like in external appearance but which reflect in their skeletal structure all the pertinent features of the modern batrachians. There are, it is true, some modifications of the thick, completely roofed skulls of the *stegocephalia* and



some improvements to the pectoral girdles of modern batrachians; also, their teeth lack that typical labyrinthine pattern from which the name of the early group has been taken.

Recent excavations from the Devonian levels in Greenland have disclosed the presence—even as early as that in the "Age of Fishes," when the conquest of the terrestrial sphere was still progressing,—of *Phyllospindulus* ancestors—primitive "Branchiosaurs"—which, although formally accepted as mature amphibians in their own right, are nowadays accorded the ranking of larval forms of primitive labyrinthodont amphibians. The important point to be grasped here is the immense antiquity of this method of reproduction which is one of the diagnostic points of difference between the amphibians and the reptiles. Further points of differentiation, for the benefit of those who are not close students of matters herpetological, may be tabulated thus:

#### Batrachians

No foetal membranes. Eggs deposited either in water or in damp situation.

Gills functional during larval period.

Flattened tail where present.

No external ear.

Clawless digits, four front, five rear.

#### Modern Batrachians

All possess naked skins.

All carnivorous in adult form.

#### Reptiles

Amnion and Allantois present. "Dry", shelled eggs.

Gills never functional after foetal stage.

Cylindrical tail.

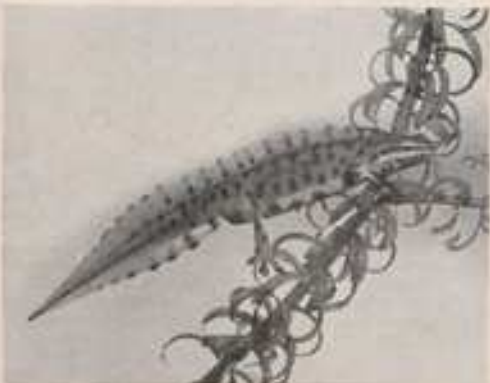
Ear opening often present.

Clawed digits, five front, five rear.

Skins either scaly or horny.

Many herbivorous.

Although both groups are well represented in the tropics and in the temperate zones of both hemispheres, it is rather strange that there are no modern caudate amphibians



Male common newt or smooth newt.

RIGHT—Palmate newt showing tail filament and showing webbed feet.

LEFT—Male crested newt showing discontinuity of crest between body and tail.

(salamanders) in Australia while the Anura (frogs and toads) are quite well represented there.

Now for a look at some of our own native Urodela. We have already briefly mentioned the Smooth Newt. This is typically the newt of the northern, eastern, midland and south-eastern counties where it occupies territories which are sufficiently well-watered and shares these with the Great Warty Newt (*Triturus cristatus*). This magnificently caparisoned newt with its black (sometimes extremely dark brown) skin relieved, in the case of the male in breeding dress, by the characteristic silver flash in the tail, and its bright orange belly, is unquestionably our most picturesque newt. The term crested newt is sometimes misleading not because it is not true but because the males of all three of our native newts possess a prominent crest during the breeding season though that of the Palmate newt is less noticeable.

The Great Warty Newt appears to compete to a considerable extent with the Smooth Newt for *libournon* during the breeding season; certainly it will consume the larvae (tadpoles) of the smaller species. I have known a large female Warty Newt to seize and devour a well-grown Smooth Newt which I introduced to the same vivarium. It is, of course, our largest native newt and males approximate to 5½ in. with females exceeding this length by an inch. There is a very noticeable discontinuity between the dorsal crest, which is very serrated, and the tail crest. There is no such discontinuity in the case of the common



species where the crest is less denticulated and is continuous on both edges of the tail. Also, in the case of the Smooth Newt the usual disparity of size between the two sexes is less marked—in fact the males are often larger reaching just over 4½ in. in length with most females attaining about 3½ in.

We now come to the last of our native newts, the Palmate Newt (*Triturus helveticus*). This, as far as the English variety is concerned, is essentially the western counties newt. In much of Devon, Cornwall and parts of South Wales it almost replaces the common species. There are, however, considerable areas in which overlapping takes place. Now the interesting thing here is what factors determine the segregation of the two species? There seems to be little or no difference in food preferences between them but it is very unusual to find individuals of the two species in the same pools at the same time. This is essentially one of those problems which might profitably interest those subscribers to *The Aquarist* who may be in a position to pursue field enquiries and who are prepared to make careful notes at the time of observation. However, this sort of activity is not likely to be practical for the majority who are probably restricted to the maintenance of aquaria or vivaria. For the benefit, or at least the encouragement, of the latter I will conclude with a few general observations relating to the conservation and propagation of Urodeles in captivity.

In the first place avoid overcrowding. This may seem so obvious a precaution as to be unworthy of mention. This is not so! The real effects of overcrowding are not immediately apparent. Aquarists are very apt to assume that the oxygen content of the water is the controlling factor—and so it is—with fishes (except for the Anabantids); but metamorphosed batrachians are independent of dissolved oxygen of course, except during the larval phase and this factor is relatively unimportant. No. It is very

easy to overlook another point altogether: simple starvation! Among batrachians, as indeed among fishes, there is always a certain number of extremely voracious individuals whose reflexes are faster than those of their companions. If you have a dozen or so specimens sharing the same tank and are gratified to notice the supplies of *mbryx*, *daphnia*, *anchyran* and gnat larvae are being completely consumed, it is almost certain that you are, in effect, feeding no more than two or so extremely active individuals whose capacity to absorb provoider is almost limitless at the expense of the other inhabitants.

Another phenomenon which has puzzled many an aquarist where newts in vivaria are concerned relates to their periodic escapes. Why, after living in apparent harmony for many months, does half the resident population of an established tank suddenly develop a Hooded complex? It is very easy to underestimate the climbing capacity of newts and salamanders. Tank tops should be at all times completely covered. If you do not already possess a zinc top to cover all of your tanks, a sheet of glass will suffice. Never assume that because a particular creature is slow-moving, clumsy (on land) and apparently too fat and heavy for gymnastics it therefore cannot climb out of a glass-sided tank. Whatever precautions against escapes are taken they will, in course of time, occur and on such occasions remember that the creature's greatest concern is to avoid desiccation. When the escape is first observed avoid treading on mats or carpets or you are likely to uncover the mummified remains of a very crushed newt which will resemble nothing so much as a fossilized relic of the Palaeozoic scene! When any batrachian escapes from confinement into a living room and cannot be located after careful searching, throw a saturated rag into any convenient corner of the room and examine it each morning. If the animal is still in the room you will eventually recover it by this means.

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## A Start with Marines

by T. HINITT

HAVING recently purchased a number of tropical marine fish, I feel that my findings will be of interest to those either beginning the hobby or those who feel it to be too complex for them to undertake.

Let me begin by stating that this branch of fish keeping does require rather more financial outlay than the setting up of an ordinary tropical aquarium. A large part of this is incurred in the necessity to purchase an fibrous power filter. These filters are supplied complete with a special Marine filter medium that removes the deadly nitrate and acid from the water. Also required is either a wooden framed aquaria, or, as I use, one with a dipped frame. This dipping is usually of nylon and is carried out before the tank is glazed, thereby completely eliminating any chance of salt coming into contact with the iron frame.

Now to the setting up of the tank. This is no more difficult to do than the preparation of a freshwater aquarium. However, attention to cleanliness is of paramount importance when dealing with marine species. The gravel that I use is ordinary aquarium gravel but it has every particle of dirt removed from it by meticulous washing. Any shells to be used should be soaked for a month to remove dirt from the spiral portion of the shell. Not wishing to wait

this long I boiled them twice and then knocked the end of each shell and flushed through with boiling water. This ensures that there can be no trapped dirt and, surprisingly, does not detract from the appearance of the shell. It is considered a good thing to use shells in a marine tank as it helps to keep the water alkaline, a factor very necessary to the well-being of marine fish. The salt water should be prepared by filling the tank with ordinary tap water after a thin layer of gravel has been placed in the tank, and adding Merrials to the water. This salt can be purchased in 4 lb. bags, this being the required amount to bring the water in a 2 ft. aquarium up to the correct density of .25. The density should be checked every 2 days by a hydrometer and can be adjusted either by the addition of salt (TO RAISE) or fresh water (TO LOWER).

The fish should be purchased from a reliable dealer who has had them in stock long enough to ascertain that they are disease-free. My 2 ft. tank is stocked with 6 Demnals and a Trigger fish. All of these get on reasonably well together but when choosing a selection it is best to go on the advice of the dealer as he will know which species he has in stock that will not quarrel.

My second tank of marine fish was set up on the same

principle as the first but, both tanks are now equipped with an ozone-releasing air stone. This gadget consists of an ordinary air stone connected to a small high voltage device that generates ozone in quantities up to 25 mg. per hour. This ozone on being released into the water acts as a sterilizing agent and is extremely useful in ridding the tank of bacteria and microbial diseases. Bacterially cloudy water succumbs to this ozone very rapidly.

The population of the second tank consists of *Dascyllus aruanus*, *D. aruanus*, Triggerfish, Scats, and *Momodactylus argenteus*. The *dascyllus* appear extremely hardy, perhaps more so than the Scats and *Momodactylus*. These last two species are able to live in both salt and fresh water but being purchased from a shop where they had been kept in the freshwater medium, it was my task to acclimatise them to salt conditions. This was accomplished by the addition of *Microsalts* in small quantities over a period of 4 weeks, raising the density at about 05 and working it up to the correct marine density of 25. On reaching this high degree of salinity all the fish appeared extremely healthy, showing a brilliance of colouration not seen when kept in freshwater. A further week was allowed to elapse before the introduction of the marine species. This period allows the fish to become thoroughly settled in their new medium. It also can be a rather dangerous period, especially for the *Momos*, as it is during this first week that *Oodinium* may appear. To my surprise my tank remained free of this parasite, however. At this time the Ozonizer was set to deliver 15 mg's of ozone an hour to the aquarium. Should *Oodinium* appear in the tank all is far from lost as this disease can be speedily eradicated by the copper sulphate treatment. This remedy should be used with extreme caution as copper is deadly to fish life.

Both of my marine tanks are decorated extensively with coral and shells. These perform two functions, i.e. to provide a pleasing appearance to the aquarium and, far more important, to provide a hiding place for the reef-fish. Without these shelters they will become very shy, dashing round the tank madly at the smallest disturbance.

Lastly, please do not overfeed. In the freshwater aquarium this is bad but in the marine tank it is deadly as any decaying matter will produce acid conditions, the cause of most losses in the salt water aquarium. Should fish, after about three months have elapsed, begin to die for no apparent reason, look for acid water conditions.

### Care of Aquarium Plants

Do not think that once the tank has been set up and planted there will be nothing else to do except feed the fishes and give it the weekly servicing. Many of the plants will need as much attention perhaps as your plants in the garden. Many will have grown too tall and become matted at the surface, so shutting out much of the light from overhead. Others may have had pieces broken from them by the fishes, and these pieces float to the top and again make a mass of vegetation.

The tall shoots can be cut with a pair of scissors and the long ends replanted in the same tank or another one, if required. It is well to treat a few stems each week so that not all are cut down at the same time. The cut pieces can be carefully tied with a piece of wool to a lead weight and the bunch will send out more shoots which will make a nice thick plant. If strips of lead are used to pinch round the stems it is probable that they will be severed or bruised so that they do not grow well. If plant pieces have floated to the top and have made roots they can be loosely bunched together and placed on the bottom with a stone to keep them in position whilst they are making a firm hold with their roots.



Clown fish



*Dascyllus cornutus*



*Scopelogadus argus*, the brackish water "ecot"



# Around the Aquariums

by MIKE SHEEDY

**M**ANY readers of *The Aquarist* will no doubt have heard about the tropical fish in the canal at St. Helens. Recently this caused a big stir and many aquarists have added some of the fish to their collection, as many came especially to see and net some for themselves.

I was at Liverpool when I heard about the millions of tropical fish in the canal, so on my way back I called to see for myself. Many people were walking the canal banks trying to get a look at the fishes and it was not surprising to find one or two of the professionals having a go at catching the fishes.

During a conversation with a few of the locals they told me how the fish happened to get there in the first place. It seems that a pet shop owner who closed down put in some fish he had left over and as the canal water is heated from a nearby glassworks to a temperature of between 75 and 85 degrees F., according to the season, it has helped the fish to multiply very quickly.

Aquarists, intrigued by the way the tropical fish have multiplied in the canal are conducting day and night field experiments to find out exactly why the tropical fish are thriving so well. Among the fish are cherry barb and neon tetras but now the anglers are stepping up a plan to clear out the tropical fish by introducing large numbers of perch.

When I was told about the anglers putting perch into the canal, I said it was a great pity to do that but one gentleman told me it was better that way because, he said, in the past many children had fallen into the canal and some were not so lucky, for already this murky stretch of water better known around St. Helens as "The Hotnet" has claimed several children who fell in and drowned. So I suppose the gentleman was right, for the colourful fish would certainly attract more and more children to the canal banks.

However, at the time of writing the experts were all of a tizzy about the Caribbean-like phenomenon but parents were fearful that the canal's new attraction would lead to more drowning accidents. In the meantime I wonder if any readers of *The Aquarist* agrees with the above gentleman's views regarding the introduction of perch to the canal and doing away with the tropical fish?

A plague of snakes has hit the township of Horsham, in Western Victoria, and farmers there claim to have killed more than 600 in recent months. The big breeding increase is believed to have been caused by the long spell of hot, dry weather.

A pair of black monitor lizards have arrived at the Bristol Zoo. These four and a half foot-long monsters will complete a wide range of lizards on view in the Reptile

House which houses many interesting reptiles from many parts of the world.

I have just received some news from New Zealand about the dolphins at the Napier aquarium. Sometime ago I mentioned that a petition was being raised in Parliament. Well, now I am glad to tell our readers that the Members of the House of Representatives refused to support two petitions from 254 persons in the Havelock North area calling for the release of dolphins held captive in the Napier aquarium.

The Parliamentary Petitions Committee reported its sympathy with the views of the petitioners but had no recommendation to make. The chairman, Mr. Green, said the principal petitioner had not even visited the dolphins in the pool.

The Napier Aquarium Trust Board had satisfied the committee that "no injustice" was being done to the dolphins. Two of them which had died seemed to have been victims of pleurisy or pneumonia, from which they had been suffering when first caught.

Methods used in capturing the dolphins had been proved to the committee to have been reasonable. A Society for the Prevention of Cruelty to Animals inspector who witnessed their capture had voiced no objection.

Miss Howard (of Sydenham) said dolphins were almost human. "They love to be with people", she said. "They show off, just as women show off."

Mr. Edwards (of Napier) said contributors to overseas encyclopaedias had claimed that the two types of dolphin held at Napier would commit suicide in captivity by dashing their beams out on the side of the pool. This has been disproved.

A family of seven European Salamanders—lizard-like amphibians—has been presented to the London Zoo by a Miss Hussey from New Barnet, Herts. Miss Hussey obtained the animals two years ago when they were born by caesarian operation in the laboratory in which she worked.

When born they were diminutive creatures only about  $\frac{1}{2}$  in. in length, and with Miss Hussey's patient supervision and a diet of daphnia they grew into healthy handsome black, spotted with orange, specimens measuring 5-6 in. in length.

The salamander frequents shady places amongst rocks or herbage, coming forth from its hiding place only during rain or after nightfall as the rays of the sun can quickly dry up its smooth damp skin. It walks with a slow sluggish gait on land, but it is a strong swimmer and the early days of development are spent in the water.



# Copeina Guttata

by JACK HEMS

**T**HE red-spotted copeina, a member of the family Characidae, is absolutely trustworthy with other fishes, not so small as to invite molestation (bullying unless anything more serious), requires no coddling, accepts any live or dried food readily, and is one of the easiest warm water fishes for the beginner to breed. It is native to the upper reaches of the Amazon and Rio Negro, and is formally known as *Copeina guttata*.

Copeina in its generic name commemorates Edward Doucker Cope (1840-1897), one of the most versatile and gifted scientists America has yet produced. His chief interest appears to have been in paleontology, but he found time somehow between lecturing on various subjects that interested him, exploration, and contributing innumerable species to the general and scientific press, to name many of the cyprinids native to the south-eastern United States.

The red-spotted copeina is a long-bodied but quite solidly built fish provided with large scales. The top of the head is flattened, or depressed; there is no adipose fin. In the matter of size, it is said on good authority that tank-bred specimens attain almost twice the length (up to 5 in.) that specimens reach in the wild. That this should be is one of the unsolved mysteries of Nature; for, as we all know so well, domestication tends to dwarf fishes rather than make giants of them. Another interesting thing about this strictly tropical fish is its wide range of temperature for although it always seems to flourish best in the low to middle seventies (°F) it can stand a slow drop to the sixties, or a rise to about 90°F (32°C) without suffering any harm.

The back of the male is olive brown, shading, through bluish grey, to white on the underparts. Five or six rows of red spots extend from the gill-covers to the tail. The fins are yellow, inclining towards red at the margins. The dorsal fin is adorned with a bold black spot that spreads across most of its centre. The pupil of the dark eye is rimmed with metallic red above and gold below. The upper lobe of the forked caudal fin is larger than the lower lobe. With regard to the female, she is usually the larger of the two, and her colours, especially the fewer red markings on her sides, are subdued. A black spot, however, is present in her dorsal fin.

*C. guttata* is neither an active swimmer nor boisterous in its movements, but it can and does jump exceedingly well, and a badly fitting cover glass may result in a rapid termination of its life-expectancy. Normally, this is upward of four or five years.

The tank for spawning a pair should be on the large side, though one measuring about 18 in. by 12 in. by 12 in. will suffice. The bottom should be furnished with well-washed fine grit or coarse sand to a depth of at least 2 in. A good growth of plants along the back and ends is recommended to make the fish feel secure and at home. It does not really matter whether the water is soft and slightly acid, or moderately hard and slightly alkaline, but a temperature in the neighbourhood of 78°F (26°C) is called for.

A couple in breeding condition assume more glowing colours—at times the colours of this fish are quite pale—



*Copeina guttata* (male)

and chase and spar about all over the aquarium. Before long the male, sometimes helped by the female, fans a depression, or even cleans the surface of a rock or leaf of a broad-leaved plant, to serve as a spawning ground. As soon as this is to their liking, the pair get together and, during some tremblings and body-pressings, eggs are deposited. After the first batch of eggs is released, the male drives the female away. But in a short while the couple repeat the performance all over again. Thenceforward, this behaviour will continue until the female is spawned out. Depending on the size of the female, anything from a few hundred to a thousand or more eggs may be laid at a spawning. After spawning is over, the female should be removed from the aquarium before the over-anxious and sometimes very spiteful male does her some injury.

The male fans the eggs day and night until they hatch out. It takes anything up to five days for the eggs to incubate and the dark fry to become free-swimming. But when they are moving about it is wise to remove the male also. The fry need Infusoria or one of the proprietary brands of first food for about nine days, after which they will forge ahead on powdered dried food, plus as much small live food as you can supply. Given plenty of swimming space, and plenty of the right sort of food in a well-tended aquarium, they should reach breeding size in less than nine months.

## Two helpful inmates

Two excellent fishes for your tank are *Otocinclus affinis* and *Plecostomus plecostomus*. Both are keen algae eaters and it is true to say that *Otocinclus* eats nothing else. However, a single specimen will do very well in an ordinary furnished tank and will not be bothered by any of the other inmates. These fish spend all their time hanging on to a leaf or the glass sides and are very quiet, even more so than *Corydoras*. If another fish with warlike intentions should approach, *Otocinclus* knows in good time and merely flits away to another leaf. They are hardy (provided that algae is always available) and resistant to disease. *Plecostomus* is a much larger fellow but one about two or three inches is excellent for a community tank. These also live on the glass sides of the tank and on leaves, removing algae, but they will also take bottom foods, including chopped worms. Really night feeders, they will become quite tame but are not always easy to catch. If underfed they will disturb the bottom. Both fishes are quite harmless to other inmates. The flesh of a dead *Plecostomus* seems to be tasty, and nothing is left but the head portion by the other fishes if one should die off in the tank. *Otocinclus* can sometimes attach themselves to other fishes but no harm is done.

# Many More Stamps for the Philatelic Aquarium in 1966

by A. G. K. LEONARD

**P**ICTORIAL stamps from many overseas sources offer steadily widening possibilities of stocking a miniature philatelic aquarium at modest expense as an attractive sideline for the home aquarist who can thus build up his own collection of tropical fish through the post—far more varied than he could ever hope to acquire and maintain alive in his tanks.

The extent of the "fish on stamps" theme has been indicated in the writer's previous articles in *The Aquarist* of September 1962 and December 1964. Its increasing appeal to collectors is evident from the attention now being paid to such subjects by postal authorities in many sectors of the globe who are keenly alive to philatelic trends, not least because stamp sales to the collectors' market represent a significant source of revenue.

The most notable additions to the philatelic aquarium in recent months have come from the sheikhdoms of the Persian Gulf, the so-called Trucial States whose postal affairs were formerly handled by Great Britain until they began their own prolific output of colourful stamps a year or two ago.

Literally hundreds of such adhesive labels have been issued since 1963 by Sharjah, far more than can be wanted for the real postal needs of its 5,000 tribesmen. Although obviously aimed at collectors' pockets, they have not been spurned entirely—partly because they enjoy the respectability of being distributed through the Crown Agents Stamp Bureau in London and Washington, and partly because they are such attractive examples of philatelic art, the work of leading British designers and specialist printers.

The latest Sharjah releases include a series of 17 stamps each for the territory and its dependencies, all produced in multi-colour photogravure from designs by V. Whinley and D. Slater, faithfully depicting nine different tropical fish, based largely on colour photographs by leading marine photographers published in standard volumes that have been issued during the past few years in Paris, Zurich and New York. A representative short set of all nine subjects needs only the lowest values of the series costing but a few shillings, so the collector can contribute to the Sharjah coffers without feeling he is being "taken for a ride" too far!

A popular subject is the most colourful and indeed fantastic of aquarium salt water fishes, the Moorish Idol.



*Zanclus cornutus*, seven inches of strange beauty. A companion stamp depicts the white and black banded butterfly fish *Hemitricus acuminatus*. The graceful and brilliant butterfly fishes are represented on another design by the yellow and brown striped *Chaetodon ornatissimus*, which boasts a tail of rosy pink and grows to about six inches at maturity; it is sometimes known as the Clown or Hawaiian butterfly fish, although it is much more widely distributed in Eastern waters.

Another stamp subject from Sharjah is the young imperial angel or butterfly fish, *Pomacanthus imperator*, a showy specimen from the East Indies that grows to about eight inches; its purple body is marked with bright yellow wavy lines extending from head to the base of the tail, which is bright orange. The zebra-striped angel fish *Pycoplitus diacanthus* is depicted on other stamps, and the series also includes a miniature of the orange-striped triggerfish *Balistapus melanatus*. Another design is devoted to *Zebrafish*, a striped surgeon fish of changeable body colour that can attain a length of 16 ins. in some cases, while a further subject is the false mouth-breeder *Tilapia melanopleura*.

The series is completed by a neat picture of the *Moonfish*, *Argemone argemone*, literally one-finger silver fish or Moonfish. This is found in tropical Indo-Pacific waters from Polynesia westward to Africa, in both fresh and salt water. Although not brightly coloured, these shiny silvery fish are popular among aquarists and can survive in the fresh water aquarium. They do better, however, if about a quarter of sea water is added to fresh water, the latter not unseasoned but having been lived in for some months.

The same silver fish was one of those illustrated on





stamps issued in June 1964 by another of the Trucial States, Umm al Qaywain. A companion design in this sheikhdom's first stamp series was devoted to the conspicuous triggerfish, *Balistoides conspicillum*. Further fish stamps were among those introduced for airmail use in October-November last, including the fearsomely eye-staring lion fish, *Pterois volitans*, some 10 ins. long and most outstanding of the family of scorpion fish.

Nearby Aiman, smallest of the Trucial States, also began issuing its own stamps in June 1964 and likewise included more tropical fish designs in its series, doubtless advised by the enterprising philatelic agency in the Lebanon which promoted these emissions. Thus one can see miniatures of the regal angel fish *Pygoplites diacanthus*, the queen angel fish *Holocentrus ciliaris* and the jewelfish *Henicchromis monacanthus*.

From the Arabian Gulf, the more important state of Qatar is also putting itself prominently on the stamp map since it took over its own postal affairs from the British in 1963. Its latest offering to philatelists, released last October, is a long set of 17 different stamps showing a fine variety of tropical fish, all printed in full colour photographs by a leading London firm. Their subjects are too many to detail here, but they merit attention from the aquatic-philatelist, although he may boggle at paying something over £2 for the full set!

More modestly, one can obtain a Moorish Idol from the British Solomon Islands for a mere sixpence. A neat representation of *Zanclus cornutus*, at a fraction of its normal size of some 12 inches, is presented by one of M. C. Fauser Bell's designs, London-printed by offset lithography, in the new pictorial series which was brought into use on 24th May last on this scattered island group in the Pacific Ocean.

New stamps for the Anglo-French condominium of the New Hebrides in the same sector of the globe were released in August, after international competition for their designs. One of them depicted our fearsomely familiar lion fish, *Pterois volitans*, whose spiky spines were also displayed on the pictorial souvenir envelope officially produced for the first day of issue. In the French sphere, New Caledonia has issued several stamps publicising the attractions of Noumea aquarium, including both young and mature specimens of the wrasse *Coris aspidota*, while in a different context, French Polynesia released a special stamp in September to mark the World Underwater-Fishing Championships held at Tuamotu.

The new series of Barbados, released on 15th July last, is noteworthy for its fine reproductions—by the specialist firm of Harrison and Sons Ltd., who have been responsible for so many fine stamps for postal authorities throughout the world—of designs by the prolific Victor Whiteley, based on drawings by Mrs. Jill Walker. All 14 are marine subjects, helpfully identified by both their popular and Latin names, in recognition of the serious interest collectors are now taking in the stocking of their philatelic aquaria.

These Barbados designs include corals of the deep sea, brain and staghorn varieties, file and queen conch shells, turtle starfish, lobster and fiddler crab. The long-spined black sea urchin, *Tripneustes oculatus*, makes another subject, while a companion stamp depicts the sea-boose, *Hippocampus* sp.—a charming little creature of unusual habits, a source of fascination but a voracious eater and best kept on its own in the aquarium.

The family *Gobiodontidae* include some of the most beautiful of marine aquarium fish, graceful in form and movement and brilliant in colour. The common butterfly fish, *Gobiodon ocellatus*, found in West Indian waters and off the Florida coast, is yellow, with one black band running through its eye, as illustrated on another new Barbados stamp. The balloon or porcupine fish *Diodon holocanthus* makes an unusual stamp subject, displaying the erectile



spines which it makes stand up for protection when it inflates itself. Small fish are interesting aquarium occupants, but they need plenty of oxygen and water space to flourish.



Perhaps the most attractive stamp in the whole colourful series is that depicting the black or French angelfish *Pomacanthus arcuatus*, found in West Indian waters, up to Florida and down to Brazil. It is a very hardy fish, 2 ft. long when fully grown, often seen in public aquaria, while young specimens of about 4 in. length are suitable for the domestic tank. At that stage, it is jet black with four white bars down its sides, but as it grows older these bars



fade out and its colour turns from black to silvery grey with black dots.

The Barbados series is completed by a picture of the flying fish, much sought by local fishermen as a popular island delicacy. Another flying fish has just appeared on a new stamp issued on 29th December in Western Samoa—



and appropriately intended for air-mail usage.

The adoption of decimal currencies is the occasion for new denominations of postage stamps. Ghana "went decimal" last July, when stamps re-issued with new values overprinted on them included one originally introduced in



1939 showing a tropical African cichlid. This freshwater fish known as the jewel fish, *Hemichromis bimaculatus* (i.e. half coloured, two-spotted) is found in African rivers from the Nile to the Congo and Niger. It is sometimes called the red cichlid, although usually olive brown, shading to yellow on its belly. Growing to about 4 inches, it shows its colours best during the breeding period, varying them from day to day. The male can be nasty to the female and it is not suited to the community tank.

St. Valentine's Day, 14th February, has a different

significance in 1966 for Australia, where it is "D for Decimal Day". The changeover to the new system will be signalled by a complete new series of postage stamps, including three multicoloured designs devoted to the coral, anemone and "humbbug" fishes.

Cents and dollars, £ s. d. or whatever the currency, many more stamps depicting fish in one context or another to add to the philatelic aquaria will doubtless appear all over the world during 1966, widening the scope of this interesting collecting hobby.

## The Garden Pond *by* A. BOARDER

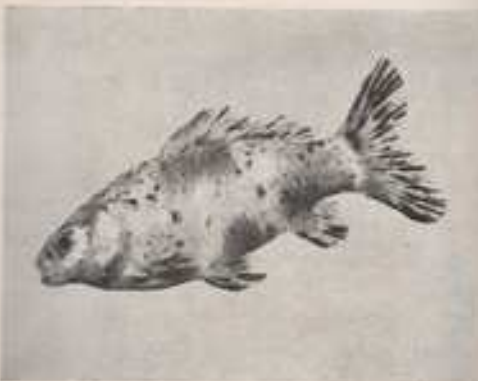
**A**T the beginning of the year it may be useful to many pondkeepers if I run over some of the troubles which might be encountered during the season. I have a very good idea as to the kinds of trouble which may occur as I have answered nearly 2,300 queries from aquarists over the past few years.

First of all the treatment of the newly made concrete pond. There is bound to be a certain amount of free lime from the cement present on the surface of the pond. The pond sides can be treated with various substances to seal this in but I have found that the best way is to fill the pond with water and leave it for a day or two. Now empty and scrub round all the concrete with a stiff broom. Wash round again and refill. Repeat the process after two or three more days and the pond should then be quite safe. I have often read that one must include some special water-proofing agent in the mixture or the paint over the finished work with a special substance. This I do not consider necessary. Well made concrete is water-proof in itself. I can make a mix of one part fresh cement (ordinary), to three parts clean, sharp sand and the result will be so water-proof that cement boxes I have made which are only about a quarter of an inch thick will hold water indefinitely. I have some concrete hatching tanks which I made nearly twenty years ago which are only about half an inch thick but yet have held water ever since and the outside of these tanks remains dry always.

Once the cement surface has been well washed the pond is ready for planting. For any garden pond I think that it is much better to refrain from putting a layer of soil or compost on the bottom. This may be very good for the growth of the water plants but once they get established, not only do they grow apace, but it is very difficult or almost impossible to give the pond an annual clean out. If no soil is placed in the pond but the plants are set in containers these can be lifted out with ease when the pond can be scrubbed round every late autumn.

There is another point worth mentioning about planting the pond. Remember that these plants can become very rampant and in three years or so they can so overcrowd the water that there is little space for the fishes and hardly any clear water can be seen. However this does not mean that too few plants should be used as if so there will be plenty of trouble with green water, especially during the first summer. It is always possible to prune some of the water plants should they become too thick.

Never put any fishes into the pond until the plants have become established and started to grow. The water will be nicely balanced by then and the fishes are much happier. The choice of fishes depends on more than one consideration. If the pondkeeper wishes to breed any particular variety of fancy goldfish, then it is imperative that only that strain of fishes is placed in the pond. It should be known generally that all varieties of goldfish will interbreed and so any good strain could produce mostly runs



London shubunkin—hardy variety for outdoor ponds

of no value at all. Although a special variety might be used it does not mean that other kinds of fishes cannot be used. Such fish as Tench, Rudd and Orfe will not cross with the goldfish, but of course there is the danger that they might eat many of the eggs, although this can be provided against.

Golden Orfe are very fine fishes but I do not recommend them for a small pond. They like a very well oxygenated water and are soon in trouble in hot or thundery weather unless a fountain or water-fall has been provided. The Tench are very good scavengers and do not appear to interfere with the other fishes at all.

When choosing the varieties of goldfish for the pond and it is not intended to breed one particular kind, it is as well to include only the kinds which are hardy enough to stand the winter out of doors. These include:—Common goldfish, Comets, Bristol and London shubunkins, Fantails and Lionheads. Any varieties with very flowing finnage are best left out; these include Veiltails, Orandas, Moors and Celestials. Regarding the Fantails it is better to use visibly scaled types rather than the calico ones as they are hardier.

Do not try to keep too many fishes in the pond. It is far better to have a few very healthy fishes than to overstock the pond with a lot which are never likely to thrive. Most fishes require plenty of swimming space in which to grow and I have found that the sensible pondkeeper who only keeps a few fishes in his pond is rarely in trouble.

In the established pond one of the first troubles that can

occur after severe frosts is that the concrete cracks. This is caused by the expansion of the ice when it forms to any thickness over half an inch. The old idea that if a pond is made with sloping sides the ice will slide up it as it forms is just ridiculous as once any ice forms on the concrete nothing can shift it until it thaws. However it is always better to make any pond with sloping sides as this obviates the necessity of using costly shuttering. Many ponds crack with a heavy concentration of ice near the top of the pond. The water will then leak down to this level. If the pond has been made with a depth of a couple of feet or more this will do no harm and the pond can remain until better weather before any attempt is made to mend the

crack. I have often described how to mend such a crack but for new readers I will run over the details. Get some Prompt cement and after having scraped all loose concrete from the cracks, use one part cement to one part fine clean, sharp sand and moisten. Force this well into the crack but do not spread all around the outside of it. After about half an hour the cement sets and then the fresh cement can be lightly washed over and the pond filled up. This cement sets under water. If the crack is hard to find, choose a dry day and lower the water. As the concrete dries the cracks will show up plainly as they remain damp.

Further articles on this subject of troubles in the pond will be dealt with later.

## Breeding the Black Neons

*Hypbessobrycon herbertaxelrodi*

by KEN PAYNE

THESE attractive little fish come from Brazil and were discovered in a shipment of fishes coming from Rio Tarquary in the state of the Mato Grosso in the early part of 1960.

Sometimes ago my brother and I bought a number of these fish to add colour to our large community tank. At that time we had no thought of breeding them, only how attractive and lively they looked swimming in a shoal with their black and blue-green iridescent longitudinal stripes. In the community tank they grew quite quickly and soon reached a length of about one inch. Their food requirements had been very simple as they accepted dry or live food with equal relish.

The fish we noticed were now sexing out, and as with the Cardinal and Neon Tetras, the females are much deeper bodied than the males, also the females are usually slightly longer.

It was at this point that the thought of breeding them occurred to us, and so we set up a small all-plastic 12" x 8" x 8" tank. We thoroughly cleaned this—an easy task as these tanks have no corners where bacteria can lodge. We filled the tank with soft slightly acid water to about  $\frac{1}{2}$  its depth and into this three mops made from pure white 100% nylon wool which had been sterilized by boiling were placed. Two of the mops we suspended with a cork, the other we weighted with lead so it would lie on the bottom. The mops were made from 8" to 10" long strands of nylon wool tied at the middle, bent over and tied again near the bend to make them bushy.

A check on the pH showed it to be 6.8 and the hardness was between 0 and 1 degree (Clarke). The tank was placed in a shaded position and set at a temperature of 80 deg F, it was then left to stand for 24 hours. I must mention at this point that we used no gravel in the set-up.

The following evening a pair of fish which we had separated for 10 days and conditioned with plenty of live food, were placed together in the tank. The next morning the fish seemed very interested in each other, the male making short darts at the female, nudging her and trying to coax her into the mops, but it was not until the third day that they spawned. We now removed the parents to prevent them eating their eggs which we could see around the base of the mops. We covered the tank with paper to exclude light and prevent the formation of fungus and now could do nothing but wait. Unfortunately the eggs all turned white and no fry were seen.

Well, where had we gone wrong? We thought it was

either the fact that it was the fishes' first spawning, which we have found in some cases are infertile, or the possibility that the water was not acid enough. We decided to try again and so the same pair of fish were separated and conditioned as before. At the end of this period we set up a small tank in the same manner as we had done previously, the only exception this time being that we lowered the acidity to 6.4. Otherwise we decided not to change a winning hand as the fish had spawned previously.

It was again the third day before the fish spawned and small clear eggs were seen and the tank was covered once more with paper to exclude light. Twenty-four hours later the eggs hatched, and although difficult to see, tiny fry were hanging like glass splinters to the mops and sides of the tank.

The fourth day after spawning the fry were free swimming and we commenced feeding. For a first food we fed small amounts of the yolk of a hard boiled egg, and this was followed by newly-hatched brine shrimp on the second week. The third week we added micro to their diet and the fry grew quite quickly. At five weeks old we were feeding grindal worm and fine dry food and we could see the fry were starting to colour.

From this point the fry presented no problems, and we finally raised three dozen to adult size. They are now a marvellous sight swimming in a shoal in our aquarium.



Black neons

photo by Terry Payne



# AQUARIST'S Notebook

by P. M. FULLER

NOWADAYS one can buy almost anything in plastic—plastic flowers, plastic bowls, plastic planes, etcetera. In a continental market recently, I saw what was just about the end. Plastic goldfish globes, normal size, filled with water and floating with plastic goldfish, plants, and ornaments; not a live thing in sight. This seemed to be totally pointless. Not only do the plastic goldfish look less interesting and beautiful than living goldfish, but they don't move, and they can't be of anything but passing amusement. I feel about this sort of thing much the same as I do about plastic flowers; the original is always better, so why settle for the copy? However, in the case of flowers, some argument can be made along the lines that they are not always obtainable, and that the copy is better than nothing. With goldfish, even this doesn't apply.

This leads me on to discuss the use of ornaments in aquariums more generally. I don't know whether complete plastic goldfish set-ups are available in this country as abroad, but even if they're not, one can obtain little plastic fishes and aquarium plants supposedly as 'decoration'. I think most experienced aquarists avoid these and similar divers, wrecks, and shells like the plague! Sometimes, however, the beginner is tempted to add just one 'castle' or something like that, to 'make his tank more attractive'. Not only do such additions rarely, if ever, add anything aesthetically to the tank, but they do upset the natural balance. One usually succeeds best in aquarium keeping if one regards the tank as a section of the wild, transferred to a container, your duty being to keep things as near to nature as possible. One thing you certainly won't find in the wild is a little plastic model. Quite apart from that, sometimes the ornaments can have a toxic effect on the aquarium water. Sea-shells, for example will harden it, and commercially coloured gravel often loses its colour in the tank with the accompanying release of detrimental substances into the water. And so, as a general rule, it is best to avoid all forms of artificial ornamentation.

Readers in the south of England might have paid a visit to Southampton Zoo, a small, but nevertheless interesting establishment under the direction of Chipperfields, the circus people. At present it is receiving a certain amount of publicity owing to the fact that Lord Bath's lions and other big cats are in quarantine here before the opening of his 'game park' in the Easter of 1966. Last year the zoo added a small, but nonetheless interesting aquarium section of six tanks to its small 'Tropical House'. Of especial note is the use of bow-fronted aquariums which both give the fish more space, and also supply a greater impression of depth. There was a fine tank of angel fish and a wide selection of the common species, swordtails, platies etc. Whilst not suggesting that anyone should go out of their way to see it, any aquarist passing through the district should find something to interest him there. The zoo itself, whilst tending to overcrowding, contains several fine specimens of the larger animals.

There is an old nursery rhyme which goes:  
When I was a little boy,  
I washed my mother's dishes;  
I put my finger in my eye  
And pulled out little fishes.

My mother called me good boy,  
And bid me do't again;  
I put my finger in my eye  
And got three score and ten.

Sometimes one wishes that it was just as easy as that!

There is a wide-spread belief among anglers that 'coarse fishing', in which the fish are hooked but thrown back into the river, causes no harm to the fishes caught. This has been shown not to be the case. Although the wound itself may be of little consequence, the fish probably overcoming it very quickly indeed, there is always extensive damaging of the mucus membrane both by handling the fish and in the immediate vicinity of the wound. As the aquarist knows, such damage renders the fish open to attack from various fungus infections which can have disastrous results. Although there seems to be little the angler can do to prevent this, as much care as possible should always be taken in the handling of wild fish.

An interesting book for the Aquarium library is "Living Fishes of the World", by E. S. Herald, curator of Steinhart Aquarium, published in 1961 by Hamish Hamilton but still available from most book sellers. The book is particularly notable because of the interesting photographs it provides, many in full colour, of numerous little-known species. It deliberately sets out to avoid going over the ground covered by specifically aquarium handbooks and provides information on many fish which will be totally unknown to the aquarist. Much of the information it contains, originally presented, and set out in a most readable way, will be found to be of great use and importance.

Recently I came across some amusing superstitions concerning fishes. Did you know, for example, that at one time a split trench was used by lovesick maidens as a charm to bring back their wayward lovers? Or, that, in some parts pregnant women were forbidden to wash themselves or their clothes in the streams or rivers because it was believed that they would cause all the fish to vacate the area?

From time to time in *The Aquarist* the question of fishes in the bedroom is brought up. The pro's and con's are argued—the pro's usually being the soothing effect of fishes on the would-be sleeper, the con's the weight on the floor,



the difficulty of providing a nearby water supply, the danger of leakage on to the floor below and, usually the strongest of all, the objections of wives. Readers might be interested to know that at present I am sharing a bedroom with a large vivarium containing an out-sized axolotl, another vivarium containing a toad, a tank of tropical fish, and a container of stick-insects. On former occasions, to the above selection, I have had additional tanks containing respectively goldfish, freshwater crustaceans such as crayfish, a tank of British native fishes and one of European tree frogs. Need I add that I'm not married?

Aquarists who are also collectors of fishes (which reminds me I should have added to the former item a wide selection of fish and other aquatic animals preserved in formalin, not to mention an examining microscope) will find the polystyrene bottles, flasks, and containers of all sorts available from hardware stores to be the most useful objects for the transport of fishes. They have the advantage over tin and ordinary plastic in that they neither rust nor crack. On one occasion I have even used polystyrene bike flasks to successfully transport live wild fishes from the nearby river to my tanks.

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## Postal Services for Aquarists

by B. WHITESIDE

ARE you an out-of-town aquarist like myself? If so you will probably rely a lot, as I do here in Northern Ireland, on the postal services offered by the larger aquatic dealers in England. Naturally, tropical fish are too costly and too difficult to transport in small quantities over very long distances, but the supplies of fish available from the two dealers whom I know in Belfast are as good and as varied as those in the few larger shops which I have been able to visit in England. Good strains of guppies are not freely available, and one has to get to know private specialist breeders to obtain stocks of these.

For items other than fish I usually obtain my supplies by post from English postal firms which advertise regularly in *The Aquarist*, and have few complaints to make on this score. Delivery is usually a matter of three or four days only, and postage and package charges are reasonable. Not once have I found any carelessness in the packing of goods over a period of years, and only large articles such as aquarium frames or stands or large quantities of a certain kind of aquarium gravel, have taken more than a few days to arrive. The fault here, if it could be called a fault, lies not with the aquatic dealers but with the mode of transport. I have never risked having glazed aquaria sent from England and cannot comment on this question.

In a dealer's shop one can choose individual items at will, but in postal dealings one has to depend upon the dealer for his choice of an individual item which you have named. Plants travel very well when packed in wet newspaper, polythene and cardboard and the quality which I have received in plants by post, from several dealers, has been good in all cases except one in which I ordered a reduced price collection of unnamed plants. Here quantity counted and the quality was low, but this is possibly to be expected in a reduced price collection. However, it is not often or always the case as other such collections have shown. When one orders plants from advertisers, one has to remember that plants advertised for sale in *The Aquarist* may be out of stock when one decides to order them. It is wise to make alternative choices when ordering or to state

that no substitutes are wanted or one may receive plants of which one already has sufficient numbers. Such substitute plants, I have found, are of as good quality as those originally ordered. Plants are a variable commodity but the larger postal dealers have a reputation to consider and this will usually ensure good plants.

The range of goods stocked by the larger dealers is usually wider than that of the smaller ones and such experienced people only keep products which presumably they themselves have used and can recommend. When one sees a new product advertised it is wise to see if the larger postal firms stock it and if so, one can be reasonably assured that its worth and usefulness have been tested and that it will give satisfactory results. Manufacturers are usually very obliging if one returns faulty goods, one firm in particular having replaced a faulty item with a new one for me and another firm taking the trouble to redesign a plastic valve on an item which I found to be working incorrectly under the particular circumstances in which I was using it.

Books on aquatic subjects could be ordered through a local bookseller but it is, in my experience, much quicker to order from an advertiser, this method taking only a few days. Cultures of live foods also travel well by post even, I have found, in cold weather. Most dealers include instructions on their cultures, these being useful for the newer aquarist.

I have never received any postal aquatic supplies which have been damaged in transit. This says a lot for the trouble taken in packing and for the G.P.O. Your nearest aquatic dealer is as close as the local post office if you have paper, pen and a current copy of *The Aquarist* to hand. The little extra charged for postage and packing will often save some of the time and money spent on a trip "to town", with the possibility of finding your requirements out of stock. Of course, if you have a local dealer it is probably to your advantage to patronise him as he will probably be the supplier of your fish which are, after all, the most important item to the fish keeper.

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### SPECIAL SUPPLEMENT

The March issue of the *Aquarist* and *Pondkeeper* will contain a supplement on garden pond construction, maintenance and plants. The articles will be fully illustrated with colour and black and white photographs and an early order is advised to make sure of your copy.

## Our Readers Write

### Success Story

WHILST reading an American magazine I noticed an advertisement describing a turtle raft and stating they are an ideal addition to an aquarium. The idea appealed to me as my tank is a large showpiece situated in the waiting room of my clinic.

I made some enquiries from other aquarists and two professionals, only to be told that terrapins would not survive aquarium conditions. None of these people could however be specific as they had not had any personal experience.

However, by now the idea had taken its hold on me, so I decided to have a go.

Obtaining some perspex from a do-it-yourself shop, I made a raft 5 ins. by 4 ins. then added a runway which angled into the water from just above the surface. The raft was then secured to the side of the tank at the top by non-corrosive aluminium strip, bent to hook over the tank edge.

To begin with I placed the raft in a 12 in. deep tank, temperature 74 F. and with plants already established.

A terrapin was obtained from a pet shop, where it had been kept in very shallow water with a few rocks. I observed him for several days under similar conditions and noted amongst other things, that he was very sluggish in movement, and not very interested in raw meat or dry flies.

I then introduced him to the previously set-up aquarium.

The terrapin's behaviour changed immediately, swimming up and down the tank, diving to the bottom, exploring the plants etc. I placed *tubifex* worms on his platform and he was there almost at once, gobbling them up greedily with his very large mouth.

A day or two later the first fish were introduced with

*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.*

more than a little anxiety. I chose zebra danio, thinking he would have to be pretty smart to catch them, but to my amazement they seemed to accept each other as a natural part of their environment. The fish swam so close he could have certainly caught them had he wished. Thereafter more fish of different species were added—angels, neons, nigger barbs, platys, beacons and a pair of festive cichlids.

The terrapin, or 'Terry' as he is now called by so many of our patients, is the star attraction in a 24 in. deep by 37 in. wide aquarium. He lives very contentedly with a large community of tropical fish. He feeds on dried flies, and *tubifex* worms, a diet which seems to agree with him.

It is now two months since he joined the other fish and I consider the experiment a very happy success.

G. W. WILLIAMS,  
Old Basing, Hants.

### Classes for Marine Fishes

I WAS particularly interested to read that Mr. Parry of the Newport Aquarium Society states that his society is holding classes for native and tropical marine fishes. This is a sign, I believe, of much more interest being shown in this sadly neglected field of our hobby, and I for one shall do all I can to encourage our members to exhibit in these classes. Our society, although basically a study group, will also cater for the more go-ahead aquarists who wish to show marine fishes, and as Mr. Parry states, I hope other societies will follow; they will receive our support, and I am sure the support of quite a few other marine aquarists.

G. JENNINGS,  
Secretary, Marine Study Aquatic Society  
of Great Britain.

## COLDWATER FISH-KEEPING QUERIES answered by A. BOARDER

I have been keeping goldfish for some time and have recently lost four because of fungus on the back. They all seem to be affected on the backs only. What is the cause and treatment?

The salt bath treatment should cure the fishes providing they are discovered before the disease gets a very strong hold. As all the fishes were attacked by the trouble on their backs it does indicate that they may have been damaged by a cat or a bird. It is often after a fish has been injured that fungus attacks that spot.

A large garden pond has stood for years without any fish. Recently it has been stocked with goldfish and many of them have died. Could this have been through the use of insecticides near by or if not what can you suggest?

If the pond has stood for many years uninhabited it is probable that the water has become very foul. If the goldfish were healthy when introduced there is no reason why they should not live all right. Of course, if insecticides have been allowed to fall into the water they may have killed the fish. If the water was poisoned it is probable that the fishes would not live for more than a couple of days in such water and it would be better to empty the pond and refill with fresh water. Make sure that the goldfish are healthy when purchased and all should be well.

My fish has a couple of white spots on the body which have been there for a long time. What is the trouble and cure?

If the spots have been on the fish for a long time without changing in appearance there is nothing to worry about. It is probable that the fish was damaged in some way

either by a knock, a bite from something or even when a fish louse has been attached and has caused a small wound. Providing the spots do not get larger or become inflamed there is no need to take any action.

I have a golden orfe which is acting as a host for fresh water mussels. There are several on the fins and they appear to have been covered over by the fish. What can be done about it?

The parasites on your fish may be the larvae of fresh water mussels as you suggest. You stated that you had introduced some water plants from the wild. This is the cause of the trouble, as it is in so many cases where pond-keepers put water plants from natural ponds or rivers into their ponds without taking care to sterilise them first. When the larvae of fresh-water mussels first hatch they cling to water plants and if a fish swims through the plants the larvae attach themselves to the fish. They then remain on the fish for some time as they develop. It is usually the fins which provide the anchorage. The fish may form a type of cyst over the larvae but after about three months the larvae develop and drop from the fish to the bottom where they carry on with a normal mussel existence.

The larvae on the fish could be killed by pricking them with a needle but it is questionable whether they would drop from the fish for some time, especially if the fish had covered them with a secretion. If the fishes were left alone the mussels would drop off of their own accord and this would probably be the best thing to happen. A salt bath would help any wound to heal when the mussels had left the fish.



## OUR EXPERTS' ANSWERS TO TROPICAL AQUARIUM QUERIES

How many small tropicals will I be able to keep in a tank measuring 48 in. by 15 in. by 15 in.?

Roughly thirty fishes of adult platy size.

I have been told that the two clay green terrapins that I introduced into my tropical aquarium about six weeks ago, and which are feeding well on chopped earthworms, gnat larvae, and shredded beef, will soon grow tired of such a diet and proceed to eat the fish. Is this true?

Your terrapins will not grow tired of earthworms or meat, but as they grow larger and stronger—they may grow as much as 2 in. in a year—they will certainly snap at the fish and gradually do away with all those small enough to be torn to pieces and swallowed. We strongly recommend that before many months are out you give the terrapins a heated tank to themselves.

Please tell me the scientific name and feeding and temperature requirements of the horse-face loach?

This fish is formally designated as *Acantopsis rheo-rhynchus*. It will eat all the regular dried, fresh and live foods suitable for an omnivorous species, and is quite at home at a temperature range of 72°F (22°C) to 78°F (26°C).

I have an 18 in. by 10 in. by 10 in. thickly planted tank in which I have a single pair of mosquito fish (*Gambusia holbrooki*). Are there any other tiny species that I could place in this tank to make it more colorful and interesting?

*Rasbora urophthalma*, *R. maculata*, *Oryzias* spp., *Corydoras heterostichus* and *Barbus phantus* are among the best diminutive and attractively marked fishes that will live on peaceful terms with *Heterandria formosa*.

Is there a sure way of attracting earthworms to feed to my sickly to one spot in a garden?

Yes, dig a hole about 3 ft. by 2 ft. by 2 ft. in a spot not overshadowed by trees, and cover the bottom with twiggly hedge clippings. Cover these with 6 in. layers of vegetable refuse (cabbage leaves, potato peel, soft woods such as groundsel and so forth) sandwiched between 2 in. layers of soil and/or boodie ash mixed up with torn wet newspaper. Do not dig into the growing pile for about six weeks, after which a light forking over in a different area of the rotting greenstuff every few days will disclose dozens of red earthworms of the right size to feed to your fish. Keep adding kitchen and garden refuse to the pile throughout the year and cover the site with black polythene or linoform during excessively wet or frosty weather.

Can angle brass be used in the construction of small aquariums?

Angle brass can be used in the construction of small tanks, but we do not recommend this metal for frames because of its highly toxic qualities.

What are the chances of keeping two young discus fish in a thickly planted 36 in. by 15 in. by 15 in. tank?

The chances are that the discus will settle down quite satisfactorily provided that their companions are quiet-feeding and inoffensive. But do not come away from the dealer's shop without the assurance that the fish are eating a readily obtainable live and/or dried food. Another thing to bear in mind is that discus flourish best in soft, acid water.

I have just bought a warm water plant called *Typhlocharis hololepis*. As I cannot find any mention of this plant in my aquarium books I should be grateful for anything you can tell me about it.

*T. hololepis* is native to tropical Africa and Madagascar. It belongs to the same family—the Araceae—as the *Cryptocoryne*, and flourishes best under similar conditions, namely a peaty compost, soft, acid water, and

plenty of heat. It is not suited to a small tank because it will, in time, produce tall, stout stems terminating in large heart-shaped leaves. Ideally, *T. hololepis* should be cultivated in a spacious greenhouse tank.

What kind of salt do you recommend for the treatment of ailing fish, or for introducing into an aquarium housing brackish water species?

Ordinary block cooking salt or, better still, Tidman's Sea Salt. Table salt, which is processed to make it run smoothly from the packet, is of little use at all.

Is it true that a few drops of wine vinegar can be added to a tank housing fish to make it more acid?

Yes, wine vinegar can be used for acidifying aquarium water, but see that you use a pure wine vinegar and not a vinegar flavoured with culinary herbs such as tarragon or garlic.

Please give me some information about the preferred food, temperature requirements, and maximum length of the Chinese snakehead.

The Chinese snakehead (*Channa asiatica*) is a glutton for live food. In point of fact, the species seldom accepts anything else. Young specimens will grow space on white worms, earthworms, tiny gentles, and the like, but large specimens need bulkier fare such as puppies, largish earthworms, minnows and small carp. It is certainly no fish for a community tank. A temperature of about 65°F (18°C) to 75°F (24°C) is quite suitable and provided the accommodation is not too confined, a length of 12 in. may be attained.

Please tell me what is meant by the letters p.p.m. in relation to water hardness.

Throughout the British Isles the letters p.p.m. stand for one part of chalk (or its equivalent in lime) per million parts of water. In those areas where the mains water is chartered as 100 to 150 p.p.m. it means that the water is soft to slightly hard. Above 350 p.p.m. it is excessively hard.



*Symphysodon discus*



The red ramshorn snails that I like to see in my tropical aquarium always develop chunky-looking Bessers and deep balloons in their shells. How can I prevent these snails' shells losing their lovely golden mahogany appearance?

Only by keeping the molluscs in rather hard and alkaline water that is not allowed to become acidified by an accumulation of nitrogenous debris such as decaying plant life and meat-fed fishes' excreta on the bottom.

I recently bought a handsomely spotted catfish about 2½ in. long called *Pseudorasbora daniconius*. I should like to know the maximum length this species attains, and whether it is quite suited to a 24 in. by 12 in. by 12 in. aquarium.

*P. daniconius* grows to about 6 in. in the aquarium and 12 in. in the wild. Small specimens are quite safe in a community tank, but large specimens develop large appetites and are not to be trusted with fishes much smaller than themselves.

## Breeding the Flame Fish

by J. M. STOCKLEY

THE flame fish is one of the easiest of the characin family to breed. As it is quite a popular fish with the amateur aquarist, I am writing this article to help any reader who may be interested in breeding the species.

I used a tank 21 in. by 10 in. by 10 in. with shingle about 1½ in. deep over the bottom. As a spawning plant I used hornwort, which was given to me by an aquarist friend from his overgrown tank. I tied the pieces of hornwort into four bunches which I weighted down with lead and then placed in the spawning tank. The depth of the water in the spawning tank was 8 inches.

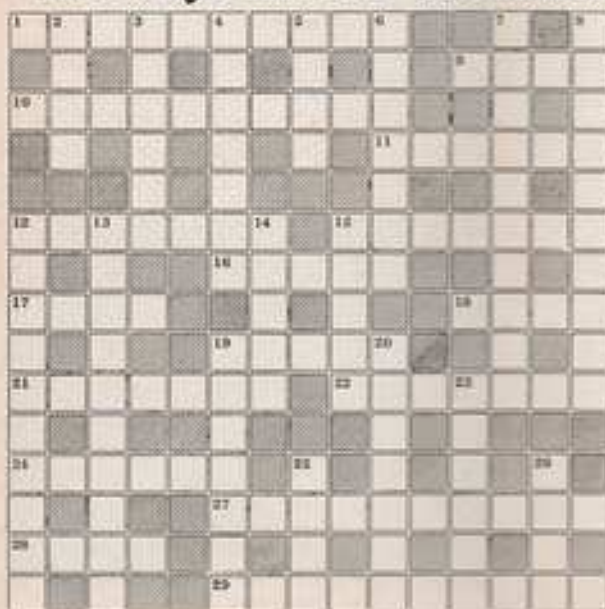
Having set up the breeding tank, I then waited until my pair of flame fish were ready for spawning. The female was fairly large with eggs and the male had a real flame red colour in the fins. This, I thought, was the time. Carefully netting the pair, I placed them in the spawning tank

during the evening, turned the lights off and forgot about them.

The next morning I went to the tank but there was no sign of any eggs. By dinner time the spawning was over and I could see a few eggs scattered over the hornwort—disappointing I thought! However, I removed both the parents and started to put in a tubed fry food. To achieve an even spread of food all over the tank I took out a litre of the water from the tank, put in a few drops (about 10), stirred it and tipped it back into the tank. I did this once a day until I could actually see the fry in the tank. Then I did it twice a day, leaving a 25 watt bulb on over the tank night and day.

I have between 40 and 50 fry which are a month old now and are feeding on microworms. Not a bad result I feel, for a first attempt at spawning these attractive fish.

## The AQUARIST Crossword Compiled by L. BRADLEY



### CLUES ACROSS

- Perhaps 10 across fits this plant (5, 5).
- When a number get surrounded by drink do they begin to spin on it (4).
- Robert Hood of the aquarium? (6, 4).
- The Bass (6).
- Giving up one's option of playing (7).
- Fish that is usually found canned (7).
- Scissors of 15 down (5).
- Almost particle found in a man's vesicle (4).
- One's individual person (4).
- Acorn (3).
- Set extending to the side of the ship projected from the wind (7).
- Has this warrior been fighting in the sun? (7).
- Vindicate by punishing a wrong-doer (6).
- Fairy diversion? (3, 7).
- One is twelve when on the subject of four (3).
- Basically heating the aquarium by electricity? (10).

### CLUES DOWN

- Not dress (4).
- Not 10 across (6).
- Digging these might not only apply to tomatoes (7).
- Known as a first-class continent (4).
- Found in a school but not the fishy variety (7).
- Sounds as if the ex-queen of the fabric market to love this text carried out (10).
- Haemulon striatum* (10).
- Brachydanio albimanus* (5, 5).
- Acerina kerriei* (5, 5).
- Layer of a golden egg? (5).
- See 16 across (5).
- Red vase (long) (7).
- Pseudomorphus* (7).
- Scary but the Haron is at the end (6).
- Jack of pantheistic fame (4).
- To grow originally (4).

Solution on page 207

## News from AQUARISTS' SOCIETIES

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

**THE Nottingham Tropical Fishkeepers** held their annual general meeting recently when the following committees were elected.—Chairman, Mr. Parry; vice-chairman, Mr. Parry; secretary, Mrs. Parry; treasurer, Mr. Hart; show secretary, Mr. K. Sordshaw; social secretary, Mr. Skelton; committee member, Mr. A. Cox. Gifts were presented to Messrs. K. and M. Sordshaw for voting first in the "Tropical aquatic" competition, and Mrs. B. Sordshaw for bringing the most fish during the year. Any information regarding the above or membership of the club should be addressed to the Secretary, Mrs. H. Parry, 37 Huxford Road, Rosewood Park, Nottingham.

**THE officers elected at the Mansfield and District A.S. meeting for 1966 were:**—President, Mr. G. L. A. Wilson; chairman, Mr. A. Atkins; secretary, Mr. J. Rowley; Robin Hood Ave., Waverley, N. Mansfield, Notts. Show secretary, Mr. C. Hill; treasurer, Mr. M. J. McGarry; Assistant vice-chairman, Mr. R. Wignall; and show secretary, Mr. R. Buckdell; social secretary, Mr. D. Carter. In his review the chairman stated that last year had seen good activity in the show field, and stressed the need for more members and new additions to the society programme. The meeting place of the society is 10 Old Ramon Inn, Church Street, Mansfield.

**THE annual general meeting of the Newport A.S. was held on 17th January when the following were elected to office:**—Chairman, Jack Burgess; secretary, Mrs. Anne Salmon; Treasurer, 33 Glamorgan Park Ave., Chiswick, Newport, Mon., telephone Newport 23880. Treasurer, Ivor Phillips; show secretary, Michael Parry, 49 Western Drive, Gabafla, Cardiff, telephone Cardiff 46877. Magazine editor, Terry Wall; instant representative, Paul Williams; and two members, Les Bennett and Glyn James.

The retiring secretary, Mr. T. G. Wall, presenting his annual report, spoke of the many and varied subjects that had been provided for the enjoyment of members during 1965. There had included film and slide shows, brain trusts, lectures by several guest speakers, frequent quiz shows and "Bring and Buy" sales. A considerable expense the society had incurred a visit from Mr. E. Mason-Smith of Cambridge who showed his excellent 8 and 16 mm. films on aquatic and other subjects of interest. A particularly popular item during the year was a film and lecture provided by Mr. A. Millingham of The UK River Authority entitled "The Salmon River". Interest was so great that it is hoped to secure Mr. Millingham's services once again during this year.

The show secretary, Mr. M. J. Parry spoke of the successes of many members at open shows throughout the year. The society's own open show had attracted a record entry and had received support from all the Welsh societies, plus those in Birmingham, Bristol and Trowbridge. For 1966 an even bigger show is envisaged and will include for the first time a class for coldwater and tropical marine fish, a round of the hobby that is causing great interest throughout the peninsula. The date of the fourth annual open show has been provisionally set for Saturday, 17th September next.

In a tribute to the retiring chairman, Mr.

Colin Salmon, who, due to business commitments, did not seek re-election. Mr. Jack Burgess spoke of the high regard in which he was held by all, and thanked him for all he had done for the life and work of the society since his appointment as chairman 18 months ago. Regarding Mr. Salmon thanked the members for their support, and thanked the new chairman his best wishes for the society's continued success.

Similar votes of thanks were made by the society to two other members of the 1965 committee, Mr. Eric Harris and the treasurer, Mr. C. W. Lewis, who, also due to pressure of work, did not stand for re-election. Upon conclusion of the business side of the evening members enjoyed a short film on "Goldfish" for which the presentation was Mr. Ivo Phillips.

At an earlier meeting held the same month the evening's entertainment took the form of a "knockout" table show for a plaque presented for competition twice yearly by the show secretary, Mr. Michael Parry. After a keenly fought contest two winners emerged; Junior member, Master Clive Pemberton and Mr. F. Glyn James, who share the award for a period of three months each.

Meetings during 1966 will be held once per month as opposed to last year's arrangements of fortnightly meetings. The society meet on the third Monday of each month in the Whitbread Memorial Rooms of the Central Y.M.C.A., Commercial Street, Newport. New members are always welcome and further details may be obtained from the secretary.

**AT the November meeting of the Gurfurth and District A.S. a lecture was given by Mr. Hunt of the Grevio Aquarium, Wandsworth. The lecture was on the science of fish keeping, which was both interesting and informative and proved of benefit to both novice and experienced aquarists.**

**At the annual general meeting in December three members were elected to the committee, namely Mrs. D. J. Britton, J. Laidley and R. Warren. Mr. Clarke, the vice-chairman, gave a lecture on fish houses with special reference to the aquarist's fish house which is now heated by off-peak underfloor electricity. This is a comparatively new method of heating and is unique in the district.**

**Owing to its increased membership the society now meets on the third Wednesday of the month at the Scotch Hat, Church Lane, Gurfurth (next to Parish Church). All interested in our society are very welcome to come along. Mr. R. Warren will be giving a lecture on plants at the February meeting.**

**THE members of the Wakefield and District A.S. were given a talk at the January meeting on the keeping of marine aquaria by Mr. K. Buryachukoff (Bradford).**

**The winners of the evening's table show were: Chairman, Mr. E. Green; and A.O.V., Mr. A. Conon. The meetings are held on the second Tuesday of each month at the Magnet Hotel, Dewsbury Road, Wakefield.**

**PLANS were made at the January meeting of the Pontefract and District A.S. for an open and inter-club show later in the year.**

Members also agreed on an outing to Chester Zoo during the Whitehouse holidays. There were three classes in the table show, the results being: Harb, 1 and 2, D. Cohen; 3, G. Copley; Fishers, L. D. Cohen; 2, P. Butler; 3, E. Cohen; Laboratory, 1, F. Butler; 2, D. Cohen; 3, G. Copley. Will anyone interested in joining the society please write for details to the secretary, Mr. H. Copley, 14 Castle Vale, Knottingley Road, Pontefract.

**RECENT activities of the York and District A.S. have included visits to Airborough and Wakefield, as well as talks by visiting speakers and general quizzes. The year was brought to a close with the Christmas dinner and social, at which the awards were presented for points gained in the monthly table shows. Award winners were: Champion—1, Mrs. J. Heald, C. E. Dailley (top and reply); 2, Mr. G. Pugh, (plaque); 3, Mr. M. Cooper, (plaque). Novice—1, Mr. T. Wilson; F. Haddy (top); 2, Mr. D. E. Parlaneau, (plaque); 3, Mr. F. S. Harris, (plaque).**

**The annual general meeting was held in January and the following were elected into office: Chairman, Mr. H. G. Barton; vice-chairman, Mrs. J. Heald; treasurer, Mr. A. Brown; secretary, Mr. G. E. Havelock, 65 Beaconsfield Street, Acocks, York; assistant secretary, Mr. M. Cooper; Committee Member, P. S. Harris; D. E. Parlaneau, N. Rumbold; M. L. Smith. A new venture is the publication of a monthly newsletter to which all members are invited to contribute articles on experiences in the hobby. Meetings are held on the second Tuesday of each month at the British Legion Club, Micklegate, York, and new members can be sure of a warm welcome.**

**AT the first meeting after the Christmas recess of the Swindon and District New A.S. the chairman read through the proposed programme for 1966, which included four inter-club competitions, with the neighbouring clubs. After a lengthy discussion between the 20 members who attended, it was decided to have a breeder's class as well as the four normal classes. Any person interested who would like to attend the meetings may do so at the Locomotive Hotel, Port Street, Swindon, every second and fourth Saturday of the month.**

**A meeting was held early in January to discuss the possibilities of reforming the Oxford A.S. It was agreed by the meeting to reform the society. The election of officers was then carried out. The officials are as follows: hon. chairman, Mr. D. Hathaway; hon. secretary, Mr. C. R. Valentine; hon. treasurer, Mrs. A. Gibbs. Committee members: Messrs. G. Conway, A. Henderson, A. Smith, R. Edwards. Anyone wishing to join the society should contact the hon. secretary, Mr. C. R. Valentine, 42 East Avon, Cowley Road, Oxford.**

**NEWS from the newly formed Moray A.S. is most encouraging. At the last two meetings the attendance has been very good indeed despite the very inclement weather and the lack of suitable accommodation. Mr. Gavin Mair gave a very instructive talk in December on "Fish disease and white spot," and a talk on "Breeding cichlids," was given by Mr. Ron Stewart, the society's first chairman, in January. He also brought along a very nice fish for auction to help raise funds. Both were very much appreciated by members.**

**Visitors, new members and wives are most welcome and all enquiries should be sent to the hon. secretary, Mr. T. Burns, 1 Hamon Way, Kilsnoe Park, Monmouth.**

**AT the January meeting of the Airborough and District A.S. talks were given by two of the members: Mr. G. Walker, on Potted aquaria, and Mr. R. Lister on "Tropicals." Anyone who is interested will be welcome, and can obtain further information from the secretary, Mr. R. Hartwood, "The Handbuds," Scotland Lane, Hemforth, nr. Leeds.**



The acting chairman, Mr. F. Pearson, at the annual general meeting of the **Rogby A.S.**, recalled events of particular significance during 1964. The society had seen the formation of an executive committee and the appointment of two new positions of show secretary and minute secretary, but two long-standing members had been lost due to the death of the treasurer, Mrs. Pineson, and the resignation and move from Rogby of the chairman, Mr. V. Robinson.

The society enjoyed a varied and interesting year with trips to Chester Zoo Aquarium, Biberi Trout Hatchery, and the British Aquarists Festival. Talks were given on topics which included "Marine Fishkeeping," "British Livebearers," and "Reptiles and Amphibians." The secretary reported the highest attendance during 1964 in the history of the society, and aims for the coming year should be to consolidate the position the society holds at the moment and to strive for more regular attendance, if possible.

Concluding the reports, the show secretary expressed great hopes for the coming year with regard to fish within the society. The standard of fish was higher and Rogby was in the lead in the Inter-Society League. Better showing facilities were available due to a new show stand. More important still was that members had had a greater chance of exhibiting fish this year than ever before and a plan show had been given for the first time with considerable success. Newly elected officers for 1965 were as follows: Chairman, Mr. E. Bennett; vice-chairman, Mr. F. Pearson; secretary, Mr. R. Dixon; treasurer, Mrs. B. Fox; show secretary, Mrs. J. Pearson; minute secretary and press agent, Miss R. F. Shaw; news editor, Mr. K. Russell; librarian, Mr. Beasley.

The **Riverside Aquarists Society** held their annual general meeting recently when the officers elected for the year were: Chairman, Mr. D. Sieders; secretary, Mr. C. Buckland; treasurer, Mr. I. Pritchard; show secretary, Mr. R. Deyson. All enquiries should be made to Mr. E. Davies, 140 Gowerley Estate, Weymouth Road, London, W.12. Telephone: 311E 5613.

The members elected for office at the annual general meeting of the **Marskeby A.S.** were as follows: Chairman, Mr. F. Muller; vice-chairman, Mr. J. Buchanan; secretary, Mr. R. B. Moorcroft, 24 Parkley Road, Liverpool, 4; show secretary, Mr. J. Robinson; treasurer, Mr. R. Patten; news editor, Mr. J. Weyles; librarian, Mrs. V. Patten. Meetings are held fortnightly on Monday nights. The open table show will take place on 21st May at Macclesfield Athletic and Social Club, 5 Richmond Terrace, Liverpool, 6.

FOLLOWING the Christmas break members of the **Independent A.S.** met for the first quarter of the new year with a best pairs competition (male and female fish). This was won by Mr. A. Scholter (Aplocheilichthys sp.) and second being Master C. Chapman (Aplocheilichthys sp.) and third, Mr. J. E. Chapman (red lighters). Later there will be a table show for coldwater fish plus a demonstration on fertilising aquaria by club chairman, Mr. P. Lankin. The following week will see all members competing in a miniature furnished aquaria (8" x 6" x 6") and on 28th March the society will hold its annual general meeting for 1965-66, in which it hopes all members far and near will participate.

The chairman of the **Newcastle Guppy and Livebearer Society** reported a very successful year at the annual general meeting both financially and in membership, which now stood at 46. The following committee was elected: Chairman, Ron Skyring (re-elected); vice-chairman, Dave Pomeroy; secretary/treasurer, Bill Cummings (re-elected), 30 Grosvenor, West Denton, Newcastle-on-Tyne, 5; assistant secretary, Jack Leadbetter; host, Dave Chalmers; librarian, Tom Shaddock.

After the election members expressed their views on holding an open air show and a social

evening in the near future. Any aquarist wishing to take part in the society's activities should contact the secretary who will be pleased to hear from them.

DOI to address another condition the number of members attending the general meeting of the **Nottingham and District A.S.** in December was greatly depleted. Those members able to attend were entertained by an excellent collection of colour slides provided by Mr. Gaskell and Mr. Hill. Many thanks are extended to the ladies who provided refreshments. The last general meeting was held on 27th January with a table show of guppies and labors.

The **Medway A.S.** has been fortunate in obtaining a new meeting place at the hall of Danecourt School, Watling Street, Gillingham. This is next to the Central Hotel. Meetings are held on the 2nd and 4th Wednesday of every month at 7.30 p.m., and new members, young and old will be welcome. The club is looking forward to a very full programme of open-air shows, visiting speakers, film shows and visits to various tanks.

At the annual general meeting of the **Bradford and District A.S.**, the election of officers and committee was as follows: President, Mr. G. Holmes; vice-president, Mr. D. Carr; secretary, Mr. A. Fitch; treasurer, Mr. R. Moorcroft; social and publicity officer, Mr. R. Winstanley; equipment officer, Mr. H. Greenwood; committee members, C. Bines, J. Hooper, R. Fletcher, L. Hiley, J. D. Barclay, J. R. Smith, J. Goodwin.

The society has had a very successful year with the members winning over 100 awards at open shows. The membership list January stood at 91 and new recruits at 101. A programme of talks, slide shows, and social outings is well in hand for the coming year. Two open table shows are to be held on Sunday, the 27th March and Sunday, the 2nd October. The latter show will be held at Unity Hall, Rawson Square, as will the society meetings which are held on the first and third Wednesdays in each month at 7.30 p.m. New members are assured of a friendly welcome, details of membership can be obtained on request from the secretary, Mr. N. Firth, 1 Rhine Street, Wakefield Road, Bradford 4, Yorkshire. Telephone: Bradford 24017.

The **Hendon and District A.S.** held its annual general meeting recently and the officers elected for the ensuing year were as follows: Chairman, Mr. A. Sumner; vice-chairman, Mr. A. Strenny; treasurer, Mr. P. O'Connell; secretary, Mr. G. Rowson; assistant secretary, Mr. J. Chisham; show secretary, Mr. J. Gorman; joint secretary show secretaries, Mr. A. Phillips and Mr. J. Smith. Committee members: Mrs. E. Bostwick, Mr. E. Parkin, Mr. M. Lawson. Services secretary, Miss V. Frost, 83 Dalry Road, Hendon, N.W.4, to whom applications for tape and slide lists should be made.

At recent table shows of the **Burnslow and District A.S.** more fine tropical fish have been entered. In a Lakeland show the winners were: 1, Mr. 102 (Chloroceryle) 70 pts.; 2, Mr. H. Pratt (Moenichia) 70 pts.; 3, Mr. Walter (Hetero) 69 pts. In a Cheshire show the winners were: 1 and 2, Mr. H. Pratt (Blond cara tetra) 78 pts. and (Nannostomus) 75 pts.; 3, Miss Chandler (Glowlight tetra) 74 pts. and in a Cumbria show the result was: 1, Mr. Thomas (Rumicard) 75 pts.; 2, Mr. Sheppard (Orange chromide) 74 pts.; 3, Mr. Thomas (Faintmouth) 73 pts. Mr. J. Thomas has given a very interesting talk on the history of the Guppy, its introduction to this country and the breeding and care up to the aquatic varieties that we know today. The Burnslow A.S. now meet fortnightly at the Farnworth Army Centre, Haverthwaite Road, Hindlesea, and the secretary,

is Mr. D. J. Woodhead, 16, Ellerslie Road, Hindlesea.

The January meeting of the **Accrington and District A.S.** consisted of a slide show with a lecture on tape which was supplied by the Hendon Society, London. The subject was types of tropical fish and different treatments of furnished aquaria, coupled with specimens on each slide on tape. The show was quite enjoyable and a change from the usual lectures, etc. The monthly table show: any variety tropical fish was won as follows: 1, Mr. C. Whitley (Corydoras multispinatus); 2, Mr. C. Whitley (small blue guppy); 3, Mr. Brian Tattersall (red swordtail, male).

The **Hull A.S.** closed a very eventful year with their third annual dinner and social. The evening's programme included a most impressive by the president, Mr. D. Robinson, which was followed by the distribution of awards and trophies won by members during the year. Senior aquarist of the year: Mr. P. M. Sheppardson. Junior aquarist of the year: Mrs. G. Jacobs. Fish of the year: Mrs. G. Jacobs. Home furnished aquaria: Mrs. E. Chapman. Table breeders: Mrs. E. Chapman. Home breeders: Mrs. M. Lee. At the annual general meeting the election of officers resulted as follows: President, Mr. D. Robinson; vice-president, Mr. W. Hart; chairman, Mr. F. Chapman; vice-chairman, Mr. J. Warrington; secretary/treasurer, Mr. E. Searcy, 141 College Grove, Preston Road, Hull; assistant general show secretary, Mrs. E. Chapman; show secretary, Mr. S. Cable, 4 Crystal Avenue, Hawthorne Avenue, Hull; librarian/press agent, Mr. E. Poole. The retiring chairman is Mr. D. Rowley, who has held office since the founding of the society and to whom thanks are expressed.

At the annual home furnished aquaria competition of the **Poolehampton A.S.**, the judges were Mr. C. Spry of Southampton, who visited competitors' homes to judge established aquaria both tropical and coldwater. The results were as follows: Typocentrus, 1, Mr. M. Mason; 2, Mr. N. Franklin; 3, Mr. P. Wyllie; 4, Mr. J. Stiffwell. Coldwater: 1, Mr. S. D. Firth; 2, Miss W. Ryder; 3, Mr. W. J. Ryder. The trophy awarded for the highest pointed entry was awarded to Mr. M. Mason. At a recent meeting the guest speaker for the evening was Mr. Norman Bennett of Weymouth, who lectured on the aspects of water-gardening and illustrated his talk with coloured slides of water lilies grown on his fish and lily farm. Many questions were asked by members as garden ponds.

The officers for the **Clitheroe A.S.** for this year are as follows: Chairman, Mr. E. Spiers; vice-chairman, Mr. E. McLeod; secretary, Mr. D. G. Arnold, 4 Royal Mans, Hampton Court, East Moloney, Surrey; assistant secretary, Mr. L. Smart, 265 Lewis Farm Buildings, Vauxhall Place, London, S.W.6; social secretary/treasurer, Miss G. Godbolt; librarian, Mr. I. Miller. The provisional date for the open show is Saturday, the 17th May. The meetings are held fortnightly at the Clitheroe Community Centre, 285 King's Road, Clitheroe, S.W.10, and all members welcome.

The **Lancashire Aquarists Breeders' Society** held their annual general meeting recently and the election of officers was as follows: President of the society, Mr. V. Partridge; chairman, Mr. R. Williams; secretary, Mr. D. E. Talbot, 24 Ashdon Street, Bolton; committee: Mr. A. Hill, Mr. A. Tuflock, Mr. C. Pharaoh, Mrs. D. Gregory, Mrs. L. Richardson.

The award of the annual trophies of the **Cowenry Pond and Aquarists Society** will be made at the annual dinner and the results of the competitions were as follows:







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