

The Aquarist

and Pondkeeper

DECEMBER 1966



MONTHLY
Vol. XXXI No. 9

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	£ 10 10 0
30 x 15 x 12	£ 9 9 0	£ 12 12 0
36½ x 15 x 12	£ 11 11 0	£ 14 14 0
48 x 15 x 12	£ 13 13 0	£ 23 2 0

DISTRIBUTOR OF—

- McLYNN'S FISH FOOD
- ES-ES PRODUCTS
- ELECTRICAL AND GENERAL
- WATER LIFE, AQUARIST, DITCHFIELD'S AND T.F.H. BOOKLETS
- REJECTORS, SEDJETS, AND MAINTENANCE EQUIPMENT
- PROCKTER, SUMMIT AND STAR PUMPS
- CONSTAT THERMOSTATS
- AQUAFERN AND COLOFERN PRODUCTS
- HYFLO PRODUCTS
- LIVERINE PRODUCTS
- STOKES FOUNTAIN
- WINDMILL PRODUCTS
- ROCK GRAVEL AND STRATA ROCK WORK
- STUDENTS' MICROSCOPES
- ALL FEEDING AND AERATING APPLIANCES
- MERCURY, SPIRIT AND DUMPY THERMOMETERS
- STUART TURNER WATER PUMPS
- ZOUBEKO AND BIKO PUMPS
- VI-FIT FISH FOOD
- BLACK MAGIC GLAZING COMPOUND
- GLASTICON '303' AQUARIUM SEALER
- AQUAMASTA GLAZING COMPOUND
- LIQUIFY AND INTER-PET PRODUCTS
- FIBRE GLASS PONDS
- OTTER WATERFALL AND FOUNTAIN KITS

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

Retail Price List 6d inc. Postage
Wholesale List to Bone-fide Traders on application
Freeless closed Sunday and Monday throughout the year

WALTER R. SMITH LTD.
39 Tib Street and 16 Whittle Street
(Off Tib Street)
Manchester 4
Telephone: Deansgate 2961 and 2928

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

presents



50 Marine Tropicals, plus the usual large varieties of tropical fish.

Always in stock Eheim filter, Oconisor, Reactor, Wise pumps, Automatic fish feeder, Metaframe tanks, etc. And now Gro-Lux tubes 24" and 36".
(cannot be sent by post)

466 PAISLEY ROAD WEST, GLASGOW, S.W.1
Telephone: 1890 X 3415 Open Sundays 11 a.m.—2 p.m.



PHILLIPS fish food

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

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

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

*Phillips Cold-water Fish Food contains
SAPROLEGNIL
to protect against the ravages of "bottom wood" fungus.



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

GIVE A DYNAFLO for CHRISTMAS!

The DYNAFLO MOTOR FILTER

- ★ **POWERFUL**—Up to 25 times the power of other pumps and filters.
- ★ **SILENT**—With Magic Magnet Drive.
- ★ Its a **PUMP . . . FILTER . . . AERATOR** all in one unit. No clutter and noisy vibrator pumps etc.
- ★ Every Aquarist wants one.

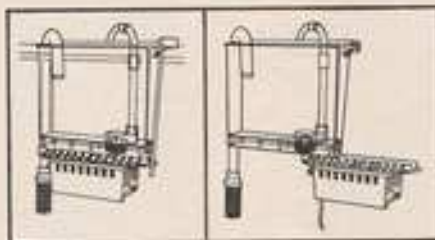
Price only £5 17. 6d.

Stainless steel adaptor for tanks with frames over 1" wide—4/-



Easy to use

Simply hang on the outside back or side of your aquarium. Start the siphon . . . plug in.



Easy to service

Motor unit slides off bottom of filter when washing or changing charcoal and filter wool.

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.

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

INTER-PET 18 Church Street-Dorking-Surrey

DYNAFLO — A NEW CONCEPT IN AQUARIUM KEEPING

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.

Won't you plug one in—it will be an exciting experience.



POSTAL AQUATICS



Suggestions for Christmas

Books for the serious aquarist

"New" Goldfish Pools, Water Lillies and Tropical Fishes—**60s. + 3s.** postage
 Exotic Aquarium Fishes, Superb loose leaf Ref. book—**£7 10s. + 3s.** postage
 Exotic Aquarium Fish Supplements—**6s.** each. Set of 4 **26s. + 3s.** postage
 Saltwater Aquarium Fishes, the Marine reference book—**65s. + 3s.** postage
 W. T. Innes Exotic Aquarium Fish, Revised edition—**56s. + 3s.** postage
 Dictionary of Tropical Fish—**65s. + 3s.** postage
 Encyclopedia of Tropical Fish—**60s. + 3s.** postage

Fish aids of special interest

Ph Test Kits	18/-
Durognost Hardness Kits	15/-
Growel Bubble Up Filter	35/-
Growel Dynaflo Motor Filter	117/6
Eheim Compact Filter	180/-
Growel Swirlaway	47/6
Growel Super Swirlaway	57/6
Rena Super	50/-
E.T.S. Thermostat	25/-
Windmill Breeding Trap	19/6
Lazy Susan automatic Fish Feeder	135/-

Aquariums of outstanding quality

Metaframe Stainless Steel, 24—12—12 ins.	80s. + 10s. p.p.
Metaframe Stowalight hood	78/4 + 6/- p.p.
Metaframe Knock Down Stand, 24 in.	110/3 + 6/- p.p.
Metaframe Complete Aquarium Kit	£10 10s. post paid
Arbe Perspex Bow Aquarium, 24—15—12 ins.	257/6 + 10/- p.p.
Regency Aquarium, stand and tank	£22 10s. + 10s. p.p.

Season's greetings to all our customers and aquarists from Mr and Mrs Barraclough and all the staff at

215 Gt. Horton Road, Bradford 7, Yorkshire. Phone Bradford 73372

Half day closing Wednesday

Late night Friday 8.00 p.m.

THE AQUARIST

**ONE OF ENGLAND'S FOREMOST
AQUARISTS THAT YOU CAN RELY ON**

JUDGE FOR YOURSELF

OUR QUALITY, OUR PRICES,
OUR SELECTION OF TROPICALS,
MARINE TROPICALS, COLDWATER FISH
AND PLANTS

WE ALWAYS GIVE 100% SATISFACTION

It is in your own interest to pay us a visit

NOW ARRIVING REGULARLY
WILD TOOTH CARPS FROM AFRICA
MARINE AND FRESHWATER TROPICALS
FROM ALL OVER THE WORLD

WHOLESALE ORDERS EXECUTED IMMEDIATELY

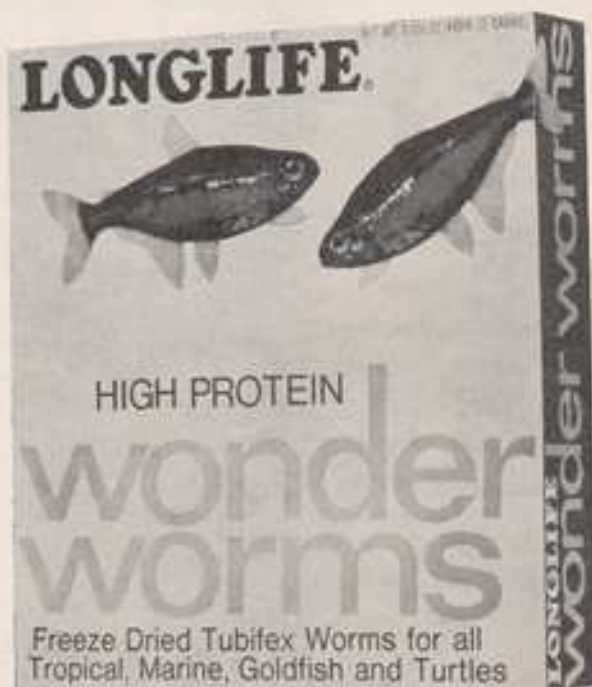
SPECIALISTS AND BREEDERS
OF TROPICAL AND COLD-
WATER FISH. LIVE FOODS.



CHISWICK AQUARIA
136, CHISWICK HIGH ROAD, LONDON, W.4
TELEPHONE: CHISWICK 6549 CABLES: CHISAQUA, LONDON, W.4

PLANTS, ACCESSORIES.
BIRDS, BIRDCAGES.
EXHIBITIONS AND
INSTALLATIONS.

**What's more appealing
to a fish
than a worm?**



A Wonder Worm!

Delicious news: Longlife's tubifex worms! Freeze-dried live by an exclusive new process that captures the full, fresh flavor Nature put there. And nitrogen-protected, then sealed in special foil-laminated packets that need no refrigeration. Result: guaranteed freshness! Plus the nourishment of 50% protein, too. And such palatability that fish and turtles will literally take Wonder Worms right out of your hand!

For further information write:

© Longlife Fish Food Products

Division of Starco Industries, Inc.

50 Cooper Square, New York, N.Y., U.S.A.

BEST WISHES FOR CHRISTMAS AND THE NEW YEAR

STOCK UP NOW WITH SPECIAL FISHES — RARE SPECIES

Red Spiny 12" .. £10 each Red Fish 12" 35/- each Electric Cats 6"-7" .. 30/- each
 Red Nosed Tetra .. 5/6 each Palmatochromis Annectons 5/- & 7/6 each Plectostomus 12/6 and 15/- each
 Discus .. 45/- and 60/- each Adult High Fin Platy 15/- each Red Tailed Chalcous 4" £3 each

New Book — Freshwater Tropical Aquarium 15/- each

SPECIAL—FOR TROPICAL TANKS "GROLUX FLUORESCENT TUBE LIGHTING UNITS".

NEW FILTERS NOW IN STOCK. DYNOFLO MOTOR FILTER LS-17-6. EHEIM COMPACT FILTER 333
 ES-12-6 INCLUDING RACK. EHEIM STANDARD L12-15-0 INCLUDING RACK.
 "GREEN SHIELD" STAMPS GIVEN (PERSONAL SALES ONLY)

HALVYN FILTERS

Reverser Bottom Filter .. 4/-
 Outside Filter Small .. 14/-
 .. Large .. 20/-
 Champion Filter (Bubble) .. 30/-
 Filterfast for 30 G.P.H. .. 25/-
 .. for 60 " .. 47/6
 .. for 100 " .. 60/-
THERMOSTATS
 Silk Seal .. 25/-
 Constant Internal .. 25/-
 Constant New External Type QK .. 25/-
 Wised External .. 25/-
 Inter-Pot .. 25/-
 UNO .. 25/-
 Dual/Adj. .. 18/-
 Inal/Adj. .. 15/-
 Inal/Adj. "Poplar" .. 10/-
 "Poplar" with neon indicator .. 12/8
 Pressur Matric .. 24/8
 Wised .. 10/-, 12/8, 18/-

AERATORS

Beta Junior .. 25/-
 Beta Summit .. 21/-
 Quick .. 25/-
 Beta .. 25/-
 Moorree Major .. 24/-
 Moorree Minor .. 21/-

GARDEN PUMPS

Otter .. 27 17 6
 Snakes .. 27 19 6

PISTON PUMPS

H-50 Junior New Super .. 107/8
 H-50 "A" .. 130/-
 H-50 "B" .. 185/-
 H-50 "C" .. 250/-

Thermometers

Mercury .. 6/6
 Blue Gem .. 5/-
 Durony .. 6/8
Sandries
 Outside .. 18/6
 T. Pinner .. 10d.
 Clamps .. 1/3
 Anzonic .. 10/-
 Tubing 8d. yd.
 Siphon .. 19/8
 Tubing 1/6 yd.
 Glass Wool 1/-
 Filter Carbons 2/-
 Hatched .. 3/4
 Aquaculture 2/4
 In Spot Care 4/8
 Vivos .. 3/4
 Misher Spot .. 3/4
 Core 5/8

Filters

Green .. 15/-
 Bubble-Up 25/-
 Hydro Outside .. 15/-
 Corner .. 4/6
 Outside .. 18/6
 Windmill Hand .. 15/-
 Windmill Air .. 15/-
 Rejeter .. 10/-
 Corner .. 19/8
 Premier Bio-logical Sub-Gravel Filter .. 19/8
 Sediment .. 8/-
 Slim Jim .. 17/6
 Clear King 22/8
 Screen Filter 8/3
 Rock Filter 17/6

TROPICALS

Neons, 8 for £1 | 2/6 each

Roscones .. 4/-
 Angeli .. 2/8 & 3/6
 White Cloud .. 2/8
 Mollies .. 2/8
 Planes .. 2/8
 Roscones .. 2/8
 Black Widows .. 2/8
 Platys various .. 2/8
 from 2/8
 Swordtails .. 2/8
 various, from 2/-
 Schoberti barbs 2/-
 Schoberti .. 2/-
 Ouppies (pair) 1/6, 1/-
 Harlequins .. 2/-
 Cherry barbs .. 2/-
 Nigger barbs .. 2/-
 Chequer barbs .. 2/-
 Red Eyed Tetra 2/-
 Thick Sp. 2/-, dwarf or leeri 2/8, Kissing 4/-,
 Opaline 2/8, Gouramis .. 2/8

"SWIRL-AWAY"

Aquarium Vacuum Cleaner .. 45/8
 Super Model .. 34/8

EHEIM FILTERS STOCKED

BOOK CASE

BOW-FRONTED AQUARIUM
 48 x 10 x 15 £25 10 0
 36 x 12 x 15 £24 10 0
 Standard Bow £25, £17, £13 0 0

PLANTS

Sagittaria .. from 6d. each
 Vallis, Teris .. 6d.
 Vallis, Spiralis .. 6d.
 Anubias .. 6d.
 Ludwigia .. 6d.
 Hydrophila .. 6d.
 Cryptocoryne .. 2/- A 2/-
 Wataria .. 1/8 A 2/-
 Giant Hydrophila .. 1/8 A 2/-
 By post, add 2/- Minimum 10/-

HEATERS 25w to 200w

Uro & Wised .. 8/8
 T.S. Standard .. 7/8

ADULT BARE FISHES

Palmatochromis Kribia .. 7/8 & 10/- each
 Discus .. 47 each
 Large Sailfin Green Mollie .. 25/-
 Anomomas .. 12/8
 Herbivores .. 4/8 each
 Black Cardinal .. 7/8 to 20/-
 Assassin Cats .. 5/- to 7/8
 Malawi Angeli .. 4/- & 7/8
 Black Veil Angeli .. 7/8 to 15/-
 Tin Fish Barbs 5" - 4" - 6" .. 4/-, 7/8, 15/-
 Silvercharks 2" - 5" .. 20/-, 25/-
 Firemouth .. 4/-
 Red Veined Cuppy .. 18/- & 15/- each
 Red Tail Shaka 5" - & 18" - Large 15/- each
 Keyhole Goby .. 10/-

Our minimum order for fishes is £3, a charge of 15/- per container. Carriage to nearest Main Line Station and telegram stating time of arrival. Give phone number if possible.

NYLON COATED AQUARIA

STOCK SIZES
 24 x 12 x 15 £3 5 0
 18 x 10 x 12 £2 8 0
 White or black covers .. 18/6 & 25/-
 Larger sizes on quotation

STANDARD AQUARIUMS

(Light Gauge) (Angle Iron)
 12 x 6 x 6 .. 18/8 24 x 12 x 12 .. 55/-
 10 x 8 x 8 .. 18/8 24 x 12 x 15 .. 60/-
 14 x 8 x 8 .. 19/- 30 x 12 x 15 .. 65/-
 14 x 8 x 8 .. 17/8 36 x 12 x 15 .. 77/6
 18 x 10 x 10 .. 23/8 48 x 12 x 15 .. 130/-

COVERS

18 x 10 .. 16/-
 24 x 12 .. 25/-
 30 x 12 .. 32/8
 36 x 12 .. 37/8

STANDS

18 x 10 x 36 .. 25/-
 24 x 12 x 36 .. 30/-
 30 x 12 x 36 .. 35/-
 36 x 12 x 36 .. 40/-
 Aquarium covers sent by post only at customer's risk.

FOODS

Exotic Flakes .. 1/8
 Hyko Flakes .. 1/-
 Broxian .. 1/8 & 2/8
 Boviv .. 6d. & 1/8
 Dry Hyphila .. 6d. to 3/8
 Liquify .. 2/8
 Infusyl .. 2/8
 Slim .. 2/8 C.W. 2/- & 3/-
 Hobby .. 2/- & 3/-
 McLyne's .. 1/8, 2/8, 3/8, 1/8
 Betor Stimp .. 2/-
 Tetra Min. Growth Food (Growth) .. 4/3
 Wardley's .. 8/-, 4/8, 2/8, 2/3, 1/3
 Fantasy .. 2/-, 6/-
 Tetra Min. .. 1/11, 3/3, 7/8, 24/8, 64/8
 Sunagrow .. 1/3, 2/8
 Vinkraft .. 1/10 & 6/8
 Wunderbar Food .. 2/8, 6/8, 22/8

Postal Charges Add 2/- up to 10/-; 2/6 up to 20/-; 3/- up to £2; 4/- up to £3 (Exception Tanks etc.)
 CARRIAGE AT COST CHARGED ON AQUARIUMS, STANDS, AND TANKS. SENT AT OWNER'S RISK
 (Inquiries stamped envelope please) Cash with Order please

THE CENTRAL AQUARIUM

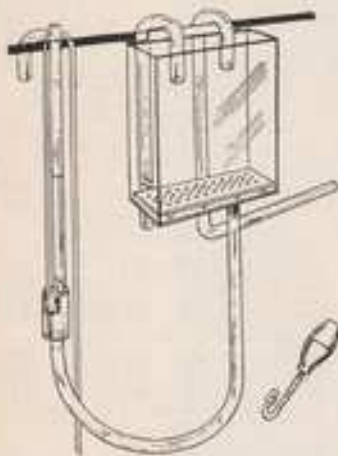
Situated on the A41 Route, opposite Hendon Central Station

391 HENDON WAY, HENDON CENTRAL, N.W.4 Phone: HEN 9700
 OPEN 8.00a.m.-6.00p.m. Sundays 9a.m.-1p.m. Emergency Phone: HEN 9700

filterfast[®] by HALVIN

THE **BIG** OUTSIDE FILTERS

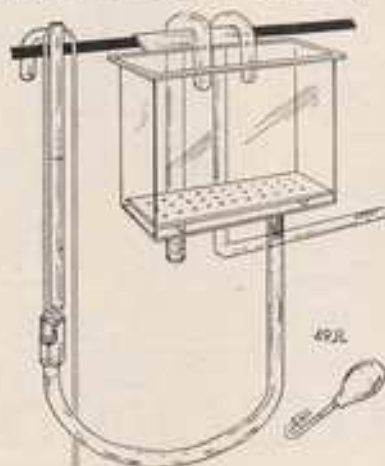
HALVIN No 18 47/6



HALVIN
No 11
28/-



HALVIN No 18L 90/-



All units work off ordinary air pump. Supplied complete with "suresynth" and "sure-karbon" filter mediums. See these strongly made units at your dealers now. All units fit standard angle.

Distributed by

SCAN LTD., OLD BATH RD, COLNBROOK, SLOUGH, BUCKS.

**EVERYTHING
FOR THE
AQUARIST**



**OWEN
REID'S**

of Ealing

**UNSURPASSED FOR
QUALITY
VARIETY & QUANTITY**

**12 SPRING BRIDGE ROAD, EALING BROADWAY
LONDON, W.5.**

Phone: EALING 3259

Hours of Business:—Monday to Saturday 9 a.m. to 6 p.m. Wednesday 9 a.m. to 1 p.m.

NEW! THE HOBBY DISPOSABLE FILTER!

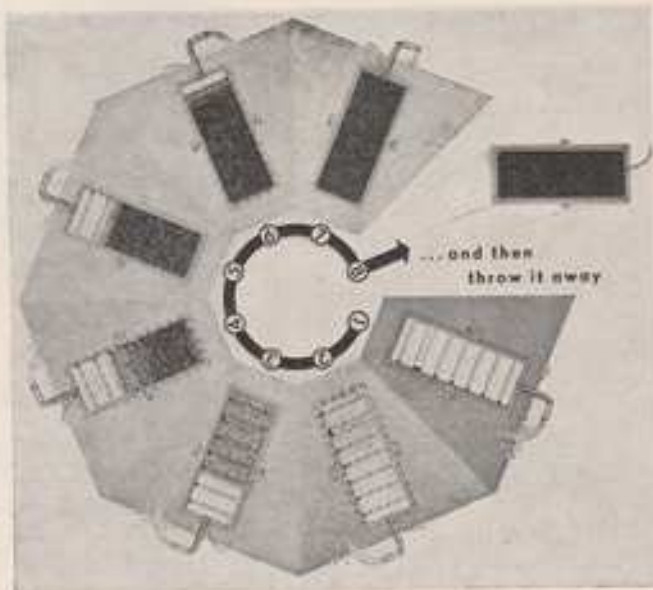
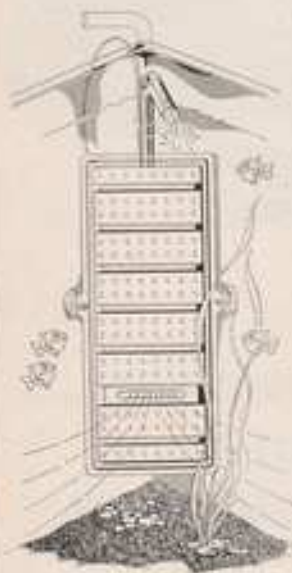
A healthy aquarium through modern filtering

Normal aquarium filters consist of a glass or plastic case which is filled with filtering substances. After several weeks' use the filter becomes clogged and the filtering substance must be renewed. However it is also necessary to clean the filter case thoroughly and to disinfect it, so that neither dirt nor any agent of disease can collect and multiply.

If the filter is not thoroughly cleaned and made germ-free, the result is quite often cloudy water and unhealthy fish.

Complete filter cleaning is time consuming and messy. It is CLEAN, SIMPLE and QUICK with the

HOBBY DISPOSABLE FILTER



Easy to install. Adjustable to all heights of tanks. Changed in a few minutes. Clean and hygienic. High reservoir capacity through microcell vibration.

Pack "A" consisting of filter, airline, airlift, two attachment-suckers and one spare filter . . . price 14/- + 6d. postage.

Pack "B" consisting of two spare filters . . . price 11/- + 4d. postage.

From Hillside Aquatics 44 Woodberry Way, London, N.12

ANOTHER MIRACLE!

Just four months ago T.F.H. introduced to this country a completely new concept in fish feeding.

MIRACLE FREEZE-DRIED TUBIFEX



Price 4/6d. per 5-gram Screw-topped Rigid Plastic Container.

Already this has become one of the most popular Aquatic foods on the market.

NOW WE PROUDLY PRESENT ANOTHER MIRACLE!

MIRACLE SAN FRANCISCO BAY BRAND FREEZE-DRIED BRINE SHRIMP

Ingredients:— Live frozen then freeze-dried San Francisco Bay Brand Brine Shrimp (*Artemia Salina*). 0.1% Bovine Blood has been added as a fish attractant.



Price 4/6d. per 4-gram plus Rigid Plastic Container.

Immediately a small piece of the new MIRACLE SAN FRANCISCO BAY BRAND FREEZE-DRIED BRINE SHRIMP is placed in the aquarium the shrimps separate, absorb moisture and float until eaten. At the recent B.A.F. this food was tested in two of the Marine Aquaria and even "difficult" marine fish, never previously known to take dry food, consumed it avidly.

BE SURE TO ASK FOR "MIRACLE" FREEZE-DRIED FISH FOODS AT YOUR LOCAL STOCKIST. PACKED IN THE RIGID PLASTIC CONTAINERS TO RETAIN FRESHNESS TO THE LAST PIECE.

SOLE U.K. DISTRIBUTORS:—

T.F.H. PUBLICATIONS (LONDON) LTD. 13, NUTLEY LANE, REIGATE, SURREY.
(In conjunction with Miracle Plastics, Corp.—a subsidiary of T.F.H. Publications, Inc., Jersey City, U.S.A.)

The new 'CLEAR VIEW' AQUARIUM FILTER MEDIUM

- ★ FOR USE IN ALL OPEN FILTERS
- ★ MOST EFFICIENT IN POWER FILTERS
- ★ ABSORBS ALL IMPURITIES FROM THE WATER
- ★ LEAVES WATER CRYSTAL CLEAR
- ★ KEEPS FISH IN PERFECT CONDITION
- ★ IS HARMLESS TO PLANTS
- ★ IS A MUST FOR AQUARISTS WHO PREFER GOOD CLEAR AQUARIUMS WITH LIVELY HEALTHY FISH
- ★ OBTAINABLE FROM ALL GOOD AQUARISTS

Place approximately $\frac{1}{4}$ " layer of the medium between two layers of glass wool with or without carbon.

JUST TRY IT AND SEE THE RESULTS OBTAINED

PRICE 5/- PER CARTON

Now introduced after extensive tests by

HORNBY'S

615 STRETFORD ROAD,
OLD TRAFFORD, MANCHESTER 16

Telephone: TRA 2989

TRADE ENQUIRIES INVITED

MARSHALL'S AQUARIA

Phone: BUC 4708

26, WESTBURY LANE, BUCKHURST HILL, ESSEX

It is quite easy to get to Buckhurst Hill. By tube train on the Central Line thirty-five minutes from the West End, and we are three minutes from Buckhurst Hill station. Or by bus routes 20, 39a, 147 to Bald Faced Stag, five minutes walk from there.

OPEN SIX DAYS A WEEK 10.00 A.M. TO 6.00 P.M. (CLOSED TUESDAYS)

A WIDE RANGE OF **TROPICAL FISH** IN STOCK

OVER 120 TANKS ON SHOW

SPECIAL NOTICE: This establishment will close all day Xmas Day and open Dec. 26th from 10.00 a.m. till 2.00 p.m., and Dec. 27th from 10.00 a.m. till 6.00 p.m.

SOME OF THE LESS COMMON FISH IN STOCK AT PRESENT

Adult Leerl Gourami
Adult 3 Spot Gourami
Albino Hillin Mollies
Calamoichthys Calabaricus
Gnathonemus Petersi
Gymnarcus Niloticus

Hemigrammus Rhodostomus
Hyplostomus Plecostomus
Loricaria Parva
Limia Melanogaster
Nannostomus Eques
Pantodon Buhholzi

Parauchenoglanis Macrostoma
Palmatochromis Kribensis
Plecostomus Plecostomus
Roosaveltiella Natereri
Synodontis Spec.
Xenomystus Nigri

And many more varieties of fish

MINIMUM ORDER 10/-

AMBULIA	8/- per doz.
BACOPA	8/- " "
CABOMBA	8/- " "
ELODEA-DENSA	6/- " "
HYGROPHYLLA	8/- " "
LUDWIGIA	8/- " "
MYRIOPHYLLUM	8/- " "
CAPE FEAR SPATTERDOCK	5/6 each
VALLIS (Twisted)	8/- per doz.

PLANTS IN STOCK

VALLIS (Straight)	8/- per doz.
WATER WISTARIA	1/6 each
GIANT HYGROPHYLLA	1/6 each
APONOGETON	
UNDULATUM	2/6 up
AMAZON SWORD	5/6 to 7/6
AMAZON CHAIN SWORD	2/-

POST PAID

BANANA PLANT	4/-
CRYPTOCORYNE	
BALANSAE	3/-
CILIATA	3/-
CORDATA	2/6
HARTALIANA	2/6 to 4/6
RADICANS	7/6
MALAYAN SWORDS	4/-
WATER ORCHIDS	4/-

Please send S.A.E. for price lists.
For wholesale plant list, TRADE headed paper please.
Please address all correspondence as address above.

SPECIAL PLANT COLLECTIONS

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

TROPICALS	£1	H	£1
A	30 plants including Dwarf Lily Cryptocoryne Wisteria	6 Vallis 6 Moneywort 6 Elodea 3 Hornwort	
B	12 Vallisneria 12 Myriophyllum 2 Micro Sagittaria 4 Ludwigia 4 Elodea Densa	AQUARIUM OR POND	£1
C	12 Vallisneria 4 Myriophyllum 4 Ludwigia 4 Elodea Densa 4 Balaos 1 Amazon Chain Sword 1 Portulan Clover	P 12 Sagittaria 6 Myriophyllum 6 Ludwigia 6 Moneywort 6 Hornwort 1 Portulan Riccia 2 Elodea Densa	
D	1 Nymphaea Stellata 1 Giant Hygrophila 1 Apocynon 1 Wisteria 1 Giant Sagittaria 1 Cryptocoryne 1 Indian Fern 1 Portulan Clover	S Giant Amazon Sword Plants 6-8 inches	7/6
E	4 Vallisneria 4 Myriophyllum 4 Hygrophila 4 Elodea Densa	T Water Lilies Very beautiful plants or 3 for 10/-	2/6
F	4 Vallisneria 4 Myriophyllum 4 Hygrophila 4 Elodea Densa	X 1 Wiltonia Cyr 1 Cardalis 2 Heterostella 2 Amazon Chain Swords	3/6
G	4 Ludwigia 4 Cabomba 4 Ambulia 4 Vallis	Y 4 Micro Sag 4 Balaos 2 Amazon Chain Swords 1 Portulan Riccia	10/-
H	4 Ludwigia 4 Cabomba 4 Ambulia 4 Vallis	Z 2 Giant Hygrophila 2 Giant Sagittaria 1 Wisteria 1 Nymphaea Stellata	10/-

ANGLE IRON AQUARIUMS FITTED WITH ALUMINIUM COVERS

Size	Price
24" x 12" x 12"	£14 21/- 8/6
24" x 12" x 15"	£17 4 21/- 8/6
30" x 12" x 15"	£17 4 21/- 8/6
36" x 12" x 15"	£17 4 21/- 8/6
48" x 12" x 15"	£17 4 21/- 8/6

CARRIAGE EXTRA

Any size aquarium made to order.

Please add 2/6 for orders up to 10/-, 4/- up to 20/-, 8/- up to 40/-, 8/- up to 90/-, Glass, Chalk, Shells and Live foods sent at purchasers own risk.

STANDS

24" x 12" x 36"	£47 8
30" x 12" x 36"	£51 8
36" x 12" x 36"	£57 8
48" x 12" x 36"	£67 8

BOW AQUARIUMS

36in. x 12in. x 15in. bow-fronted aquarium with wrought iron bookcase stand £19 11/- complete.

48in. x 12in. x 15in.—29 gms.

Heavy brass, black & gold, and cream. Also plain stands.

Mr. Rous extends to his customers past and present every good wish for Christmas and the New Year.

Owing to the many requests of our customers we have now opened a department for the sale of aquariums and accessories at our Staines establishment.

Opening times:- Mondays, Thursdays, Sundays, 10 a.m. to 4 p.m.
Saturdays, 9 a.m. to 12 noon.

We are also importing weekly several thousands of tropical fish for distribution to Staines and other branches.

BOOKS FOR CHRISTMAS

Tropical fish in the Aquarium	18/-	Illustrated Dictionary of Tropical Fish	70/-
Aquarium Plants	36/6	Exotic Tropical Fishes	150/-
Freshwater Fishes of the World	84/-	Aquarium Plants	37/6
All About Tropical Fish	77/-	Exotic Aquarium Fishes W.T. Innes	63/-
Encyclopedia of Tropical Fishes	65/-	Tropical Fish	6/-
		Aquariums	6/-
		Goldfish	6/-

QUEENSBOROUGH FISHERIES

111 GOLDHAWK ROAD, SHEPHERD'S BUSH, W.12 (1 mile from Shepherd's Bush Market)

Telephone: 5942 3730

Hours of Business: MON. to SAT. 9 a.m.-4.30 p.m. CLOSED THUR.

QUEENSBOROUGH HOUSE, Ferry Lane, Bythe End, Wraybury, Nr. Staines

Telephone: WRAYSBURY 3885

Mon, Thurs. and Sat. 10 a.m. to 4 p.m. SATURDAYS 9 a.m. to 12 noon

16 PICTON PLACE, LONDON, W.1 (1 minute from Selfridges)

Telephone: WELBECK 0418

Hours of Business: MON. to FRI. 9.30 a.m.-6 p.m. SAT. 9.30 a.m.-2 p.m.

ALL POSTAL ENQUIRES TO GOLDHAWK ROAD ADDRESS

The AQUARIST AND PONDKEEPER

Founded in 1924 as "The Amateur Aquarist"



THE BUTTS, HALF ACRE, BRENTFORD,
MIDDLESEX

Telephone: ISLeworth 6221

PUBLISHED MONTHLY

SUBSCRIPTION RATES

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

QUERIES

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

Correspondence with intending contributors is welcomed.

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

The Editor accepts no responsibility for views expressed by contributors.

Contents

	Page
Hobbyist and trader relations	181
BAF 1966	182
Noah's ark aquarium, Weymouth	185
Readers' queries answered	186
Anchor worm	189
Scop peas—Obituary	189
Breeding slow-worms in confinement	190
Safety thermostat	191
The Junior Aquarist	192
Terrapins as pets	192
The Black Widow	192
Maintaining the heat	193
Sea fish that spends its entire life in the belly of another animal	193
Our readers write	194
<i>Limnephilus</i> —caddis fly larva	196
<i>Ciontraria</i>	196
Great Silver Beetle	197
<i>Spongoptera</i> siccans	198
Fish food review	198
Freshwater to saltwater conversion	199
The Bristol shubunkin	200
Change of fashion	201
Book review	202
Oyster dredging	202
News from Aquarium Societies	203

VOL. XXXI No. 9

1966

Hobbyist and trader relations

by John Thorne,
Chairman Hounslow and District A. S.

THERE appears to be, within our hobby at the moment, a great deal of bad feeling amongst clubs and their members that they are getting a raw deal from the (mainly) larger retailers who used to entertain club visits. Numerous reports and letters have been published in various magazines and newsletters this year alone complaining of this. I have done a fair amount of research into this problem and found that there are several 'fors' and 'against's' on both sides.

For the trade side against such visits I learned of two who had had fish stolen; in one case an *Aruwana* and the other a really large *Anostomus Anostomus*. Neither one a cheap loss. The former trader also lost a lot of large Amazon Swords as well. A third, who has a beautifully laid out country house and grounds, had club parties picnicking on his lawns. This he didn't take exception to, but he did to the amount of litter that was often left behind. The last straw was when people started picking flowers and, to get at the blooms they wanted, broke down shrubbery, etc. Several more complained that all too often clubs treated their visits like a trip to the Zoo aquarium, just looking and not buying at all. With staff problems and the wage scales that at present prevail, this makes such visits wholly uneconomic and time-wasting.

Now for the club and enthusiast side. Many are dismayed on visiting nationally and locally well known hatcheries, etc., at the shockingly poor selection usually available and indeed, at the condition of some of the specimens offered for sale. A point I particularly take exception to is the filthy conditions that some of our pets are forced to endure. This in itself puts the majority of people off at once. Another great point I know amongst the keen show enthusiasts in the hobby is that they like to select their

Continued on page 199

BAF 1966

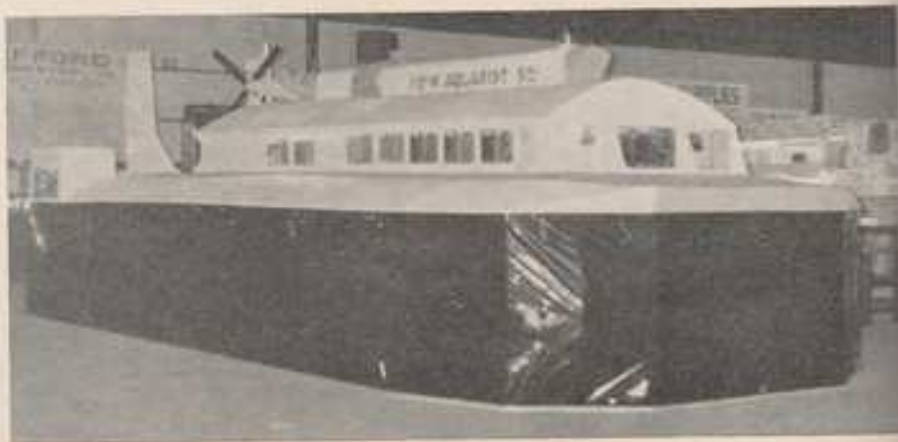
by A. Boarder



Creswell's entry didn't gain an award but was a highly original and novel exhibit

I HAVE been reporting these exhibitions since 1950, and each year I have had to report an increase in entries and interest. It is therefore difficult for me to find words adequate enough to describe this year's show. If I had to write blurbs for a new film I could use such adjectives as stupendous, terrific and colossal, but I am rather at a loss for words to describe the marvellous effort made by the supporting and exhibiting clubs. Unless anyone was fortunate enough to attend this show he can have little idea as to the attractive displays of stands and the enormous number of visitors to the show.

The hall was 100 yards long and 25 yards wide and on the Sunday it was so packed with visitors that when looking from a raised place at one end of the hall there appeared just a sea of heads. I understand that 9,000 visitors saw the show. There were 31 stands put up by exhibiting clubs and societies and the ingenuity of many of them deserved considerable praise. This type of show is so attractive, not only to aquarists but to the general public. After all, at the usual aquarists show there are rows of tanks, all looking rather alike and often with a small fish in an



The Isle of Wight's winning entry of the hovercraft

THE AQUARIST



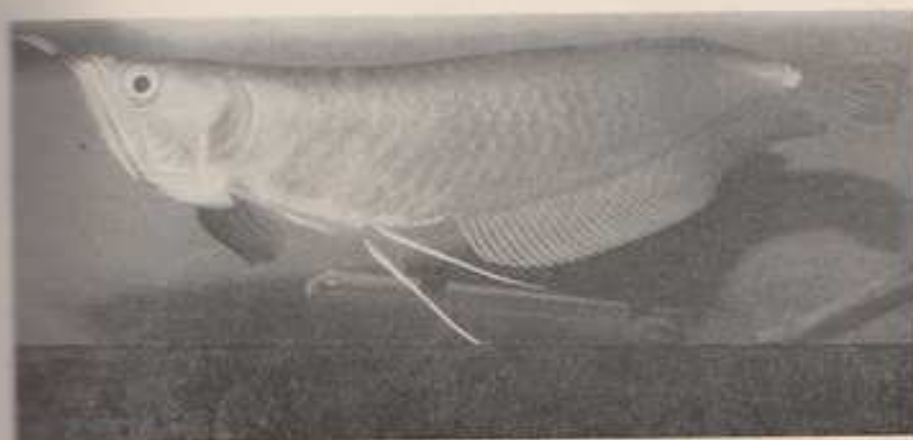
otherwise empty tank, hiding behind the front tank iron.

Whether the visitors were aquarists, their friends or the ordinary public, I am certain that they found much to interest them. Most of the stands were very neat and attractive but a few were especially good with schemes which showed what a lot of thought had been put into the efforts. The outstanding exhibit of the Isle of Wight A.S. was a model of a Hovercraft, about 24 feet long and, I believe, a half size model. Their display tanks were arranged round the curtain and I must congratulate this society on coming so far and making such a grand display. The stand was awarded first prize and the second by Gorton and Openshaw A.S. was a sailing boat, full size, with tanks let in the imitation sea surrounding the boat. The third prize went to Blackpool, with a lighthouse which had even a revolving light at the top. This was worked by an electric motor which gave three revolutions a minute. Another very good stand was that of the Cresswell and District A.S., who displayed a pit shaft with the wheels etc., and their tanks inset round the walls of the building. Although this club has only been formed for a year, the members are so keen that, far from being disappointed at not getting a prize, they state that they will be at the show next year and they intend to win.

Another good stand was a water-mill complete with a five foot wheel working by water. Another novel entry was representing the World Cup, with flags of the competing nations displayed. One stand which was missing this year was that of the Guppy Association. The many enquiries at the Aquarist stand for this display showed how much interest had been lost by the decision not to exhibit by the

Continued overleaf

Left
Gorton and
Openshaw's
sailing boat
gained
second prize



*Osteoglossum
bicirrhosum*—
this fine
specimen of
an arowana
attracted
much
attention

Society and many visitors hope that next year they will see their usual attractive effort reintroduced.

There were plenty of very good fishes for the aquarists to inspect but I feel that the entry which stole the thunder was a beautiful marine tank exhibited by the Marine Study Society. I have never seen a lovelier tank in my life and was entranced by the wonderfully coloured exotic tropicals, especially a couple of clown fish rubbing themselves continuously in and out of a fine large sea anemone.

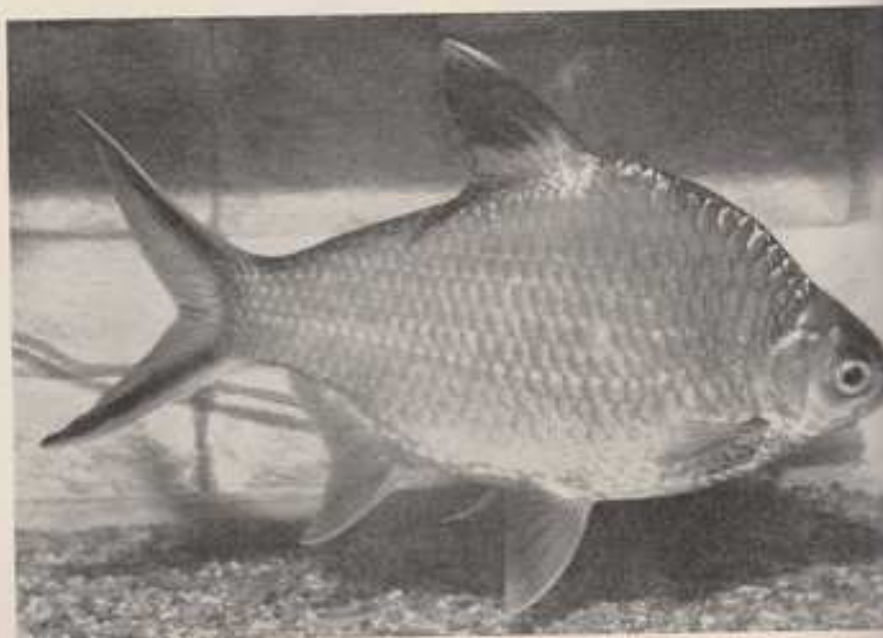
The fine pair of Tinfoil Barb attracted much attention but one of my favourites was a fine specimen of an Arowana, *Osteoglossum bicirrhosum*. Not only was this fish very attractive but as soon as anyone looked at it a splendid performance was enacted. The fish swam from end to end of the tank in mid-depth, showing off like a film star.

The dealers' stands were more numerous than I have seen before and by the look of the six-deep ranks of prospective buyers surrounding them most of the time, I hope that their attendance at the show was as rewarding as possible.

I understand that the entries were 30 per cent. up on last year and that several new clubs were exhibiting. I can foresee that next year the length of the hall will have to be increased to accommodate all the entries. ■

* Full results of the festival on page 203

Right—
Blackpool's
lighthouse
took the
third prize



One of the
splendid and
very large
tinfoil barbs
shown at the
festival



The above picture shows the realistic approach that has been taken in setting up this aquarium

Noah's Ark Aquarium, Weymouth

THE Noah's Ark itself is in the shallow lake which forms part of Weymouth's backwater, and is actually built on a concrete base (a thousand tons of rock blocks) with the hull built around to appear as if afloat. The actual building is 75 feet long and 35 feet wide, with the inside divided down the middle by a long planter filled with tropical flowers. There are eight four-foot tanks down either side at adult shoulder height, and two four foot tanks at children's level at the bottom end, over which is the beautiful mural of Noah sending forth the Doves—a masterpiece in brilliant colouring 15 feet wide which was specially commissioned for the Ark.

The collection displays a large variety of fish, one tank devoted entirely to tetras, another to gouramis, guppies, angels, large tinfish, blue acaras, discus (i.e., a tank for each of these). One amusing set-up is a tank full of bumblebee fish with a couple of china beehive aerators made especially for the purpose by a local potter, and which,

duly labelled "Mrs. Noah's Bees" causes great amusement and interest. The children's tanks are community ones and also have divers, crocodile and mussel diffusers in them which the little ones love to see. (There is also a specially built rail around the higher tanks so that the children can see into the adult tanks as well as their own). Wired-in music plays soft Hawaiian tunes in the background.

Open from daylight till dusk in the summer and ten to six daily, including Sundays, during the winter, with early closing Wednesdays. Fish, plants and all equipment are available on the premises.

The Noah's Ark was only built this year, and was opened to the public on the 26th May. Over 50,000 people had visited it by the 26th August, and many more since then.

Prices of admission are: Adults 2s.; children over 5 years and Pensioners 1s. ■

Our experts' answers to tropical fish-keeping

Many queries from readers of "The Aquarist" are answered by post each month, all aspects of the fancy being covered. Not all queries and answers can be published, and a stamped self-addressed envelope should be sent so that a direct reply can be given.

The fish in my pond are suffering from fungus. How does this get into a pond and is there any hope of saving the fish?

The spores of the fungus *Saprolegnia* are present in most waters. Any healthy fish is not likely to be attacked unless it receives some damage to its skin. All healthy goldfish have a protective mucous covering which repels most parasites and germs. If a fish is in bad condition this mucous becomes deranged and the fish is then prey to any attack by pests or germs. By your description of the pond I consider that it is very overcrowded with fishes. This would mean that they are not in a healthy condition and so would soon succumb to any growth of the fungus. The salt treatment should cure a fish unless it is too far gone, which is when the fungus reaches the gills. See that conditions are correct in the pond and that too many fishes are not kept.

Recently I bought a pretty plant called Australian four-leaved clover. It has made no progress since I planted it in my tank, and I wonder whether you could give me any hints as to its successful cultivation in the tropical aquarium?

There are several species of the genus *Marrubium* indigenous to Australia. *M. hirsuta* is the species most suited to growing in the tropical aquarium. This plant does best in a shallow pot of gritty clay or loam placed where it will receive a bright top light. The trouble with this plant, however, is that it tends to push its stems and hairy foliage well above the surface of the water.

I have just installed a 2 ft. tank in a dark corner of my lounge. The reflector hood has sockets for three lamps. Please tell me the total wattage required to keep the plants healthy? I intend to keep the lamps switched on for at least ten hours each day. 120 watts (three 40 watt clear or pearl lamps) is advised. Most plants should prosper under this intensity of light in clear water not more than 15 in. deep.

Is it true that a good bunch of *Elodea densa* introduced into a tank of green water will render it quite clear before many days are out?

Elodea densa is a fast-spreading and greedy feeder which, in sufficient quantity, will rob free-swimming algae of much food and light. About a dozen longish stems of this plant weighted to the bottom of a greened-up tank not larger than 24 in. by 12 in. by 12 in. will almost always lead to a diminution of free-swimming algae before a fortnight is out.

At what age can a male guppy fertilize a female guppy?

Some young males reach sexual maturity sooner than others, but in general we would say that a male guppy is capable of fathering a brood at the age of five to six weeks.

Recently I came across an interesting reference in an American magazine to a fish called the congo cichlid. Please tell me whether this fish is available in this country and is it suitable for a community tank?



Cichlasoma nigrofasciatum

The congo, or kongo, cichlid is just another popular name for the black-banded or zebra cichlid formally known as *Cichlasoma nigrofasciatum*. This fish is attractive in appearance and easy to keep, but is a great scrapper and destroyer of plant life. Because it is easy to breed and does not grow inordinately large it comes on the market quite frequently.

A crack has appeared across the corner of my framed aquarium well below the water line. What steps should I take to prevent the water seeping out?

Provided the cracked glass is still held securely in the frame you should be able to make a permanent repair by painting over the crack with two or three coats of clear varnish. If moisture is oozing through, mop it away with an absorbent cloth and apply surgical tape along its length. Then, before this tape has time to absorb moisture, paint over its surface with a quick-drying enamel or paint.

I have just acquired a fine pair of *Rivulus mairii*. Is this tooth-carp easy to breed?

A pair of *Rivulus mairii* will breed freely if you give them a tank to themselves and feed them generously on such things as gnat larvae, whiteworms, and the like. The large adhesive eggs are deposited in the plant life—dense planting is called for—every so often and the fry, as they hatch out, keep clear of the parent fish. The fry, which are about the size of newly-born guppies, can be given micro-worms and tiny *Daphnia* as soon as they hatch out.

I am thinking of starting a small tank containing three or four minnows. What size tank should I have and can you tell me where to find a stream containing minnows?

You should have a tank not less than 24 in. by 12 in. by 12 in. Minnows like very fresh water. I do not know what streams are in your district but you will have to find one with fairly fast running water and a gravelly bottom. Minnow traps are sold by some angler suppliers and if baited with bread are very effective at catching these fish.

Coldwater fish-keeping answered by A. Boarder

Can I breed bitterling carp with goldfish in my pond?

Bitterling carp have a peculiar method of breeding and I do not think that you would be successful at getting them to breed in your goldfish pond. The bitterling carp only lay their eggs in a mussel where they hatch out. Unless you had some of these freshwater mussels living healthily in your pond there would be no chance of them breeding. Freshwater mussels would only remain healthy in a well established pond with plenty of mud or mulm at the bottom. Otherwise they could not move around and feed.

A two-year old roach was found dead in my pond. I thought it was suffering from egg congestion. On opening it up I found the enclosed specimens. I would be grateful for your opinion as to what they are?

The specimens sent were tape worms. These could live in a fish for some time and grow to a great length. They live on digested food in the intestines of a fish and lay many eggs which are passed by the fish in its excrement. Some forms of tape worm go through a cycle of development and in one form the small parasites are eaten by a bird after eating an infested fish. A further metamorphosis takes place and eggs are laid in or near water; fishes then get infested and the tape worm develops inside a fish which has eaten the eggs. This emphasises the danger of introducing wild fishes into a goldfish pond without due care and quarantine.

I would like to keep a small pair of sticklebacks in a tank. How do I feed them?

These fishes live on many forms of live foods and can be kept by giving plenty of space and feeding on chopped small garden worms, white worms, tubifex, blood worms, water flies and broken maggots. They may take some items of dried foods but do better with live foods.

When is the best time to clean out my pond?

At the end of the autumn when all the leaves have fallen and vegetation died down.

I have a pond with fish, water lilies and snails. I am interested in getting the young snails to maturity and the question is, do fish eat snails? I wrote to a gardening magazine for information as to this and was given the following answer and would be glad of your comments please. The reply given was—"I assume that the snails you refer to are the ordinary pond snails rather than the distinct 'Water-snails.' Pond snails lay their eggs in the way you describe and breed quite freely. I don't think the fish would eat the young snails but had you had the true water-snails these would eat baby fish."

The reply received from the gardening magazine is hardly surprising as few of such magazines could have on their staffs experts on all subjects. Of course pond snails are water snails and I have yet to see a water snail stalking a fish in an endeavour to eat it. Most coldwater fishes will eat very young snails, that is, soon after they have hatched. Tench and some other fishes will also eat fully grown snails, as even if they cannot crush the shells they suck the snails out and consume them. If you want to see more water snails I suggest that you take some leaves with snails' eggs on from the pond and hatch them out in safety. You can feed the young snails on soft vegetation,

crushed lettuce leaves will do. The types you have are the large pond snail (*Lymnaea stagnalis*) and the Ramshorn (*Planorbis corneus*).

I queried a description of how to set up a tank for goldfish which was given by the B.B.C. in which several things were queried with which I did not agree. One was that they put fish food in before the fishes were added and said that the water should be changed every two days for the fish to remain healthy. In reply to my query as to why a book on such a subject had not been consulted I was told that there was no need for this as they had been advised by a Fellow of the Zoological Society. What is your opinion of this please?

The qualification of the consultant does not mean that he was an expert on setting up an aquarium. A properly set up and run tank can last for many years without ever having the whole of the water changed. Just a weekly servicing to remove some of the mulm is sufficient. At such times a small proportion of the water is removed and replaced with fresh.

I have a female goldfish which I think is going to spawn. Can you tell me how long it takes for her to spawn?

A female fish will not normally spawn unless a male fish is in attendance. The eggs (hard roe) can remain in a fish for a long time and they will not be expelled until a male fish encourages the female to lay. This is done by the male chasing the female through water plants and nudging her about the body. If a female did drop her eggs without a male fish being with her at the moment the eggs would be infertile. It is strange why goldfish should spawn at a particular time or day as they can be together in a good environment for weeks without any signs of starting to spawn. Something triggers off their actions but but it is open to question as to what it is. It certainly seems that goldfish are not likely to spawn unless the water has a good oxygen content.

Please can you advise me of any way to cure a fish of fungus disease other than using salt?

There are substances advertised in *The Aquarist*, for the cure of fungus which you can try. I have always found that the salt treatment is effective. Sea salt, Tidman's will do, is better to use than table salt and a tablespoon to a gallon of water is usually enough, but if the disease persists after four or five days some more salt can be added, even up to another tablespoonful. When treating a fish see that the water keeps free from smell and do not use a deep container. It is sufficient if the water just covers the extended dorsal fin.

My concrete pond has developed a leak which is not very big but the pond loses about seven inches in a week. I would like to empty and refill the pond in one day, after mending the crack. What could I use, and would Sygla be all right for the job?

Sygla is very good for stopping leaks in a greenhouse roof but I do not think it would be suitable for repairing a crack under water. I find the best substance to use is Prompt cement. It appears that this is difficult to buy in some areas and so if any quick-drying cement can be

Continued overleaf

An extra page of queries has been inserted due to the increased number of letters received

Continuing coldwater queries

obtained it should be all right. The Prompt cement sets in about half an hour and I have found that a repair with this can be washed after an hour and the pond refilled. The small amount of free lime is not likely to harm the occupants of the pond. I find that a small patch of lime-film comes to the surface after a day or so and this can be carefully scooped up with a small saucer. The cement can be mixed with equal parts fine, sharp sand. Only damp a little at a time as it is used as it sets so quickly once damped. Any loose concrete must be removed from the crack and the surface to be repaired must be clean and wetted slightly.

Your advice was to use sea salt instead of table salt. I have sent away for some but am doubtful if I can get any. Would sea water be as good as I live near the sea; if so what proportion should I use with fresh water?

There is no need to experiment with sea water. Buy a tin of Tidmans sea salt from any chemist, this is all you require. Boots used to sell a good cheap kind called Shores' sea salt, but I have not been able to get this for some time.

What is a good disinfectant for a tank containing fishes and plants and also for an empty one?

If you use too strong a disinfectant in the occupied tank you could harm the fishes. A solution of permanganate of potash is one of the safest to use. Make it the colour of beetroot and it should not harm the fishes or the plants. For an empty tank it is possible to use stronger types and a tablespoonful of household ammonia should be sufficient to kill any pests or disease in a 24 x 12 x 12in. tank.

I have been given a culture of small wingless flies and have been told that they are excellent food for goldfish. What medium should I use to breed them?

Compost as advertised in "The Aquarist," for breeding Grindal worm etc., should be all right for the job. However, why not breed white worms (*Enchytrae*) instead, as they would be less trouble and a very good food for all types of small fishes.

I have recently obtained a pond with goldfish and have become interested in keeping fishes. I have a book or two on the subject but cannot find any reference anywhere as to how long a fish can be kept out of water when giving it any treatment.

Fishes similar to goldfish can be kept out of water for a considerable time, at least as long as is necessary to give treatment. The main point to watch is that the fish is never allowed to get dry, especially the gills. I have known fish of the carp family live for a day or so when wrapped in wet grass or moss. When handling a fish do so with wet hands and try to avoid holding it too tightly or removing any of the mucus covering.

If it is necessary to kill a sick fish, what is the best way to do it?

Dash the fish smartly on a hard surface, such as a concrete path. Death is instantaneous and I know of no better or quicker way of dealing with the problem.

It is stated that copper is poisonous to fishes but what can I do so all my house water comes through copper pipes; is there anything I can add to the water to counteract the ill-effects of the copper?

This is a difficult problem. I know of nothing which added to the water would nullify the effect of the copper. I think that if the water pipes are not very new it might not be so deadly. If you have no other source of supply then I suggest that you allow the water to run to waste for a time and then use the following for the pond. It is usually when the water has been in contact with the copper pipes for some time that the trouble would be worse. Also, if water is run continually into a pond through copper pipes this is very bad. If you fill the pond with water as suggested you could try some water plants and *Daphnia* to see if they survive before adding any fishes. A few water snails would also be a good test as these soon die if the water is dangerous. The trouble might be to find the snails once they died.

I have moved to a house where there is a garden pond with plants and goldfish. The previous owner told me that he never fed the fishes but left them to their own devices. Is this all right or should I feed them sometimes?

If the pond is well planted it is probable that the fishes will be quite safe if left unfed. It depends on the number of fishes there are in relation to the amount of water. You can always test whether the fishes are hungry by throwing a piece of dry, brown bread on the surface. If they are hungry they will soon be up after it and then some suitable fish food can be given.

I am thinking of adding a couple of catfish to my pond as scavengers. Will the existing fish in the pond turn on them and attack them?

There is no likelihood of this happening if the occupants are goldfish. The boot will be on the other foot as catfish can attack and eat any fish small enough to get in their huge mouths. If you want catfish to grow large enough to eat all the other fishes in the pond by all means add them, but any well-kept pond can function very well without catfish, as ordinary goldfish are just as good scavengers providing they are not overfed.

I have a fantail in my pool which has developed white patches on the body and it is losing some scales. What is the cause and cure?

It is probably suffering from Costiasis, a parasitic disease. Place the fish in a shallow container such as a plastic washing-up bowl. Add sea salt to the strength of a tablespoonful to a gallon of water. Do not have too much water in the bowl, just enough to cover the dorsal fin when extended. Leave in this solution until cured and change the water if it gets foul to a similar solution strength. Do not feed until the fish appears to be improving and then give live food only for a time.

I think my fishes in the pond have fish lice on them. I want to change them to another pond and would like to know what to bathe them in before doing so?

A Dettol solution should be all right. Not more than a quarter teaspoonful to a gallon of water is enough but never leave the fishes in this solution unattended, as if a fish turns over, it must be removed immediately. In any case do not leave fishes in this for more than five minutes. Fishes usually recover quickly when returned to fresh water. A too strong solution of Dettol could be dangerous as it is a powerful disinfectant.

Anchor worm—a menace to the garden pond

by Astilbes

THE above pest is not a worm but a crustacean and goes through a metamorphosis as do many other crustaceans. Until recently it was thought that this parasite did not occur in Britain, but it is quite certain that specimens of it have been found attacking goldfish in garden ponds. It is probable that the pests were introduced into this country with goldfish imported from abroad. In the early stages of development it is possible for the larva of the crustacean to be embedded in the skin of a fish and it would not then be noticed. The later development of the 'worm' would not occur for some time afterwards, weeks perhaps.

I must admit that I have never come across this pest in all my experience of fishkeeping. It may be that I have had no fresh fishes in my pond since 1937, when I first started my series of fantail goldfish. My only knowledge of this parasite was what I had gained from books, and the shape of the 'Anchor worm' was quite familiar to me from illustrations.

Over several months I have had letters from readers with queries as to what the particular pest was which was attacking their fishes. One sent me some dried up specimens which looked like *Lernaea* to me. I then had other letters about the pest and one or two very good sketches of the creature which indicated to me without much doubt that the creatures were actually *Lernaea*. I answered one of the queries in "The Aquarist," some months ago and had a letter from a scientist of the Freshwater Biological Association on the matter and he questioned as to whether my diagnosis was correct as this parasite had not previously been reported in Britain.

However he has been most helpful in trying to solve the problem and with the assistance of some of the pondkeepers who reported the pests to me it has been possible to establish quite definitely that the parasites are *Lernaea*. Some of the *Lernaea* have been sent to him and have been recognised as the creatures in question.

It appears that the 'worms' found on the fishes are all females which attach to the fish by means of 'arms' which grow from the head. The male is tiny and resembles a Cyclops. The females produce two bags of eggs from which the larvae emerge. These are called naupli which settle on a fish and turn into the *Lernaea* as described. Some species of *Lernaea* have larvae which can infest the gills of fishes and cause great damage.

It appears that the *Lernaea* can only be pulled from the fish with tweezers when it is probable that a bad wound will be left. Whether the fishes could be treated when the first signs of the trouble are found will be open to experiment. I wonder if it would be possible to prick the spot where one of the larvae is developing on a fish and smother with a strong disinfectant. The 'worm' is apparently quite tough as it does not break when it is pulled away with tweezers. It has been stated that the parasite will leave a fish if it is touched with paraffin, but if it is well attached to

the fish I am rather doubtful as to the efficiency of this method of ridding the fish of the pests.

The letters I have received from readers describe the pest as being about half an inch long, like a thread emerging from the fish. The following is a description I have received:—"The creature which is about half an inch long adheres to the side of a fish and is semi-transparent and seems to have transparent suckers from the head. I have removed two with tweezers and they have left open wounds. The fish were introduced to the pond two months ago and appeared quite healthy."

Another letter said: "A couple of months ago we stocked our pond with goldfish. All went well for a time but about six weeks later we noticed that five fish had a red spot, all on their backs, at the end of the dorsal fin. A day or so afterwards these spots developed a white 'head,' rather like a boil would appear on us. A little later still each place had a thin root or thread (white in colour), growing out of it. The fish were still lively and eating well. Salt baths were tried with no effect. Then the parasites were pulled out with tweezers when a large core came away with each one leaving a nasty hole with some bleeding."

The infested fishes were then given a salt bath and a later letter from the same reader informed me that the fishes appeared to be quite well again with no further outbreaks of the pests. It seems that if a bad infestation by these parasites was present in a garden pond it would be difficult to clear the pond again; the larvae might still be present in the water and being so small would not be seen. It certainly appears that the *Lernaea* have come on fishes introduced into this country and it is fairly sure that most goldfish on sale today have been imported from abroad. If such fishes had some of the *Lernaea* larvae on them when brought in they would be in such a stage of development that they could go unnoticed for some time. From some of the letters I have received on the subject it seems that about six weeks can pass before the actual worm-like *Lernaea* protrudes from a fish.

As this parasite may become quite prevalent among imported goldfish it is essential that all pondkeepers watch for the pest and with the co-operation of all it may be possible to provide a good deterrent which will help anyone who may get an attack on their goldfish by these parasites. ■

Stop press—OBITUARY

It is with deep regret that we announce the death of Mr. W. G. Phillips. Further details will be published in our next issue.

Breeding slow-worms in confinement

By H. G. B. Gilpin

IN an attempt to breed these interesting and attractive creatures under indoor conditions, a male and two females were kept together for several months. I obtained the male about a year and a half ago and the first of the two females in the early spring of this year. The second female was introduced in June. All three were fully adult, in fine condition and averaged around fourteen inches in length.

They were placed in a standard, commercial type metal sided vivarium with a sloping, sliding glass top. Holes covered with perforated zinc in the sides provided ventilation. Its overall dimensions were twenty-four by fourteen inches, rising from three and a half inches in front to seven inches at the back. A loose hard-board shield, six inches wide, was laid on the glass to ensure that at least a part of the vivarium was permanently shaded. The position of this shield could be varied so that by moving it from time to time the vegetation could receive an adequate amount of light.

The vivarium was placed in front of a West facing window. Its floor was covered with coarse sand over which was laid an inch of soil. A few relatively large stones were scattered here and there, their rough edges being of assistance to the animals at such times as they were changing their skins. Two flat stones placed together to form a "tent" supplied the slow-worms with a retiring place. They used this freely and also buried themselves under the stones when in need of seclusion.

A few plants, including small cacti, succulents and a

piece of turf were introduced. At first I was hesitant about the cacti in view of the sharp spines covering them. In actual practice these fears proved groundless. The slow-worms remained in excellent condition and avoided damaging their skins on the innumerable points. Water was provided in an earthenware pot, four inches in diameter and three quarters of an inch in depth. A few daphnia were put in the water to keep it clear, thus avoiding too frequent changes and disturbance of the slow-worms in the early stages.

The slow-worms were not difficult to feed. They were given small earthworms, gentles and slugs, the latter ranging in size from the smallest available to a maximum of not more than three quarters of an inch in length. Ants and woodlice were also offered but these disappeared slowly. The slow-worms rarely ate the gentles and many of them pupated and later emerged as blow flies, at which stage in their life history they had a greater appeal for the slow-worms. Slugs proved to be by far the most favoured item of diet. The slow-worms seized them readily and swallowed them with slow deliberation.

During the last week in August the female, which had been caught in June, died. A post mortem disclosed the presence of a fully developed young one. A few days later the remaining female produced ten babies, five of which were left with the parents and five transferred to a nursery cage, smaller than the breeding cage but similarly furnished. They were beautiful little creatures, black on the underparts

Continued on page 187

A picture of a slow-worm wriggling its way through the grass



Safety thermostat

by Joshua Allen

MOST of us have the permanent nagging worry that one day we will look at a tank to find steam rising from the water and the fish dead unhappy or just dead.

The simple method described here will prevent this occurring. Anybody who has wired in his own thermostat can fix this within an hour by following the step-by-step instructions.

OPERATION

The diagram is almost self explanatory. An additional thermostat is inserted in "series" in the mains supply to the heater. This extra one is called the safety thermostat. The safety thermostat is set at 5 (to 10) degrees above the normal temperature of the tank. It is therefore always closed. In other words it is doing its best to raise the temperature by 5 degrees, but it can't because the original thermostat is opening before the water temperature rises above normal.

FAULT CONDITION

If a fault occurs and the original thermostat sticks in the closed position, par-boiled fish is usually the result. However, now the safety thermostat comes into operation at 5 degrees above normal and all is safe though a bit warm.

HOW TO DO IT

1. Strip the outer covering of the heater cable (switch off and disconnect first!) and pull out the "live" (red, usually) wire and cut it.
2. Strip off the last half inch of insulation on the two

new ends.

3. Take the safety thermostat and bare the ends of the two wires in a like manner.

4. Join in the safety thermostat leads, one to each of the two new ends pulled out of the heater cable. Insulate appropriately.

You should now have your safety thermostat wired into the heater cable looking just like your normal thermostat. By the way, it doesn't matter if it is connected into the mains side of the normal thermostat or between it and the heater.

SETTING UP

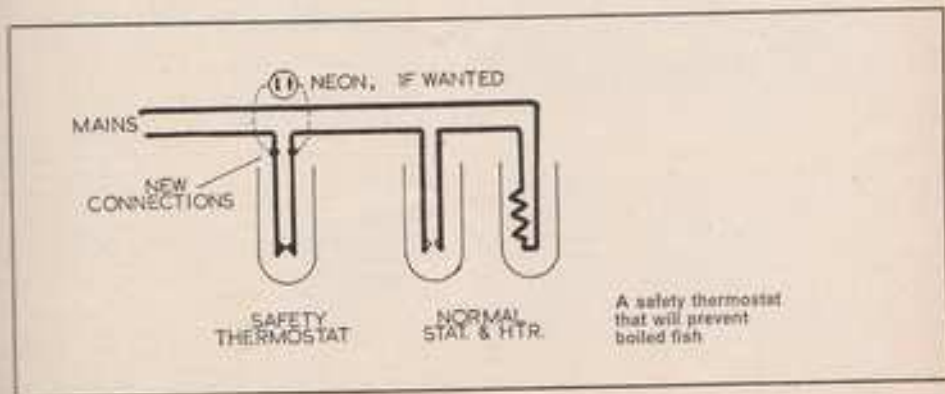
Adjust the temperature of the safety thermostat according to maker's instructions. Remember to take the normal one out of the water (so that it closes) whilst you are making this adjustment.

WHAT TYPE OF THERMOSTAT?

As this is for emergency operation and we hope will never actually have to operate, I would suggest a cheap one. Old ones out of my junk box I found to be quite suitable for this limited task.

REFINEMENT

A tiny neon indicator across the contacts of the safety thermostat will glow if the contacts open, indicating that the safety thermostat has come into operation and all is not well. A suitable neon encased in plastic, completely waterproof and requiring no mounting (it can be dangled on the integral leads) can be obtained for about 4s. 6d. ■





The Junior Aquarist

European terrapins (*Emys orbicularis*),
see article below

Terrapins as pets

by Ian Coggins (13 yrs)

THE species of terrapin most commonly seen in pet shops is the Red-Eared or Elegant Terrapin (*Pseudemys scripta elegans*). This beautiful North American terrapin is a vivid apple-green colour, with a red mark on the side of its head, hence the name Red-Eared Terrapin.

Unfortunately these charming creatures are very hard to keep in our British climate, and very few of them survive the first year of captivity. Most of the specimens in shops are no more than babies and are no bigger in circumference than a half-crown.

Housing

The ideal enclosure for these small turtles is an average size aquarium with one to two inches of water in it (or more). In the water should be placed one or two large, flat stones on which the terrapin can bask in the heat. The most satisfactory heating in the tank is that of a lamp bulb which can be rigged up in the hood of the aquarium. A lamp bulb is essential as it gives the necessary heat and light in which terrapins can "sunbathe." If possible the temperature of the tank should be maintained at approximately 75°F as the chances of survival are far more likely in that heat.

Feeding

The terrapin's diet should be as varied as possible consisting of very small pieces of raw meat, earthworms and, if possible, water insects. Quantities of grated cuttle-bone should be sprinkled on the raw meat to provide calcium which is vital for the strengthening of the bones and shell.

As mentioned before, the Red-Eared terrapin, although being very attractive, is very difficult to keep alive for long and is not really the terrapin for a beginner. However, there are three species which are very hardy and if kept properly can live up to about 25 years. These are the European Pond Tortoise and the Spanish and Caspian Terrapins.

The European Pond Tortoise (*Emys orbicularis*) which can grow up to over a foot in length is best housed in a garden pond. In the winter it should either be allowed to hibernate or brought indoors and put in a large aquarium. In colour it is dark brown or black with a covering of small yellow spots. It is found in N.W. Africa and Central and Southern Europe. The Caspian (*Emys caspica*) and Spanish (*Clemmys leprosa*) Terrapins are closely related and can be treated similarly in captivity. A fairly large tank is needed and this must be filled with about 5 or 6 inches of water. A tall stone is needed for basking in the heat of the lamp bulb and plenty of water for swimming and exercise. The diet for these terrapins and the European Pond Tortoise is the same as the Red-Eared's but in larger quantities.

Nearly all terrapins spend about half their time basking in the heat and light of the bulb provided and this is a very necessary feature of the tank ■

The Black Widow

by Michael M. Clark

THE Black Widow (*Gymnocypris Ternetzi*) is, without doubt, a firm favourite among would-be breeders. These fish are extremely attractive when given suitable surroundings but they should not be overcrowded. The body of the fish is silver with two striking lines of black running vertically across it. When the fish is scared, these are apt to fade, but when the fish is stimulated, the bars deepen in colour. The anal fin, which is very long, the dorsal fin and part of the tail fin, are also black in appearance.

The Black Widow is fairly peaceful but when breeding these fish, it is advisable to spawn just the single pair at one time as they are likely to attack each other in community.

The male fish appears longer in body than the female and, if one disregards the fins, this should be quite noticeable.

When about to spawn, the female may be noticed to be peculiarly bulging.

The Black Widow can easily be bred in a tank measuring about 20 by 8 by 8 inches. Amazon sword plants should be planted in clumps about the tank and the water level should be about 8 inches high. The normal breeding temperature of 80 degrees (F) is sufficient.

Soon after the pair have been introduced into their new tank, they will intensify their colours and the male will seem to spread out his fins and, from time to time, he will nudge the female with his snout. Soon he chases her and, before long, the pair come together side by side. Now the female expels a handful of eggs which are immediately encased in sperms which have been released by her mate. The eggs sink until they land on the leaves of the plants. They are barely visible to the naked eye. The pair, as soon as they have finished spawning, should be removed.

Within twenty-four hours the young hatch. They are not visible as they hang onto the leaves and here they feed on their yolk sacs. About twenty-four hours later they swim separately about the tank and come to rest on the bottom. Now the fry should be fed with *Infusoria* or very fine dried food. Dried egg proves very suitable as a first food.

One month later, perhaps sixty per cent. of the fry will have died but the remainder, which should total around twenty, will grow rapidly and twelve weeks later they will be mature. The Black Widow may reach over two inches in length when full size is attained. ■

Maintaining the heat

by J. Hems

WITH thoughts of probable power cuts uppermost in our minds, it is as well to plan ahead. Actually, few fishes suffer any harm by a drop in the temperature of the water so long as the drop is gradual. But the drop must not be lower than the minimum for most tropicals, which is 65°F (18°C), if the fish are to come through the experience unharmed. So it is a good idea to raise the temperature of a tropical aquarium by two or three degrees (F) above the normal in very cold weather to allow for a drop within the lowest possible limit.

Another thing you can do to protect your fishes against cooling is to lag the aquarium with some insulating material to keep the heat in. There is no need to exclude the light. Thick felt or several thicknesses of brown paper glued to the bottom of a tank will do a lot to conserve heat. The tank, too, can be protected in the same way. Decorated paper or painted cardboard sheets can be stuck on the end lagging to preserve the attractive appearance of a tank.

In cases where a tank is illuminated by electricity, or is backed by a wall, the lagging can extend over the back and two ends, leaving just the front panel of glass exposed. As most protracted power cuts usually take place late at night, or very early in the morning, it is a good idea to cover the aquarium over with an old blanket or large sheets of newspaper last thing at night. This doesn't take a moment to do, and even if there are no power cuts it will do you much good by saving on the electricity normally used. Finally, a sensible thing to do is to buy another heater or two to keep in store against a possible breakdown of your existing heating equipment. ■

Sea fish that spends its entire life in the belly of another animal

by M. Lorant

THERE is a fish that spends its entire life—literally from birth to death—in the belly of another animal. The host is most commonly a large, armless starfish, almost hollow, about two-thirds the size of a standard football. Some varieties of the same type of fish find homes inside large sea-cucumbers, which are bottom-dwelling echinoderms like the starfish.

The sea-bottom vertebrate parasites belong to the family of pearlfishes, abundant in parts of the tropical Pacific. Those found on coral reefs around the Marshall and Marianas Islands have recently been described by Dr. Leonard P. Schultz, Smithsonian Institution curator of fishes. These commensal fishes, like members of several other families of the area, have almost perfectly transparent bodies. Through their skins one can watch their hearts beat and the circulation of blood.

A favourite host is the starfish *Gadita*, which measures about 8 inches in diameter. About half of those brought to the surface by one collector has a pearlfish inside them. As more is learned about each species, Dr. Schultz states, it is probable that each kind of pearlfish will be found to inhabit a certain distinct genus of invertebrate animal. They live chiefly on food ingested by the starfish. Whether they render any service to the host in return for his feeding is unknown. The association of the two types of animals, however, appears to have been evolved through millennia, and the little fish apparently do their echinoderm hosts no harm.

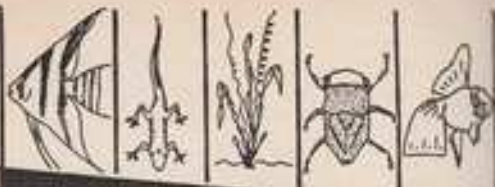
Owing largely to the obscurity of their habitat, much confusion exists in the classification of the fishes. Not only is it difficult to extract them from known hosts, but almost certainly there are several unknown hosts. ■

Visit our Stand No. 135 at the
Schoolboys and Girls Exhibition
at Olympia

Opening 27th December—10th January
Empire Hall 2nd floor

our readers

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



write

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

Scotland Calling All Sassenachs

ENCOURAGED by the tremendous success which the first edition of the Handbook of the Federation of Scottish Aquarist Societies enjoyed, the council have decided to proceed with more ambitious plans for the next edition to be published in January.

While much of the content will remain directly connected with the F.S.A.S., it is intended to expand the section devoted to the activities of Associated Bodies, such as the British Killifish Association, and the Fancy Guppy Association, to include details of the associations which were overlooked in the last issue.

It is also proposed to introduce a section on Programme Aids, giving information on films and slides which are available for hire to Societies.

The Pet Shop Directory will be enlarged to include dealers in England, Wales and Ireland.

Such an undertaking cannot be accomplished without the co-operation of Individual Aquarists, Active Societies and Pet Traders throughout the United Kingdom. To this end a questionnaire was recently sent to societies seeking their co-operation in compiling the necessary information. If your society did not receive a questionnaire, please accept my apologies, as the reason would, no doubt, be beyond my control. If you would care to help, I should be extremely grateful if you will send me details of the following:

1. The name and address of any Pet dealers in your area.
2. The name and details of any zoo or Public Aquaria in your area.
3. The name and source of any film connected with the hobby which you may have seen.
4. The source of any slides available for hire.
5. Details of any Body associated with fishkeeping.

Entries in the Pet Shop Directory will be made entirely free of charge. Pet Traders have merely to send me details of their business name and address to have these included.

Traders who wish to take advertising space may have particulars on request.

Last year's Handbook was printed to a very high professional standard, and was circulated to some six hundred Aquarists in Scotland. Copies were also distributed in England and America and were well received in these countries.

In an effort to increase the circulation of our Handbook and because we feel that the revised edition will be of interest to aquarists outside Scotland, order forms have been sent to Societies. Those Societies who did not receive an order form and who wish to place an order may do so simply by writing to me. The cost will be 2s. 6d. plus 6d. postage, but

remittances should not be included with the order as an invoice will be sent with the order. Society orders for eight copies or more will be sent post free. It is regretted that further orders cannot be placed after publication.

All orders should reach me not later than 15th December.

In conclusion may I express the hope that aquarists throughout the United Kingdom will rally to support this bold venture by sending helpful information and by ordering a copy.

ROBERT M. COOPER,
Hon. Secretary,
Federation of Scottish Aquarist Societies,
76 Canopus Crescent,
Kirkcaldy, Fife.

Gas Embolism—More Criticism

RECENTLY, it was drawn to my attention by a German friend and fellow aquarium keeper, that British aquarists were very conceited and childish. Upon enquiring the reason for his opinion, he drew my attention to a letter by P. F. Capon in the August edition of *The Aquarist*.

Having only glossed over the letter in question, I re-read it, and though I do not profess to know the first thing about gas embolism, I agreed with my friend, that the tone of Mr. Capon's letter leaves a lot to be desired.

Would you please draw to Mr. Capon's attention the fact that a great number of foreign aquarists read our magazine, and letters like this do nothing for the reputation of British aquarists in foreign lands, nor, I should imagine, for Mr. Capon's own reputation among aquarists at home.

I would like to conclude by passing on my German friend's suggestion, namely, that Mr. Capon take the proverbial long walk off Southend's famous pier!

23781000 CPL. LADARROW, B. RMF,
Rheindahlen Garrison
Provost Company,
Royal Military Police,
Rheindahlen,
B.F.P.O. 40.

Fish Food Costs

I WRITE after nearly 50 years experience as an aquarist. We all know there are fish foods which are well worth the price. But in assessing the price one must not overlook the fact that in the case of these foods, a great deal of research goes into getting a really balanced diet that will not affect the health of the fish in any way. One must also take into account the costs of packing in small quantities.

I WONDER whether any of your readers have any... I am sure you will be most grateful for my help...

G. WILLIAMS, 12, Victoria Street, Basingstoke, Hants.

WITH regard to three dimensional backgrounds for... I would like to point out that very few post-war dwellings...

Three D

JOHN E. HOWAT, Lewissham, S.E.13.

YOURS sincerely, I am sure you will be most grateful for my help... I find that I must bring this to your attention...

Correct Classification

JOE GRANTY, Mablethorpe, Cheshire.

THE advice given by Mr. White in the November issue... I am sure you will be most grateful for my help...

AFTER all, the cost of feeding fish on a really reliable food... I am sure you will be most grateful for my help...

Yours faithfully, D. MATTIUM, Dronfield, Sheffield.

THE only safe water to use in these circumstances seems... I would like to point out that very few post-war dwellings...

Copper Pollution

IN A Reader's "Answers to Reader's Queries" he has... I am sure you will be most grateful for my help...

Editor's Note

LOVELIA certainly appears to be correctly applied to the... I am sure you will be most grateful for my help...

MY letter with the word Solihull... I am sure you will be most grateful for my help...

ANOTHER plant which also appears seldom, if at all... I am sure you will be most grateful for my help...

Fair Comment

G. MASON, Baint School, Baint Road, Walsall.

ON reading yet another article by Mr. B. Whitridge... I am sure you will be most grateful for my help...

Cinerarias

by M. D. C. Jones

CINERARIAS are attractive flowering plants. They flower from December to April, bearing large heads of gay, daisy-like flowers in shades of blue, purple, pink, red and white. Some of the blooms are gaily marked with a ring of contrasting colour. The leaves are large and of a medium-green colour. They need a cool, airy, moist atmosphere if they are to bloom to perfection for a long period. They like a well-lighted, draught-free position but do not like strong sunshine. Overwatering can kill these plants and so one should wait until they start to flag before watering.

Although cinerarias are comparatively easy to grow successfully they have one big disadvantage in that greenfly and leaf-miners are often a nuisance and they are almost certain to make an appearance sooner or later. As soon as they are noticed the plants should be removed from the fish-house and sprayed with a suitable insecticide.

If one wants to acquire one or more cinerarias to use as added decoration in the fish-house, one can buy plants from a reputable florist or raise a few plants from seed sown

between April and July. When purchasing a plant look for a healthy sturdy specimen, free from pests and discoloured leaves. If the plant carries plenty of buds these will open during the next few days and provide a long-lasting display of flowers.

If seeds are sown, John Innes seed compost can be used and the seeds should be covered very lightly with a layer of the compost. They will germinate rapidly in a temperature of about 60°F. The plants should be potted on into larger pots containing John Innes potting compost No. 2 as growth develops. They can be potted into their final pots (5 or 6 in.) at the end of the summer. Use well drained pots and pot firmly but not too deeply. Feed the plants with a liquid fertiliser when they are carrying flowers, and remove dead blooms regularly.

Cinerarias can be kept from one year to the next, and indeed I do this if I have an exceptionally fine plant, but normally the best results are obtained by discarding the old plants after they have flowered and replacing them with new ones ■

Limnephilus—caddis fly larva

by Bill Sims

LITTLE bundles of pebbles or sticks, apparently moving under their own volition, are quickly recognised by the aquarist as larvae of the caddis. Altogether there are about 190 kinds of caddis fly in Britain, all of them slightly different; but differences in the larval case are no clue to the species for the case structure is governed more by prevailing conditions and materials than by type. However, there are two main divisions: those with head bent at an angle to the body in the larval state, called cruciform; and those with body and head in a straight line, called casipodeid.

The bent head larvae always have a case to protect the soft abdomen but the straight larvae are mostly free-living, though just a few kinds do have a case. Algae, and portions of plants, either fresh or decayed, are the food of the bent head types, so it will be seen that in aquaria or ponds these are comparatively harmless.

This present caddis fly larva, one of the *Limnephilus* species, belongs to the cruciforms, or bent head group, and always makes a case. It is formed from silky threads which, when extruded as fluid by the larva under water, harden into elastic threads. The particles of grit or stick we see are deliberately placed and stuck on the outside.

In still or quiet water the particles used are generally pieces of plant life, as being lighter to carry. Those that inhabit fast running water, however, use pebbles to give them more anchorage. When the larvae are small only a tiny case is needed. During growth more length is added



to the head end, and this is necessarily wider. Eventually the thin end becomes unused, and as it becomes unwieldy parts of it are bitten off.

The drawing shows one of the *limnephilus* kinds of caddis fly larva without its case. The fleshy tentacles are used to keep its grip on the inside of the case, and are so efficient that the creature cannot easily be pulled out. The line of hairs along its side are gills, with which it extracts oxygen from the water.

To change into an adult the larva must pupate, and it does this inside the now large case. Both ends are sealed up but holes are left for water to flow through. The case is stuck to the bottom of the stream or pond.

After 2 to 3 weeks the newly formed pupal stage breaks out of the case and swims or crawls away. It makes its way to the surface up water plants and there the pupal stage splits open to allow the fully adult caddis fly to emerge. ■

Great Silver Beetle

by F. Wilmott

THIS fine insect has been given its popular name because a large area of its under-surface is closely covered with very short hairs which it uses to entrap a layer of air, and this layer looks like a bright silver hemisphere if it catches the light when the beetle is submerged.

The Great Silver Beetle can attain a length of nearly two inches but it is, unfortunately, by no means common in this country now. The only British beetle which has a greater length is the male Stag Beetle, but even so the Great Silver Beetle (both male and female) wins easily on bulk, and can be said to be the slow, peaceable elephant of British insects.

This beetle moves its legs alternately when it swims instead of working them in unison, and this action combined with its bulk makes it a slower and more awkward-looking swimmer than are some other aquatic beetles. Also it tends to clamber amongst the water plants on which it mainly feeds in preference to swimming.

The clubbed portions of this insect's antennae (which it keeps tucked away under its thorax), the under-surface of its thorax, and also part of its abdomen are thickly covered with short downy hairs. These down-covered areas serve as air passages connecting the antennae with an air space between the wing-cases and the upper surface of the insect's body.

The way in which the Great Silver Beetle "fills-up" with air is most interesting. For firstly it rises to the surface of

the water and pushes the clubbed portion of one antenna through the surface-film. It then moves its wing-cases in a bellows-like movement which causes its whole body to rise and fall in the water as new air is drawn in and "used" air expelled. After repeating these breathing movements several times this remarkable beetle, presumably refreshed descends with an abundant supply of air. ■



Hydrous piceus (male on right)

continued from page 190

Breeding slow-worms in confinement

with a gold dorsal surface divided down the middle by a fine black line.

When born on 28th August, they were about two inches in length. They were extremely agile and during the first week of their lives no less than three of them managed to escape from the breeding cage through a minute, previously undiscovered, space between the glass cover and the metal-work of their cage. Fortunately they fell on to a polished surface which limited their movements to such an extent that they were recaptured before they had travelled any great distance.

At first, feeding the tiny animals presented a problem. To begin with they were kept alive on fruit flies but supplies of these were limited and an alternative diet soon became necessary. The difficulty was resolved by the discovery that a pile of spent mushroom manure, stacked in the garden until such time as it should be needed by the gardener, was simply crawling with minute forms of animal life. A couple of handfuls of this medium placed in the cage every other day, supplied the baby slow-worms with a completely adequate diet and they soon began to increase in size so that by 5th September they averaged three and a half inches in length.

Towards the end of September one of the adult slow-worms was discovered in the act of eating a young one. Only a little of the tail of the victim remained protruding

from the adult's mouth and, in a matter of seconds, even this last trace of the unfortunate animal disappeared. To prevent a repetition of this cannibalism the rest of the babies were hastily caught up and moved into the nursery cage where at the time of writing they continue to flourish.

The young slow-worms are voracious little animals. Not long ago one, no more than four inches long, was found attempting to eat an inch long slug much thicker in diameter than itself. The tiny mouth of the slow-worm was firmly clamped on its prey which it made vigorous attempts to swallow. Finally, however, it seemed to realise that the stout, tough body of the slug presented insurmountable difficulties and it reluctantly gave up the attempt.

Apart from supplying a rich source of live-food for the young slow-worms, the spent mushroom manure provides an excellent covering for the floor of their cage. It is a warm medium and sufficiently loose in texture to enable them to burrow into it without difficulty. Although they are frequently seen moving over the surface during the day, they spend much of their time coiled up beneath its protection.

It seems that slow-worms are not difficult to breed in captivity. Most probably the female introduced in June was already carrying young at the time she was captured but this is unlikely to have been so in the case of the earlier caught female. ■

Aponogeton ulvaceus—

by B. Whiteside

ONE of the most beautiful plants for the tropical aquarium is surely *Aponogeton ulvaceus*. The genus *Aponogeton* contains a number of decorative aquatic plants, including the famed lace plant but even it, I think, fails to equal the beauty of a well grown plant of *A. ulvaceus*.

As plants of this genus produce a swollen tuber and are often sold in this condition without leaves, it is not easy to obtain true plants of *A. ulvaceus*. Plants must be bought from a specialist dealer as some of the smaller firms sell tubers of what they think are *A. ulvaceus* but which may turn out to be another species or a hybrid plant of two different species. Plants of the true species may cost up to 10s. 0d. each and are more suited to the larger aquarium but, given suitable conditions for growth, it is not uncommon for the plant to produce flowers which may be pollinated with a small paint brush when fertile seeds may result. Flower heads of *Aponogeton* species may have single or double flower spikes, the latter being produced on the African species.

The plant has pale green, almost transparent leaves with the petiole about 8in. long. The lamina is twisted and wavy and can reach a length of over 12in., by about 2½in. broad. New leaves are produced in ample succession and the plant can carry many leaves at one time. Each flower spike is about 2½in. long and yellowish white in colour, being made up of numerous single flowers. My plant has produced a succession of four flower spikes inside about eight weeks. Each was removed to prevent the plant from wasting its food reserves on seed production but it still continues to produce more flowers. No attempt

has been made to pollinate the flowers or to produce seeds, although it is said to be quite easily done.

Plants need a period of rest each season and when growth appears to die down, the tuber should be removed to, say, a jar of cooler water for about five or six weeks after which it can be returned to the warmer tropical aquarium and the tuber planted about ½in. to ¾in. beneath the surface of the gravel.

Conditions under which the plant has flourished and flowered are as follows, for a 30in. x 12in. x 15in. tank—temperature 78°F.; pH 7.4; DH 8°; gravel CaCO₃ free; (no sub-gravel filter or food present); lighting from tungsten bulbs totalling 65 watts for nine hours per day, with about three hours of natural sunlight. The tank was quite well populated with fish whose diet was mainly of dried foods.

If you have a fairly large aquarium with conditions something similar to the above, and are willing to spend 10s. 0d. on a plant, then I can recommend *Aponogeton ulvaceus*. Not only is it a long lasting and beautiful plant, but it has the added attraction of being as easily brought into flowering condition as any other tropical plant I know. The prospect of hand pollinating the flowers, producing fertile seeds, and perhaps raising some new plants from these, gives yet a further reason for trying this beautiful if not too easily obtained plant.

I have just seen an advertisement by a dealer offering three species of *Aponogeton*, including *A. ulvaceus*, at 2s. 0d. each. If the latter is the true species it would certainly be a good buy. ■

Fish food review

"Miracle Freeze-Dried Tubifex Worms", distributed by T.F.H. Publications (London) Ltd., Price 5/6d. per 5 gram container.

NEW fish foods are not uncommon on the market at the present time, but this recent introduction is certainly original from a visual aspect. The food consists of small blocks of what look to me like pieces of fibre. They can be torn or cut into smaller pieces depending upon the number of fish to be fed.

A small block of the food is immersed in the aquarium water and pressed against the glass side or front of the tank to which it will stick. The dried blocks soon soften in the water and when noticed by the fish are soon the centre of interest. Small pieces of the freeze-dried worms are removed and eaten by the fish with relish. The piece of food may become unstuck from the glass and usually floats to the water surface where it is soon found by food-hunting fishes. The block of food will usually remain intact unless attacked by larger fish such as angels. After

such vicious attacks the food is inclined to disintegrate into separate worm segments, but these are quickly attacked by the smaller fishes.

I have found the food to be useful if small pieces are cut off and allowed to float on the water surface in tanks where smaller fishes such as neons, cardinals, pencil fish or young livebearers are kept. Such fish are unable to deal with the larger live tubifex worms and seem better able to manage the smaller segments released by this freeze-dried food. Larger fish seemed to be keener on attacking larger blocks of the food.

Although rather expensive at 5s. 6d. per container, this form of tubifex is certainly much more handy than the more conventional live form although one would assume that its value as a food would be less than live tubifex. As an addition to the normal range of dried foods 'Miracle Freeze-Dry Tubifex', which is made in the Republic of China, provides an apparently appreciated diet change for aquarium fishes. ■

Freshwater to saltwater conversion

by Alchemist

OVER the past year or so marine fishkeeping has become an increasingly popular branch of the aquatic hobby and, with suppliers now catering for the new demands and Societies formed to cater for the marine aquarist, it looks as if it is here to stay. However, many people do not realise that there are a number of so called "ordinary" tropical fish that can easily be adapted to a marine environment and quite a large proportion of these species, in fact, thrive better in a marine tank than in fresh or brackish water conditions, growing at a faster rate and having more intense coloration.

Among the more common of the adaptable species we find the following: Mollisnias (*M. splendens*, *caucana*, *lappina*, *califera*), Tilapia (*T. mossambica*, *T. zilli*, *T. guineensis*), Chromides (*Chromis maculata*, *E. auratus*), The Fundulids (*Fundulus chrysotus*, *F. heteroclitus*), and the Rainbow fishes (*Telmatherina*, *Bedeia*, *Melanotaenia*). Among the less common but easily adaptable: The Scatophaginidae (Scats), the Tetraodontidae and the Monodactylidae (Puffers and Malayan Angelfish), Therapon, Archer fish, Glass fish and the Siamese Tiger Fishes. If you are going to attempt to convert any of these species to a marine environment it must be done gradually, and the most successful method I have found is as follows.

The tank in which you are going to convert your fish should contain some water from its existing tank (making sure the tank is only half-full) a thin layer of gravel and a

filter or aerator (I prefer the use of filters with built in airstones for this purpose). For the first couple of days you let the fish get accustomed to its new surroundings. During this period only feed lightly, preferably with live *Daphnia* or *embryos*. After this period you raise the water level in the tank one inch by the addition of seawater of a density of 1.025. You repeat this process once every two days until your tank is full. You then drain two thirds of the water out and throw it away. Then add an extra two inches of seawater to the tank daily until it is once again full. The water in your tank should now have a density of between 1.020 and 1.024. The fish can then steadily be transferred to the marine aquarium as long as this is done over a period of a couple of hours or so.

The above mentioned process ensures a gradual change which does not affect adversely the metabolism of the fish. The one exception to this process is the common eel (*Anguilla anguilla*) which defies all and sundry by surviving even when transferred direct from fresh to salt water or vice versa. This process can also be reversed for certain marine fishes although the lengths of time would have to be considerably increased. The common benny or shanny, and the shore goby, both native to our own shore, have been successfully acclimatised to water of density 1.007, and certain marine damselfish have also been acclimatised to comparatively fresh water of density 1.010.

Why not try for yourself? ■

continued from page 181

Hobbyist and trader relations

purchase. The time-honoured phrase, "The customer is always right", unfortunately is sometimes disregarded. This last comment is as I hasten to add, in the minority of cases.

However, with reference to the last remark, let me quote an example. In an effort to enable the majority of my own club to visit one of the largest retailers who consistently advertises their large variety, etc., we ran a coach trip. This was on a Sunday but arranged to conform with the advertised opening hours, using the M.1 and M.45 to ensure prompt arrival. The idea being that club members would go in in small parties of about six at a time and when they had done another party to circulate and so on giving everyone a chance to see and buy what ever they fancied that perhaps is unavailable in our own area. The proposition happened to come out to the front and saw the coach pull up. He at once became very abusive before our intentions could be made known. After some quite unnecessary ugly words, our members were permitted to start circulating through the display house in groups. They found the selection very poor. The finishing touch was when some members saw species they wished to purchase and pointed them out to the staff they were told that they couldn't buy those particular fish but that similar

ones would be brought out of the fish houses out the back. This quite naturally the majority did not agree to and the club left after an extremely disappointing and frustrating visit with hardly a purchase, if any, being made.

The coach party was about forty-five strong plus one or two children. Allowing for this and a few wives there were about forty people prepared to spend a pound upwards on fish. One of two would have spent considerably more as they had been saving for the trip in great expectation. I should have thought that forty pounds worth of business plus would be considered more than worthwhile in any retail trade of this nature.

In spite of all these arguments our hobby is steadily gaining popularity. Thus, it seems, that the time is ripe for serious reflection. Isn't it time we buried the hatchet all round and tried again? If retailers find any particular club to behave badly then bar that club from future visits. Don't penalise clubs as a whole. The clubs up, down and across the country surely form the hard core of interest and ensure the popularity of the hobby. All the various clubs should also play their part in ensuring that these outings are not treated as a look-and-see-only trip but should plan to buy a few specimens per head with the proviso that the variety, quality and cleanliness is there. ■

The Bristol shubunkin

by A. Boarder

THIS fish is one of the most handsome of the fancy goldfish and can be kept in an outdoor pool as well as in an indoor tank. Its striking colours are so different to the usual goldfish that the fish is very attractive at all times. Although the shubunkin is a very popular fish it is surprising how few really good ones are seen on the show benches today. Many fishes exhibited in the class are often quite void of the necessary colours being a dingy brownish hue and not showing either the blue or even red which is required. At two shows this season I have seen a few very good ones and at the Haringey show at Tottenham and at the Brent show at Willesden I saw at least a few fishes which were very pleasing to see and which appeared to be very close indeed to the standards.

The fish I placed first at Tottenham was a beautiful shubunkin with the stream-lined body, well shaped caudal fin and a brightly coloured body. The ground colour was a fine bright blue and red, brown and violet in lesser degree. The whole fish was splashed with black. This fish showed no scales at all and also had soft gill plates. It is so rare these days to find a really good coloured shubunkin which has not at least a few visible scales and hard gill plates. Many otherwise excellent fishes are down-pointed because of showing a few hard scales and hard gill plates. At the Willesden show I saw another fish which was also a splendid specimen and if it had not shown a very small nick in the lower lobe of the caudal fin, I would have put it forward as the best fish in the show.

It is rather difficult to carry the image of a particular fish in one's memory for some time, especially if many other fishes have been examined between, but I feel almost certain that it was the same fish which I admired and awarded first prize at both these shows. In any case I feel certain that both fishes came from the same stable, even if they were not identical. The shubunkin should have a slimmer body than the common goldfish and the upper and lower contours should be equally shaped. This means that the fish should not be humpy backed or snouty, a common fault which is often seen. There should be no visible scales but it is a fact that many of the better coloured ones will show a few such scales and are usually down-pointed for this reason. The gill plates should also be soft, that is not showing the hard, scaled appearance, but be almost transparent. Some fishes are seen with one soft and one hard plate whilst others can have part of the gill plate soft. I find that many of the shubunkins on show recently have a fairly well shaped body but fall down badly on colour. I consider that colour is the most important feature, as without the desired ones the fish is not shubunkin. I feel that colour should receive more points than are allotted in the Federation standards and a return to the old ones



Two fine examples of Bristol shubunkins

would be an advantage.

Under the previous standards of 1947, the points for colour were 35, but under the newer standards only 20 are allotted. Also, in the earlier ones 5 points could be given for soft gill plates whereas the new ones allow nothing for this feature, and one can only reduce points from those for the body. The caudal fin of the Bristol is another outstanding feature and under the old standards received up to 20 points and the other fins another 20 points. The newer ones also allow points for condition and deportment. I consider that points for condition only should be allowed for all fancy goldfish as I have yet to see a fish with a good deportment which was out of condition.

I have judged many classes of shubunkins and the pointing system I would like to see introduced for these fishes would be as follows—

Body: 20 Colour: 35 Caudal fin: 15 Dorsal: 5
Other fins: 10 Soft Gill Plates: 5 Condition: 10
Points can be deducted for visible scales.

With this pointing it would not be difficult for any judge to mark up a fish and the better coloured fish would be placed above the poorer coloured one. The earlier description for colour was—Blue ground splashed with black; interspersed with violet, red, brown and yellow. The later standards gave—A bright combination of blue;

Continued on page 207

Change of fashion

by D. E. Sale

TEN years ago I regretfully sold up my collection of fish and left home in search of education. Early this year I re-entered the hobby not really knowing what to expect after so long a break. Change is often so gradual as to be imperceptible, but after ten years I imagined that the hobby would have altered in many ways. I have noticed changes in almost every aspect of fish-keeping. Firstly, a consideration of the varieties of fish commonly available. Many fish which, ten years ago were considered true specialists' fish, are now not only readily available at reasonable prices, but are easily and frequently bred without too much trouble. I am thinking particularly here of the toothcarps. There is a strain of *Aphyonion calliarum* in this West Midlands town which not only thrives in the rather hard water of the district, but which spawns at every opportunity without undue preparation. I have had these fish, and *Rivulus Males*, spawn regularly although I have had little time to condition them, and have certainly not given them the peaty water the text-books consider essential. It appears that fish, especially tank-bred fish, adapt themselves in time to water conditions generally considered unfavourable to the species. I have in one tank *Necos* and *Corydoras*, both in excellent condition, although their text-book requirements are very different.

With the growing popularity of tooth-carps some of the other species have become far less common. I have tried, with no success, to obtain Mosquito fish, Blue Limas, and Merry Widows, all easily-bred fish which were once second only to guppies in numbers in this area. Also, many of the Characins, especially Beacons and Harlequins, have become quite scarce. (I am not speaking here of the retail shops but of the local enthusiasts and breeders who ten years ago always had a tank of each of these species.)

There appears also to be a growing interest in the bottom-dwellers. Whereas in a shed of twenty tanks there would, ten years ago, have been perhaps half-a-dozen corydoras species, there are now commonly twenty different species.

Live-bearers, especially guppies and platies, have in ten years altered beyond belief. Obviously some careful breeding has been going on. I remember in the past that the birth of a brood of platies was a matter of great interest. A red platy was likely to produce a motley collection of offspring: red, yellow, wagtail, spotted and unclassified. My present platies, obtained from several sources, have so far bred quite true with the exception of a blue platy whose young give clear evidence of a juvenile indiscretion. Swordtails, too, appear to be far more reliable than they used to be. Nearly all the female guppies in the district have coloured tails; ten years ago this was a great rarity. *Mollies* appear to be following the same pattern although I have been told that their finnage is not always handed on

so reliably. Apart from these fish, there appears to be little interest in livebearers at the moment.

It seems that today, to be assured of popularity, a fish must be, as well as attractive in appearance and disposition, either somewhat difficult to breed, so as to present something of a challenge, or so eager to reproduce its kind that line-breeding to perpetuate a certain feature is easily achieved. The reason for this is almost certainly the decrease of the single aquarium kept for decorative purposes only, and the tremendous increase in the numbers of breeders who, quite naturally, like to have something to boast about. ■

Continued from page 200

The Bristol shubunkin

by A. Boarder

violet, red, yellow and brown. Not a lot of difference really except for the blue ground.

When breeding shubunkins it is most important for the breeder to cull the youngsters at an early age. Fortunately for him these fishes change colour at a much earlier age than do scaled fishes. In the latter case one may have to wait for at least two years before a fish obtained its real colour, but the shubunkins show at an early age this colouring and so can be sorted out in good time. This enables the breeder to concentrate on a few of the best.

The body shape will be apparent at about three months of age and the colour should also be showing up well by then. Some fishes become very pale and transparent looking at an early age. It is very unlikely that these will ever make good coloured specimens. Once they get silver coloured they do not become darker but the fishes which are likely to make the best coloured ones are those which look quite dark when others of the same brood are light in colour. A good shubunkin should show the blue etc., when a year old and be at its best by two. If a fish has not taken on the required colours by the age of two it is unlikely that it will ever do so.

The shapes of the caudal and dorsal fins will show up well when the fish is about six months old providing it has been well cared for. The caudal should be fairly large with broad lobes, rounded at the tips. The dorsal should be held erect and fairly well developed. The minimum length for exhibition under the later standards is three inches body length excluding the tail. A large good fish should beat a small good one but a bad large one should never beat a small good one. ■

Book review

"Breeding Aquarium Fish," by Dr. Wolfgang Wickler, translated and edited by Dr. Denys Tucker and published by Studio Vista Limited, at 10s. 6d.

THIS paperback book, 'Breeding Aquarium Fish,' is sub-titled 'An introduction to the biology of their reproduction.' The author is a scientist who is a specialist in fish behaviour and it is with this which the book largely deals. It is not a book which basically sets out to tell you how to breed your favourite fish, whichever it might be, although the book does contain several pages devoted to what have been found to be conditions under which various kinds of fish have been bred. The work rather seems to hope to encourage the aquarist to think about his problems of fish breeding, and to solve them with a scientific approach i.e. not so much the 'how' of fish breeding but rather the 'why' and 'what'. With this new aim in view the author presents his material, little of which I have before seen in print.

As the book was originally written for the continental reader, many of the details are given in the decimal scales e.g. lengths in centimetres, volumes in litres, and temperatures in degrees Centigrade. Fish are often called by their zoological names and one would need to have a reference book and conversion tables at hand to convert scales and names from the unknown to the known. I am not here decrying the work of the translator who has obviously taken a lot of trouble to make clear many of the difficulties the average aquarist would tend to encounter throughout the book.

The book has 111 pages—divided into 16 sections, a four part appendix, a bibliography and an index. Four photographs and nineteen text figures supplement the writing, and the cover of the book has a colour photograph of a pair of Siamese Fighting Fish mating.

The book's 16 sections deal with a variety of topics. Section 2 deals with the meaning of aquatic plants to fishes and has some interesting aspects on the aeration of aquaria, as well as a number of reasons for having plants in aquaria. A discussion on breeding tanks questions some of the standard techniques, in section 3. A footnote to section 4, by the translator of the book, Dr. Tucker, on water conditions as regards pH and hardness, is very useful. His classification of named water hardness levels, compared with the °DH scale, should be very useful. No other books on aquatic topics which I have read, (although I may have missed the appropriate ones) give a standardized rating of °DH scales with named hardness levels of water. Perhaps if all aquarists used this classification we would have a more accurate idea of what was meant by such phrases as moderately soft, hard, or moderately hard etc. waters.

Another part of the book deals with selection of fish in the aquarium. Here the breeding of naturally occurring mutants is discussed. Included in the next section is the emphasis which the author places on a scientific approach to the evaluation of results obtained in successfully breeding

certain fish. He emphasises the effect of the mood of the fishes on their readiness to breed, as well as external stimuli. The following part of the book deals with, amongst other items, experiments carried out on the breeding behaviour of sticklebacks, using dummy models to induce breeding behaviour.

Section 10 deals with lighting of aquaria and light rhythms. It includes details of the effects on the swimming angle of fishes, due to their aquarium being lighted from the sides, also of the effect of light rhythms as a spawning incentive. The following section covers seasonal changes including day length and temperatures as factors in inducing breeding condition.

Fighting habits of fishes is fully dealt with in the 13th section of the book, and includes details of spawning territories chosen by specific fish. The next part of this paperback is devoted to the courtship of fishes, and in some cases, to the care of their young. Section 15 is about the cross breeding of fish of different species and the desirability or undesirability of such crosses, and contains an interesting account of a new species of Molly which produces only female young. In the last section of the book the author encourages aquarists to study their fish and to discover all that they can about them.

In conclusion I would suggest that this is not a hand book on how to breed fish; but to those interested in the behaviour of fish as regards their breeding, it can be recommended. It presents the findings of scientific studies of fish and such material would probably be of interest to the established aquarist who would like to learn as much as he could about his aquarium fishes ■

Oyster-dredging

by R. D Maynard

THE "O" 's are in this work!

To the uninitiated, "O" might mean oysters, but to those in the know, it means something quite different! The Colne Fishery Company is a unique institution. The above phrase simply means that members whose surnames begin with "O" have their turn to do a week's oyster-dredging. All members are sons, sons-in-law, or bear some other relationship to all other members, so it is really a family Company!

The dredging itself is a very interesting operation and lasts from September until the end of April. It is done from smacks which cruise backwards and forwards along the Pyefleet Channel which is the part of the River Colne most noted for the quality of its oysters. The dredge is in the form of a steel mesh enclosed in a triangular framework of metal and is simply towed behind the smacks attached to a rope. Small oysters, called brood are put aside to be transferred later to Pyefleet for fattening. Later, these will be moved once again to the pits, awaiting sale. These are the famous "natives".

The oyster's chief enemy is the starfish which will prise open the oyster's shell, and eat the occupant! ■



from AQUARISTS' SOCIETIES

B.A.F. Report continued from page 184

The results were as follows: Best Fish of the Show (J. Smith (Blackpool) Dwarf Gourami); Best Tropical Fish (J. Smith (Blackpool)); Best Coldwater Fish (H. Pritchard (Oswestry)); Best Other than Best Fish in Show (Tropical Egg-layers); 1, K. Parks (Mosseside); Tropical Livestock: 1, J. H. Smith (Bradford); Goldfish: 1, H. Pritchard (Oswestry); Best Society Furnished Aquarist (Tropics): 1, Barry 824 pts.; 2, Blackpool 801 pts.; 3, Tyneside 77 pts. (Goldwater); 1, North Warwickshire 73 pts.; 2, Tyneside 70 pts.; 3, Blackpool 72 pts.; Best Individual Furnished Aquarist (Tropics): 1, J. Taylor (Blackpool) 844 pts.; 2, K. Prescott (Belle Vue) 784 pts.; 3, D. Carr (Bradford) 76 pts.; Best Individual Furnished Aquarist (Goldwater): 1, J. H. Hood (Tyneside) 79 pts.; 2, L. W. Malt, (North Warwickshire) 73 pts.; 3, E. T. Davison (Isle of Wight) 72 pts.; Best Aquarist Furnished Aquarist: 1, Mrs. D. M. Matthews (Northern Goldfish) 85 pts.; 2, H. Hapgood (Workop) 78 pts.; 3, Mrs. M. Knowles (Sheffield) 77 pts.; "Novelty Aquarist": 1, Misses. Eastman and Lister (Belle Vue) 83 pts.; 2, Mrs. M. Knowles (Sheffield) 77 pts.; 3, Mrs. K. Cassidy (Dewsbury) 73 pts.; Common Goldfish and Common: 1, W. H. Ramsden (Northern Goldfish) 80 pts.; 2, N. Chadman (Northern Goldfish) 83 pts.; Miss C. Moore (Workop) 78 pts.; Stripedfish (British and London): 1, R. M. Knowles (Northern Goldfish) 82 pts.; W. H. South (Bradford) 81 pts.; 3, B. M. Roberts (Northern Goldfish) 80 pts.; Moors: 1, A. Phillips (East Lane) 82 pts.; 2, A. Phillips (East Lane) 83 pts.; Volleys: 1, W. H. Ramsden (Northern Goldfish) 72 pts.; 2, W. H. South (Bradford) 65 pts.; Exotic Goldfish, Bantais, Orandas, Lionheads and any "new" variety: 1, A. Phillips (East Lane) 80 pts.; 2, A. Phillips (East Lane) 87 pts.; 3, H. Pritchard (Oswestry) 84 pts.; Any species of Coldwater Fish (other than trout) shown: 1, H. Pritchard (Oswestry) 81 pts.; 2, W. H. Ramsden (Northern Goldfish) 84 pts.; 3, E. T. Davison (Isle of Wight) 82 pts.; Guppies: 1, B. Woodman (Harwood) 79 pts.; 2, F. Clarke (Garforth) 75 pts.; 3, H. W. Hughes (T.A.B.) 74 pts.; Livebearers A.O.V. (general): 1, J. H. Smith (Bradford) 76 pts.; 2, M. Dwyer (Workop) 72 pts.; 3, Scott Morgan (Bournemouth) 71 pts.; Livebearers A.O.V. (Single fish): 1, J. H. Smith (Bradford) 80 pts.; 2, Scott Morgan (Bournemouth) 78 pts.; 3, F. Turner (Clapham) 77 pts.; Angels: 1, F. Easton (Blackpool) 75 pts.; 2, J. Alton (T.A.B.) 74 pts.; 3, Mrs. K. Cassidy (Dewsbury) 73 pts.; Dwarf Cichlids (pairs): 1, J. and H. Derris (Workop) 81 pts.; 2, A. Buckley (Illey) 78 pts.; 3, A. Robinson (Stratford) 77 pts.; Dwarf Cichlids (Single fish): 1, R. Bootham (Bradford) 81 pts.; 2, J. and H. Derris (Workop) 80 pts.; 3, W. Bradford (Sheffield) 78 pts.; Cichlids A.O.V.: 1, I. G. Hunt (Huddersfield) 84 pts.; 2, F. Mulla (Mosseside) 83 pts.; 3, A. Wain (Bradford) 81 pts.; Dogfish: 1, T. Smith (Tadworth) 82 pts.; 2, T. Smith (Tadworth) 73 pts.; 3, A. Harrow (Sunderland) 73 pts.; Gouramis and Paradise: 1, R. Walker (Sheffield) 78 pts.; 2, F. Mulla (Mosseside) 75 pts.; 3, W. Puckin (T.A.B.) 74 pts.; Gouramis A.V. and Paradise (single fish): 1, J. Smith (Blackpool) 82 pts.; 2, G. Wigglesworth (Tadworth) 78 pts.; 3, Miss C. Johnson (Workop) 73 pts.; Racco (pairs): 1, K. Parks (Mosseside) 84 pts.; 2, J. and H. Derris (Workop) 82 pts.; 3, A. Park (Bradford) 80 pts.; Bats (Single fish): 1, R. Wain (Bradford) 80 pts.; 2, A. Park (Bradford) 79 pts.; 3, K. Parks (Mosseside) 78 pts.; Chameleons: 1, C. Holdsworth (Bradford) 85 pts.; 2, J. A. Robinson (Mosseside) 83 pts.; 3, R. Minter (Mosseside) 82 pts.; Carps and Minnows: 1, R. Hughes (Belle Vue) 80 pts.; 2, M. Piddler (Belle Vue) 84 pts.; 3, R. Fisher (Sheffield) 81 pts.; Catfishes: 1, W. South (T.A.B.) 76 pts.; 2, C. Holdsworth (Bradford) 75 pts.; 3, D. Bates (Clapham)

86 pts.; Egg-layer Tooth Carp (pairs): 1, W. Puckin (T.A.B.) 75 pts.; 2, L. Greenall (Tadworth) 71 pts.; 3, M. Piddler (Belle Vue) 68 pts.; Egg-layer Tooth Carp (Single fish): 1, C. Compton (Bradford) 74 pts.; 2, D. Croxon (Sheffield) 73 pts.; 3, W. Puckin (T.A.B.) 72 pts.; Loach: K. Parks (Mosseside) 79 pts.; 2, W. Taylor (Oswestry) 78 pts.; 3, C. Holdsworth (Bradford) 75 pts.; A.V. other than class above: 1, R. Adams (Sunderland) 89 pts.; 2, L. McCourt (Gosport) 85 pts.; 3, A. Harper (Mosseside) 84 pts.; Breeders (Egg-layers): 1, L. McCourt (Gosport) 80 pts.; 2, J. Smith (Blackpool) 78 pts.; 3, S. Darnshaw (Clapham) 75 pts.; Breeders (Livebearers): 1, J. Turner (Clapham) 85 pts.; 2, J. and H. Derris (Workop) 83 pts.; 3, M. Cook (Stratford) 82 pts.; Breeders (Goldwater): 1, N. E. Farrell (Northern Goldfish) 83 pts.; 2, W. H. Ramsden (Northern Goldfish) 78 pts.; 3, N. E. Farrell (Northern Goldfish) 76 pts.; Plaques: 1, R. Wignall (Bradford) 83 pts.; 2, U. Kates (Bradford) 78 pts.; 3, A. Robinson (Stratford) 70 pts.; Best Marine Furnished Aquarist: 1, J. Egan (Marine Study Aquarist Society) 71 pts.; 2, A. V. Partington (Marine Study Aquarist Society) 64 pts.; 3, A. Harper (Mosseside) 58 pts.; Society whose members won the most points (Northern Goldfish, Individual Exhibitors gaining most awards): J. and H. Derris (Workop); Best Pair Swordsails: J. and H. Derris (Workop); Russ Shield: Lonsdale; Special Stand: Doves, Sunderland.

THE Reigate and Redhill A.S. has been "getting together" with other Aquarist Clubs at their October meetings. At the first, an hour-long bridge event and table show was held jointly with Kingston and Mid-Sussex Societies. The panel included Mr. K. D. Fowkes, who is president of Reigate and Redhill. The first prize-winners were Mr. Roy Bign (Kingston) for danio, redstart and barbs, and Mr. George Bann (Reigate) for guppies. On 17th October a party from Portsmouth A.S. visited Reigate. Though somewhat delayed in arrival due to traffic congestion at home, the visitors stayed until nearly midnight, and a slide show and talk was staged by Portsmouth, with a raffia and an auction of fish and plants supplied by both societies.

A table show was also held with each club bringing 12 tropical and 12 coldwater fish, respectively. The show was judged by Messrs. C. Brown and R. Isaac, and resulted in a narrow win for the hosts in both sections.

THE results of the October show of the Gosport and District A.S. were as follows: Livebearers: 1, Mr. Robinson (current entry); 2, Mr. Clough (guppy); Leptocheilichthys: 1, Mr. Black (dwarf gourami); 2, Master Eves (dwarf gourami); A.V. Carp: 1, Master Parnon (Barbus fasciatus); 2, Master Eves (T.T. goldfish). Recently, three new officials have been elected and chosen: Chairman: Mr. J. W. Taylor, 9 Herbert Road, Gosport; show secretary: Mr. K. Clough, 18 Newport Road, Gosport; and E.B.A.S. delegate: Mr. Seaton, 64 Beachamp Avenue, Bridgwater. Thanks are also due to Messrs. Wingers of Wincoburn for a generous gift of fishes including a shoal of glowlight tetras and a pair of Neobolus unilineatus, which have greatly enhanced the scene in the club community tank.

THE three Newcastle-upon-Tyne Aquarist Societies combined, held an Open Challenge for Show early in October when the **Newcastle Guppy and Livebearer Society** was the host club. This proved to be a very successful event and there was a total of 106 entries. There were 11 classes and classes and award cards for the first four places, and in addition a massed medal for the best in show.

Mr. Alan Beckett of Sunderland presented the awards and the judges were Messrs. D. Pomeroy, W. Carrington, R. Hay and J. Williamson. The following were the results: A.O.V. Livebearer: 1 and 2, R. Skyles; 3, J. Robinson; 4, J. Allen; A.V. Live: 1, A. Hodgson; 2, G. Austin; 3, F. Pattinson; 4, J. Chamberlain; A.V. Cichlid: 1, 2 and 3, J. Pattinson; 4, B. Cowling; A.V. Guppy: 1, C. Bridge; 2, E. McLachlan; 3, D. Rennie; 4, F. Pattinson; Ras. or Elm.: 1, F. Carr (also best in show); 2, J. Robinson; 3 and 4, J. Edgar; Characins: 1, D. Chalmers; 2, J. W. Hall; 3, J. Morrison; 4, J. Almond. There was no entry in the A.O.V. Egg-layer section, and this plaque was awarded second best in show to C. Bridge (Cichlid).

OWING to a misunderstanding in class Hall A.S. did not have a full run-out of members at the last league match of the present season, and suffered quite a beating at Thorne. They are, however, the league winners this year and Mrs. M. Lee won the trophy in the Hall Society for most points gained in league matches. The results were as follows: Barbos, Danios and Minnows: 1, Mr. A. Powell (Thorne); 2, Mr. L. Gray (Thorne); 3, Mr. H. Green (Thorne); Livebearers: 1, Mr. P. Machin (Thorne); 2, Mr. H. Green (Thorne); 3, Mr. H. Conlow (Thorne); Cichlids: 1, Mr. S. Cable (Hall); 2, Mr. D. Machin (Thorne); 3, Mr. D. Walls (Thorne); Breeders/Egg-layers: 1, Mrs. E. Chapman (Hall); 2, Mr. S. Cable (Hall); 3, Mrs. M. Lee (Hall); Acaridaria: 1, Mr. B. Skyles (Thorne); 2, Mr. L. Gray (Thorne); 3, Mr. G. Garnett (Thorne); Carps: 1 and 2, Mr. D. Walls (Thorne); 3, Master D. Machin (Thorne); Gars and Loaches: 1, Master B. Duffield (Thorne); 2, Mr. L. Gray (Thorne); 3, Mr. V. Brown (Thorne); Fishes: 1, Mr. H. Conlow (Thorne); Barbs: 1 and 2, Master B. Duffield (Thorne); 3, Mr. T. Toak (Hall); Characins: 1, Mr. D. Walls (Thorne); 2, Mrs. E. Chapman (Hall); 3, Mr. D. Machin (Thorne); A.O.V.: 1, Mr. D. Machin (Thorne); 2, Mr. H. Conlow (Thorne); 3, Master B. Duffield (Thorne); Breeders' Livebearers: 1, Mr. T. Dickens (Thorne); 2, Mr. D. Machin (Thorne); 3, Mr. J. Gray (Thorne); Best fish: Malawi angel owned by Mr. D. Machin.

AT the October meeting of the Aireborough and District A.S. an Intra-Club show was held to which the following societies were invited: Skipton, White Rose, Huddersfield, Leeds, Minnow, Wakefield and Garforth. The trophy for the society gaining the most points was retained by Aireborough. The following were the individual winners in the classes: Livebearers: 1, Mr. White (Skipton); 2, Mr. Clarke (Garforth); 3, Mr. Walker (Aireborough); Barbs: 1, Mr. Longbottom (Mansfield); 2, Master Dickman (Aireborough); 3, Mrs. Helm (Aireborough); Characins: 1, Mr. Boothroyd (Leeds); 2, Mr. Winger (Mansfield); 3, Mr. Wiggins (White Rose); Acaridaria: 1, Mr. Grace (Wakefield); 2, Mr. Wiggins (White Rose); 3, Mrs. Helm (Aireborough); Cichlids: 1 and 2, Mrs. Bess (Huddersfield); 3, Mr. Walker (Aireborough); A.O.V.: 1, Mr. Boothroyd (Leeds); 2, Mrs. Dickman (Aireborough); 3, Mr. Dwyer (Aireborough); Catfish and Loach: 1, Mr. Wiggins (White Rose); 2, Mrs. Helm (Aireborough); 3, Mr. Lister (Aireborough); A.V. Pairs: 1, Mr. White (Skipton); 2, Mr. Rodman (White Rose); 3, Mr. Grace (Wakefield); A.V. Breeders: 1, Mr. White (Skipton); 2, Mrs. McCourt (White Rose); 3, Mr. Frew (Aireborough). Best fish in show, Mrs. Bess (Huddersfield). The corresponding membership of the Aireborough society forms a very strong part of the membership, and it is hoped that all of the present and also many more new members will renew their membership for the coming year. Details can be had on request to Mr. R. Haspoun, The Heathlands, Scotland Lane, Huddersfield, near Leeds, Yorks.

THE guest speaker at the October meeting of the Newport A.S. was Mr. Richard Wigg, chairman of the South Wales Tropical Fish Study Group, who gave a résumé of the fourth annual open show of the society held a fortnight earlier.

The society is now experiencing a great surge in membership, the total now being around 50, which augurs well for future success. Several catch outings are envisaged for the near future, including a trip across the new Severn Bridge to Bristol to visit aquatic premises, and a return visit to Bristol Zoo to undertake a "behind the scenes" tour of the aquarium. Any interested persons (not necessarily members of a society) are invited to contact the show secretary, Mr. M. J. Parry, 45 Western Drive, Gloskell, Cardiff (telephone: Home—65573; Work—20441, extension 35).

IN the "Home Furnished Aquaria" competition run by the Hounslow and District A.S., the winner was Mr. A. Hastings, 76 points; second being Mr. K. Mason, 53 points, and third, Mr. J. Thomas, 34 points. In the junior section the winner was Master Benson with 23 points, and a tie for second place between Master Lind and Master C. Walker, both with 20 points. Third was Master Clive Walker with 49 points.

THE Bradford and District A.S. held its second open show of the year in October and the results were as follows:—Livebearers: 1, K. Staples (Swillington); 2, A. B. White (Keighley); 3, Mr. Brooker (South Leeds). Barbies: 1 and 2, A. Firth (Bradford); 3, Mr. Glover (Swillington). Characins: 1, Mr. Wilkinson (Halifax); 2, Miss Wilkinson (Halifax); 3, D. Cook (Glasgow). Anabantids: 1, B. Sheppard (Bradford); 2, L. Haley (Bradford); 3, G. Clarke (Halifax). Cichlids: 1 and 2, D. Carr (Bradford); 3, L. Haley (Bradford). Cichlids: 1, Mrs. A. Firth (Bradford); 2, R. J. Greenhouse (Nottingham); 3, P. Barrett (Bradford). Catfish and Loach: 1 and 3, C. Holdsworth (Bradford); 2, K. Staples (Swillington). Toothcarps: 1, G. Holdsworth (Bradford); 2, R. J. Greenhouse (Nottingham); 3, W. Timmins (Swillington). A.O.V.: 1, Master A. Hadley (Bradford); 2, B. Yates (Independent). Breeders (Livebearers): 1, A. B. White (Keighley); 2, B. Wilkinson (Halifax); 3, B. Sheppard (Bradford). Breeders (Guppies): 1, B. Sheppard (Bradford); 2, Mr. Whitehead (Colesworth); 3, A. Firth (Bradford). Pairs (Livebearers): 1, A. B. White (Keighley); 2, A. Deskin (Cresswell); 3, R. J. Greenhouse (Nottingham). Pairs (Guppies): 1, Mrs. A. Firth (Bradford); 2, J. Hodgkinson (Bradford); 3, Mr. Whitehead (Colesworth). Furnished Jars: 1, P. Barrett (Bradford); 2 and 3, G. Holmes (Bradford). Goldfish: 1 and 2, L. Booth (Bradford); 3, Master B. Deskin (Cresswell). F.N.A.S. Diplomas were awarded to Mr. A. Firth for a Nipperfish with 81 points, and Mr. D. Carr for Flying Fox with 82 points. A.Y.A.S. Diploma and Plaque for best fish in show were awarded to Mr. D. Carr.

AT the Leicester A.S. meeting held on the 6th October, 42 members and visitors were present. Messrs. Dutton, Phipps, Fern and Cook gave short lectures to members upon the subjects of "Electropics and the Fish Keeper," "The Economical Tank," "Filters," and "Diseases." Results of the Table Show for Goldfish were: 1, M. E. Pepper; 2, Master Miller; 3, Mrs. Heftall. Anabantids: 1, Master Holman; 2, Mrs. Williams; 3, M. Dutton. The Albert Park Show results were announced and prizes awarded for the following achievements: Display of Furnished Aquaria Coldwater Section: 1, 2 and 3, and Best Fish in Show: G. Fern, Highly Commended; B. Payne. Tropical Section (Juppies): 1, Master Ansell; 2, Master Berry. Tropical Section (Betta): 1 and Best Fish in Show: M. E. Pepper; 2, N. Vessey; 3, M. Dutton. Highly Commended: J. Williams.

THE October meeting of the Pontefract and District A.S. was designed specially for the newcomers to the hobby. Mr. H. Mortimer gave a lecture entitled "Setting up an Aquarium." This lecture was enjoyed by both the members and the many visitors. The table show was judged by Mr. P. Bratley and the results were as

follows: Special Novice Class: For extreme having less than two first prizes during the past year: 1, Mr. T. Hatcher; 2 and 3, Mr. G. Copley.

AT the thirteenth annual general meeting of the Yeovil and District A.S. Mr. D. S. Langdon, a keen and active member since the Society was formed, was elected President of the Society. The following officers were elected:—Chairman, Mr. T. C. Parry, Vice-chairman, Mr. M. Fitzroy, Treasurer, Mr. C. Bushall, Secretary, Mr. A. Nicholls. Crossword—Miss D. Chaffin, H. Dodd, M. Hildbert, D. Pinn, W. Reeves, W. Watt.

The retiring secretary, Mr. T. C. Parry, reported that the Society had completed a very successful year, with the interest in Fish Keeping in Yeovil increasing, hence the Society's continued success. The treasurer, Mr. C. Bushall, reported that the financial position is as sound as ever.

During the year the Society had great success in Open Shows, the most recent being at the Bristol Open Show. At this show the Yeovil Club won the Capaldi Cup for the best furnished Aquaria, once again set up by Mr. D. Silver. The George Harper Cup for the best Pond and River fish was won by Mr. G. Gillard exhibiting a Tench. Other winners were as follows:—R. Barrett, 2nd, Goldfish; N. Stoker, 2nd, Fishers; T. Parry, 2nd, Catfish; D. N. Pinn, 2nd, Cichlids; (Breeder) G. Gillard, 2nd, Anguils; N. Wright, 3rd, Guppies; (Breeder) C. Bushall, 2nd and 3rd, Molts. Commended aquaria: D. Langdon, T. Sharp. The November meeting consisted of a Fish Show. Male Guppies for Tropical keepers and a team of four fish bred in 1966 for the Coldwater section. Guppy winners—1 and 2, A. Nicholls; 2, D. Pinn; 4, N. H. Wright. Breeder Class—1 and 2, V. Collins (Fountains); 3, D. S. Langdon (Shilohs).

AT the October meeting of the Kingston and District A.S. the following classes were decided: Breeders (Guppies): 1, R. Cooper; 2, Mrs. D. Stages; 3, D. Ellis. Breeders (Livebearers): 1 and 2, G. Greenhall; 3, R. Cooper. Breeders (Goldfish): 1, D. Ellis; 2 and 3, M. Bartlett. Pairs: 1, G. Greenhall; 2, B. Ella. A.O.V. Livebearers: 1 and 3, G. Greenhall (Blackwood); 2, R. Biggs (Haltwhistle Guppy).

THE Reading and District A.S. will be staging the Three Counties Aquarist Show for 1967 at the S.G.B. Social Club, Gas Lane, Reading, on Saturday 27th May. Booking from now Friday 26th May. The Show Secretary is Mr. C. Masters, 16 Marcombe Avenue, Caversham, Reading.

AT the meeting of the Ilford & District Aquarist and Pondkeepers' Society held during September a sale of fish and plants took place for the benefit of members, and also the Society's Annual All Classes Table Show was held. The results were as follows: Best Shrimps: 1, 2 and 4, Mr. Berger; 3, Mr. Cook. Female Guppies: 1, 2 and 3, Mr. Hartman; 4, Mr. Sampson. Male Guppies: 1, 2, 3 and 4, Mr. Hartman. All Classes Table Show: Best Egg Layer: Mr. Berger (Ventral Goldfish); Best Livebearer: Mr. Hartman (Piny Yantana); Best Junco Entry: Mr. Sampson (Common Goldfish).

In October a Visual Quiz provided a very interesting evening and thanks are due to Mr. and Mrs. Roth and Mr. Brill for preparing a wide selection of items for identification and classification including an excellent selection of live fish and plants; a good assortment of minerals and coloured illustrations. Mr. Sampson attained the highest number of points. The results of the October Show were:—Aquarist Visual Goldfish: 1, 2 and 4, Mr. H. Berger; 3, Mr. W. Cook. Breeders Class Tropical and Coldwater: 1 and 4, Mr. Sampson; 2, Mr. Cook; 3, Mr. Robinson. The Society's Annual Home Aquarist Competition was held also in October. There were about 12 entries and the results were as follows:—1 and 2, Mr. I. Hartman; 3, Mr. L. Smith; 4, Mr. Robinson. Among future events are the following: 12th December, Selection of films including the British Railways pioneering documentary "Between the Tides," 9th January, Annual

Prizegiving and Report by Show Secretary. In addition the Blood Class Club will show their film of the Arts and Crafts Exhibition held in April 1966 at Netbridge, Illinois, in which the Society took part. Anyone interested in fishkeeping and aquatic life will be welcome at future meetings. Further information is available from the Secretary, Mr. B. Roth, 13 Dunstable Road, Daglington.

THE seventh table show of the Unbridge and District A.S. this year was held at the end of September and Mr. T. Watt was the judge. The only prize in the egg laying month class went to Mr. Sumner with a Jordanella Florida; Mr. Shill took first and second prizes in the Characin class with two Brown Aired terns, two very good fish. In the laboratory class first prize went to Mr. Branson with a three spot gurnard, second prize to Mr. Sumner with a Siamese fighting fish. First prize in the second class went to Mr. Sumner and the second to Mr. Branson. In the novice class both prizes were won by Mr. Gray with a Synodontis barb and a Tropheus moorii.

The club is pleased to announce that two well-known aquarists namely Mr. Arthur Boarder and Dr. R. O. B. Lutz have been made honorary members of the club. Mr. Boarder judged a show of cactus plants held in November, and Dr. Lutz is to give an illustrated lecture on a fish collection he attended in Germany. It has been decided to publish a club magazine once a quarter, commencing January.

RESULTS of the table show of the Dundee A.S. at the October meeting were as follows: Anabantids (18 entries, 12 Duodes, 6 Perils): 1, A. Overman (Best fish in Show); 2, W. B. Russell; 3, G. Reid; 4, J. Ireland. Catfish (7 entries, 5 Duodes, 2 Perils): 1, P. McNaughton; 2, D. Adams; 3, A. Overman; 4, B. McFarlane. Breeders (Guppies) (3 entries, all Duodes): 1, 2 and 3, J. Robin Barrett. The result was Duodes 21 points, Perils 13 points. The programme which was advanced was by Brentwood Aquaria and was their No. 2 programme on "Aquarium Plants" and this proved very interesting to both Societies.

DUE to unforeseen circumstances, the venue for the Chingford and District A.S. has been changed to Larkwood Primary School, New Road, Chingford, E.4. Meetings are now held on the second Wednesday of each month. At the recent A.O.M. Mr. N. Y. Hazlett, 39 Mansfield Hill, Chingford, was elected secretary and Mr. G. Gibbs, 27 South Avenue, Chingford, was elected show secretary. A full programme of lectures and table shows for the coming year has now been proposed.

For a number of years the club has given an exhibition at "Chingford Day" in aid of local charities. As next year is the 21st Anniversary of Chingford Day the club hopes to present a special display for the benefit of the general public.

NEW SOCIETIES

A MEETING was held on the 6th October in the Community Centre, Billingham, to form a new club. Several would-be members came along, including the secretary and some members of nearby Stockton-on-Tees A.S. to offer help and advice. It was decided the name should be Billingham Aquarist Society, and meetings will take place in the Community Centre every third Thursday at 7.30 p.m. New members will be very welcome. The secretary is Mr. M. Jennings, 39 Curtis Croft, Billingham, Co. Durham.

New Society

A NEW society has been formed at Birkenhead. The name will be the Birkenhead Aquarist Society and the Hon. Secretary is Mr. T. Fretwell, 21A, Willowbank Road, Devonshire Park, Birkenhead, Wirral, Cheshire.

We regret that owing to extreme pressure in space some Club Reports have been held over until the next issue.

SOME PEOPLE TRY THEM ALL

**-MOST COME
BACK TO THE
WINNER**



The reason, of course, is TetraMin's premium quality. Other flake foods may look, smell and even feel like TetraMin. But none combine TetraMin's extra high protein content and natural fish foods that tropicals thrive on.

It's made by TetraKraftWerke, West Germany, world's largest and most experienced fish food manufacturer. Among experts that's the name for premium quality. You can rely on it for scientifically balanced feeding—the finest diet for your fish. TetraMin: It never clouds water. In 10 varieties and many sizes for every feeding need.

FREE FULL-COLOUR FEEDING BROCHURE
Send a stamped addressed envelope for the newly available full colour tropical fish feeding guide complete with feeding and temperature tables to:
Herb-Royal Ltd., Dept A12,
Colley Lane Estate, Bridgwater, Somerset.

Herb  Royal

**NATURALLY
the BEST!**

HERB-ROYAL LIMITED, Colley Lane Estate, BRIDGWATER, Somerset. Tel: BRIDGWATER 8221

by Derek McNerny
and Geoffery Gerard



ORDER NOW
from your local
bookseller or pet shop

The new 3rd edition
brings the book right
up to date and fea-
tures 32 extra colour
pages.

All About Tropical Fish is a complete guide to the construction of an aquarium, its maintenance, and the breeding of tropical fishes, freshwater and some salt water. There are some 350 first class illustrations, over a third in full colour.

"The treatment is systematic. . . and the information well laid out. . . . The standard of production is high and the illustrations are good. . . . The aquarist will be well served by this attractive and practical book."—*New Scientist*

A HARRAP BOOK

84s.



CHANGE NOW
To **NEW**
KINGFISH
NUTRITION FLAKES

**THE FINEST DIET
FOR ALL TROPICAL FISH**

★ *Costs no more than
ordinary fish foods*

2/9 5/6 15/6

A superior aquarium product by *Aquatic-Hobby Ltd.*

AQUATIC SUPPLIES AND EQUIPMENT

FROM

ROPHELL (HORTICULTURE)

FAIRHAVEN • CALDECOTE • CAMBS.

Tel: Madingley 330

<p>HEATERS</p> <p>Es Es Standard—25, 50, 75, 100w. ... 7-8</p> <p>Es Es Super—25, 50, 75, 100w. ... 10-8</p> <p>Duplin 150w. for outdoor use ... 14-8</p>	<p>AIR PUMP</p> <p>Spares</p> <p>Jato Mini diaphragm ... 1-6</p> <p>Jato Silent diaphragm ... 1-6</p> <p>Plastron Minor diaphragm 1-6</p> <p>Plastron Major diaphragm 1-6</p> <p>Zookeko Super diaphragm 2-9</p>	<p>Breeders Nets, Nylon cord making and sprayed wooden handles.</p> <p>4' x 5' Handle 5' ... 13-0</p> <p>7' x 6' Handle 5' ... 21-6</p> <p>7' x 8' Handle 10' ... 34-6</p>	<p>Other Types</p> <p>Dried Daphnia ... 4 & 1-4</p> <p>Amoeba Eggs ... 9</p> <p>Dried Flies ... 9</p> <p>Hydro concentrated Goldfish food 1-8 & 2-0</p> <p>Hydro variation Mocha ... 1-0</p>
<p>HEATER HOLDERS</p> <p>Spring clip type ... 1-10</p>	<p>RUBBER SUCKERS</p> <p>Knob Type ... 2</p> <p>Double sided ... 4</p>	<p>BREEDING TRAPS</p> <p>Growell 5-way convertible 28-6</p> <p>Hydro Fish Breeder, Fine and Coarse ... 7-0</p>	<p>FRY FOODS</p> <p>Brier Shrimp Eggs ... 1-4</p> <p>Multi-Fry Food ... 2-4</p> <p>Liquify No. 1 (Egglayers) 2-6</p> <p>Liquify No. 2 (Livebearers) 2-4</p> <p>Sun-grow Fry Food ... 1-4</p>
<p>THERMOSTATS</p> <p>Es Es 'Minor' ... 12-4</p> <p>Es Es 'Major' ... 15-0</p> <p>Es Es 'Sentinel' ... 24-6</p>	<p>FILTERS</p> <p>Hydro Jet ... 5-0</p> <p>Hydro De Luxe ... 13-6</p> <p>Gre-Wall Bubble Up Slim Jet, external ... 17-6</p>	<p>MISCELLANEOUS</p> <p>Arborea Aquarium Pump, 1 lb. size, Green or Cream 2-0</p> <p>Aquarium sealer (Black) ... 1-10</p> <p>Crystal sealer (Green) ... 2-0</p>	<p>REMEDIES</p> <p>Hydro ... 2-4</p> <p>Dream Aquarium Salt ... 1-2</p> <p>Wardley's Fungi Free ... 7-4</p> <p>Clarox (Clears Algae) 2-10 & 17-6</p>
<p>THERMOMETERS</p> <p>Es Es Dumpy ... 4-4</p> <p>Floating Spirit ... 2-4</p> <p>Standard Spirit ... 2-0</p> <p>Section Spirit ... 2-0</p> <p>Spore Dumpy Rings ... 6</p>	<p>FILTRATION</p> <p>Accessories</p> <p>Datum glass wool ... 1-2</p> <p>Datum glass pills ... 1-2</p> <p>Datum floor carbon ... 1-2</p>	<p>TANK BACKINGS</p> <p>Aquarium, 16" x 9" ... 16-4</p> <p>Reich and Covert, 16" x 9" 15-0</p> <p>Shiprock, 16" x 9" ... 16-4</p>	<p>PLANT</p> <p>Accessories</p> <p>Plant Growing Compound ... 2-4</p> <p>Plant Fridge ... 4-4</p> <p>Planting Sticks ... 1-9</p>
<p>AIR PUMPS</p> <p>Jato Mini ... 1-1-0</p> <p>Jato Silent ... 1-10-0</p> <p>Plastron Minor ... 1-1-0</p> <p>Plastron Major ... 1-4-0</p> <p>Zookeko Super ... 2-14-0</p>	<p>CLEANING EQUIPMENT</p> <p>Woodmill Air Separator ... 10-0</p> <p>Woodmill Hand Separator 15-0</p> <p>Aqua Vac Standard (Battery) ... 46-0</p> <p>Spore bags (5) ... 4-0</p> <p>Fish Tail siphon ... 2-0</p> <p>Automatic Fish Tail siphon Rubber Tubing for siphoning, per ft. ... 4</p> <p>Aluminium algae scrapers 2-3</p> <p>Scrapers ... 4-4</p>	<p>FEEDING EQUIPMENT</p> <p>Floating Dry Feeders ... 1-0</p> <p>Warm's Aqua automatic feeder ... 9-0</p>	<p>AQUATIC</p> <p>Literature</p> <p>Dunfield Little Wooders All at 96, each.</p> <p>Garden Pond Construction</p> <p>Tropical Fishkeeping</p> <p>Goldfish</p> <p>Coldwater Aquarium</p> <p>Soaking Garden Pools</p> <p>Tropical Aquarium for Beginners</p> <p>Soft Cover Books</p> <p>Tropical Fishes ... 2-4</p> <p>The Goldfish ... 2-4</p> <p>Live Foods for Aquarium Fishes ... 2-0</p> <p>Garden Ponds ... 1-4</p> <p>The Aquarium ... 2-0</p> <p>Goldfish for the Novice ... 2-0</p>
<p>PISTON PUMPS</p> <p>Hydro 'Jet' ... 8-7-4</p> <p>Hydro 'A' ... 8-10-0</p> <p>Hydro 'B' ... 8-5-0</p> <p>Hydro 'C' ... 12-10-0</p>	<p>NETS</p> <p>Oiling Aquarium Nets, Green Nylon</p> <p>Mesh</p> <p>2' x 3' 1-2 7' x 4' 1-4</p> <p>3' x 4' 2-3 7' x 5' 4-4</p> <p>White Dacron</p> <p>2' x 3' 1-3 3' x 6' 2-9</p> <p>3' diameter Green Nylon 1-0</p> <p>Daphnia Nets, 12" dia. ... 16-0</p>	<p>COLORMETER P9</p> <p>PH Testing Kit ... 27-6</p>	<p>DIAGNOSTIC</p> <p>Water hardness testing kit 17-6</p> <p>Spore salinex (in 10s) Strength No. 1 ... 2-0</p>
<p>AIR PUMP</p> <p>Accessories</p> <p>Tubing clamps ... 1-3</p> <p>Clear plastic tubing, per ft. ... 3</p> <p>Red rubber tubing, per ft. ... 4</p> <p>Diffuser screens 10" ... 5</p> <p>" " 12" ... 6</p> <p>" " 15" ... 8</p> <p>Cylindrical diffuser stones 1-4</p> <p>Hydro gang valve ... 2-2</p> <p>Hydro regulator ... 4-0</p> <p>Airline valve ... 2-3</p>	<p>FISH FOODS</p> <p>Wardleys</p> <p>Guppy fare 1-3 & 2-3</p> <p>Salmon Eggs 1-2 & 2-3</p> <p>Liver Meal 1-2 & 2-3</p> <p>Beef Meal 1-2 & 2-3</p> <p>Fish Meal 1-2 & 2-3</p> <p>Crab Meal 1-2 & 2-3</p> <p>Molly fare ... 2-4</p>	<p>POND</p> <p>Requirements</p> <p>All pond plants, fishes, pool screens, planting baskets, etc., available in season.</p>	

TERMS:

Cash with order. Carriage 2/6 up to £2. 3/6 up to £4. Over £4 carriage free.

PERSONAL SHOPPERS. A selection of the aquatic requirements advertised are available at our shop at 270 Mill Road, Cambridge.

Hykro from Denmark

Since 1936 Hykro have turned out the finest quality Fish Foods. The latest is the new **Variety Food**. One trial will convince you that it is absolutely unbeatable. We ourselves carry stocks of up to 10,000 Tropicals (**Trade only**) and Thousands of Goldfish. Anyone who has seen our stocks, can tell you they are always in superb condition, and they are fed solely on Hykro Flakes, Concentrated Food, and now of course the new **Variety Food**.

All these foods are stocked by all good Aquarist and Pet Shops and price is very reasonable for real quality food.

Hykro Flakes 1/- Breeders Pack 1 Kilo 32/6. Established in 1936.

Hykro Natura 8d.

Hykro Concentrated Food 1/- Also in 4lb. Pack 2/-. Fine for all Coldwater Fish and the larger Tropicals.

Hykro Turtle Food 1/3. Larger new Pack.

Hykro Tropical Dried Flies. For Turtles and all Fish 9d.

And now the Sensational **Variety Food** 3/-.

JOE GRASSBY

The Hykro Depot, Mobberley, Nr. Knutsford, Cheshire



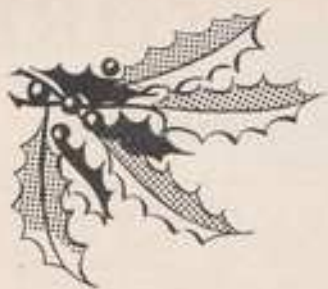
This is an advertisement. It is predominantly black because we mourn for the fish you are losing due to WHITE SPOT. Please accept our deepest sympathies.

It is a pity you don't use

ACUREL Q

An entirely British product of course. It has no undesirable side effects, like causing sterility, discolouring the water or retarding the growth of plants.

TRADE ENQUIRIES TO: Bioquatic Laboratories Dept. T-20., 27B Penistone Rd. Sheffield 6



Evans Electronics extend to their many friends both home and overseas "warm" greetings and every good wish for Christmas, and a continued prosperity in 1967.

EVANS

HEATERS AND THERMOSTATS



Prices are, Heaters 9/8, "Elephant" thermostats 18/-.
Backed by the usual 12 months guarantee.

EVANS ELECTRONIC DEVELOPMENTS LTD

Evonic Works, Shady Lane, Birmingham 22A

Telephone: Great Barr 1764/5

SUPER PET STORES

TROPICAL & COLDWATER FISH SPECIALISTS

116 Victoria Street, Blackburn

Telephone : 55049

- Call and see our selection of Aquariums complete with or without stands, Plain or Ornamental, Bows or Straight, Plastic, Stainless Steel or Stove Enamelled.
- Good selection of Books and Accessories.
- Best selection of Tropical Fish in Lancashire.
- Marine equipment in stock.
- We also stock a selection of Coldwater Fish and Plants.

Just arrived—the beautiful *Cryptocoryne Thwaites (Lagenandra Ovata)*.

Special offer—three for only 10/- Post 1/6.

S.A.E. Price list

A NEW SOURCE OF QUALITY SUPPLY

WEBB'S AQUARIA

27 WEBBS ROAD, LONDON S.W.11

Telephone: BAT 8612

WHOLESALE AND RETAIL

PERSONAL CALLERS & MAIL ORDER SELECTION

FISH	FISH	FISH	FISH
Australian rainbows .. 3/6	Fighters female .. 3/6	Pearl danio 3/6	Sucking loach .. 5/-
Albino tiger barbs .. 7/6	Giant danio 7/6	Penguins 4/-	Sitsortails 4/-
Black Swords .. 4/6	Golden barbs .. 3/6	P.K.rebensis 7/6	Spiny eels 7/6
Blue gourami .. 3/-	Glass cats 4/6	Puffers 7/6	Serpae 3/6
Butterfly fish .. 7/6	Green swords .. 4/6	Red wag swords .. 3/6	Silver hatchets .. 4/6
Black widows .. 4/6	Glass fish 5/-	Red tuxedo swords .. 3/6	Silver veil angels .. 5/-
Berlin swords .. 3/6	Harlequins 3/6	Red fin sharks .. 5/-	Tiger barbs .. 2/6
Black lyretail mollies .. 3/6	Headstanders .. 20/-	Red comet swords .. 4/6	Tinfoil barbs .. 7/6
Black veil angels .. 5/-	Jewel cichlids .. 5/-	Red simpson swords .. 4/-	Variatus platys .. 10/- pr.
Black sharks .. 5/-	Kull loach 3/6	Red eyed tetras .. 3/6	W.C.M.H. 3/6
Black mollies .. 3/6	Metynnis 35/-	Roy barbs 3/6	X-Ray fish 4/6
Black paradise .. 4/6	Neons 3/- each 8 for .. 20/-	Rasbora elegans .. 4/6	Yellow wag platys .. 3/6
Crossing gourami .. 4/-	Nigger barbs .. 7/6	Rasbora dorsalis .. 4/6	Yellow comet platys .. 4/6
Firetail rasbora .. 3/-	Opaline gourami .. 3/6	R.T.B. sharks .. 8/-	Zebra 2/6
Fighters male 12/6 to 20/-		Silver angels .. 3/-	Zebra cichlids .. 3/-

SEND SECOND CHOICE WITH ORDER. CASH WITH ORDER PLEASE. 7/6 PACKING & RAIL CHARGE. ORDER TO BE COLLECTED FROM NEAREST MAIN LINE STATION.



Vitakraft

THE WORLD'S TOP SELLING FLAKE FISH FOOD



- ★ Does not cloud the water.
- ★ Laboratory tested.
- ★ Highly nutritious.
- ★ Economical.

British Aquarists can now reap the benefit of the World's best selling fish foods made in the most modern fish food factory in the World.

Ask your supplier today for:-

Vitawil Staple Food:- 1/11d. 3/-. 6/9d. 22/6d. & 70/-.

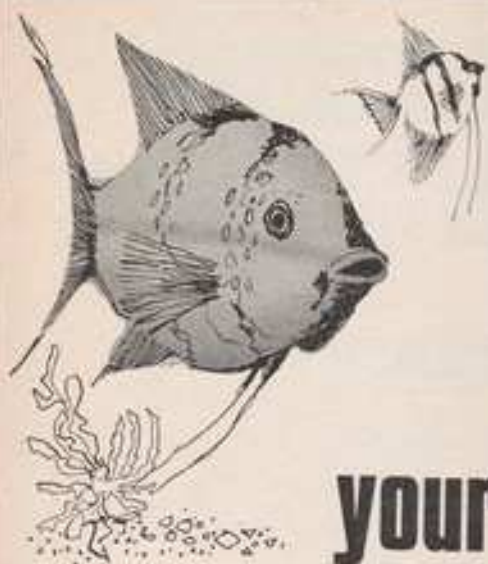
Vitality Conditioning Food:- 3/6d. & 6/9d.

Nature Growth Food:- 3/6d. & 6/9d.

Rosawil Colour Food as nourishing as live food:- 3/6d. & 6/9d.

(Wholesale Distributors Required).

Eric Woods (Rosewood) Ltd., Arleston, Wellington, Shrops.



your aquarium

needs the special security of

ARBOLITE Q.S.

Glazing Compound

Looking at fish is said to be one of the most restful available. And you can enjoy extra security when you use Arbolite Q.S. Glazing Compound, versatile, watertight and the best product of its kind. Arbolite Q.S. Glazing Compound is available in green—and there's a pack to suit almost every requirement (tins from 1 lb. to 14 lb., kegs from $\frac{1}{2}$ cwt. to 1 cwt.)



ADSHEAD RATCLIFFE & CO. LTD.
BELPER DERBY Tel Belper 2891 (3 lines)

Are you interested in . . .

REPTILES ? AMPHIBIA ? AQUARIA ?

. . . or any other branch of natural history?

Then write now for our free catalogue of reptiles and amphibia; cold-water and tropical aquarium plants; hardy ornamental fish; aquatic insects and larvae; marine fish and invertebrates; locusts; stick insects; live foods etc., etc.

THE BRIXHAM BIOLOGICAL SUPPLIES,

12, Elliot Grove,
Brixham, South Devon.
*phone 65188.

BROAD GREEN AQUARIUM

Wishes you all a Happy Christmas and many pleasant hours with your fish in the New Year.

New feeding from us for your fish. Live adult Brine Shrimp obtainable ready packed in plastic bags, the same as Daphnia.

Don't forget your pond fish when ice is about. Fit a Floating Pond Heater, 35/- & 1/6 P.P. Your fish are worth this.

Over 50 tanks of Tropical Freshwater and Marines also Fancy Goldfish at

250 LONDON ROAD
WEST CROYDON

Opp. ABC Cinema
Car Park
Broad Green

SURREY
Postal Code CRO 2TH.

TRIFISH LONDON

IMPORT
WHOLESALE ONLY

Tropical Coldwater
and
Tropical Marine

All fish guaranteed in good disease-free condition
Wholesale List to bona-fide Traders on application
Van delivery twice weekly in London Area

**ALWAYS A GOOD SELECTION
OF RARE TROPICAL FISH**

53, Stowe Road,
SHEPHERD'S BUSH, W.12

SHE 6883

CHI 4722

Special Christmas Offer

CARDINALS—4 for 11/6

Full range of tropical fish including some fine
Exodon paradoxus, *Anostomus anostomus*, *Scots* and
Killifish

Tanks, Tropical Plants and all accessories
The Portswood Pet and Aquatic Centre
119 Portswood Road, Southampton
Telephone 56595

VISIT THE SPECIALISTS
FOR ONE OF SCOTLAND'S
LARGEST DISPLAYS OF
TROPICAL FISH AND
PLANTS, ALL OF OUR FISH
ARE FULLY QUARANTINED
FOR AT LEAST SEVEN
DAYS PRIOR TO SALE.



WE ARE MANUFACTURERS OF AQUARIUMS
AND STANDS, SPECIAL SIZES MADE TO
ORDER AT NO EXTRA COST.

Half Day: Wednesday Sunday Opening 12-5.30 p.m.

AQUASCENE INSTALLATIONS
84 Calder St., Blantyre, nr. Glasgow tel: 2307

DRIED TUBIFEX

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

Also "STIMULITE" brand of Goldfish
and Tropical Fish Foods

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

WHOLESALE DISTRIBUTORS REQUIRED.

Write to:

P. H. Hastings Ltd.

182, SULTAN ROAD, PORTSMOUTH

WE ARE THE SOLE IMPORTERS, PACKERS AND
DISTRIBUTORS OF DRIED TUBIFEX FOR EUROPE

**NUTRITIOUS! AMAZING!!
DISEASE-FREE
AT LAST!!!**

MIRACLE WORMS

Stick a piece to the inside Front Glass. You
will be amazed. Brings all Fish into Breeding
Condition. Perfect diet for ALL Fish.

NO WASTE, NO FOULING

Send 4/6d & 6d. P. P.

to feed 20 Fish for approx. 4 weeks

MELLOR'S PET STORES

9^A & 11^A Hartington Road,
MIDDLESBROUGH, Yorks.

SEND ALSO FOR FISH AND PLANT LIST

BUYERS' GUIDE

The firms listed are wholesalers or retailers or both in fishes, tanks, plants, appliances and accessories, reptiles and amphibia. Abbreviations: W.—Wholesale only. R.—Retail only. WR.—Wholesale and Retail. C.—Coldwater. T.—Tropical. P.—Plants. AA.—Appliances and accessories. R. & A.—Reptiles and Amphibia. E.C.D.—Early closing day.

BERKSHIRE

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

CHESHIRE

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

CORNWALL

Marine Facilities Ltd.
Commercial Buildings,
Custom House Quay, Falmouth
Telephone: Falmouth 88
E.C.D. Tuesday (in winter only) WR. T. P. AA.

DEVON

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

DORSET

Noah's Ark Aquarium
Swannery Car Park, Weymouth
Telephone: Weymouth 3038
Open Daily R. T. P. AA.

DURHAM

The Fish Bowl
Bardon Road, Sunderland
Telephone: Sunderland 71026
E.C.D. Wednesday (All day), WR. C.T.P.A.A. R.&A.
Metcalf, G. R.
187, Northgate (near Minorities Garage)
(On original A.1 road) Darlington
Telephone: Darlington 5991
E.C.D. Wednesday. R. C.T.P.A.A. R.&A.

ESSEX

Goodmayes Aquaria
70 Grove Road, Chadwell Heath
Telephone: Goodmayes 2594
E.C.D. Thursday. R. C.T.P.A.A.
Skilton, C. J., Aquarist
139, Galleywood Road,
Chelmsford
Telephone: Chelmsford 56878
E.C.D. All Day Saturday. W. C.T.P.A.A.
Stan's Aquarium
466, Southchurch Road, Southend-on-Sea
Telephone: Southend 67859
E.C.D. Wednesday R. C.T.P.A.A. R.&A.

GLOUCESTERSHIRE

Cheltenham Aquatics (Prop. Mr. B. R. James)
10 & 11, Suffolk Parade, Cheltenham
Telephone: Cheltenham 24949
Closed all day Monday R. C.T.P.A.A. R.&A.

HAMPSHIRE

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

Bridgemary Pet Stores
56, Grogton Avenue, Gosport
Telephone: Fareham 4781
E.C.D. Wednesday. R. C.T.P.A.A.

Wingate Zoological Supplies
7, Market Street, Winchester
Telephone: Winchester 2406
E.C.D. Thursday. R. C.T.P.A.A. R.&A.

HERTFORDSHIRE

The Pet Shop (R. S. Colton)
68/68b, London Road, St. Albans
Telephone: St. Albans 55507
E.C.D. Thursday R. C.T.P.A.A. R.&A.

KENT

Gillingham Pet & Aquatic Centre
(Proprietors F. & E. Alderman)
125, Canterbury Street, Gillingham.
Telephone: Medway 52049
E.C.D. Wednesday R. C.T. P.A.A.

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

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

LANCASHIRE

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

Liverpool Aquaria Company
23, Sir Thomas Street, Whitechapel, Liverpool, 1
Telephone: Central 4691
Open Monday to Saturday 9 a.m. to 6 p.m.
R. C.T.P.A.A. R.&A.

LONDON (East)

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

LONDON (North)

Philip Castang Ltd.
75, 91, 95, Haverstock Hill,
Hampstead, N.W.3
Telephone: Primrose 1842 and 9452
E.C.D. Saturday. W. T.P.A.A. R.&A.

Gould, K. T.
30, Hewitt Avenue, Wood Green, N.22
Telephone: Bowes Park 8786
Weekends only R. T.P.A.A.

LONDON (South)

Fairbairns Aquaria, Ltd.
15, Well Hall Parade, Eltham, S.E.9
Telephone: Eltham 5859
E.C.D. Thursday. R. C.T.P.A.A. R.&A.

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

Tachbrook Tropicals Ltd.
244, Vauxhall Bridge Road, Victoria, S.W.1
Telephone: Victoria 5179
(Open all week except Sundays).
WR. C.T.P.A.A. R.&A.

Windmill Products
244, Vauxhall Bridge Road,
London, S.W.1
Telephone: Victoria 5179
(Open all week, except Sundays). W. A.A.

LONDON (West)

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

Chiswick Aquaria
136, Chiswick High Road,
London W.4
Telephone: Chiswick 6549 WR. C.T.P.A.A. R.&A.

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

NORTHAMPTONSHIRE

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

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

OXFORDSHIRE

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

STAFFORDSHIRE

Wolverhampton Aquatics
147, Horsley Field, Wolverhampton
Telephone: 24147
E.C.D. Thursday. WR. C.T.P.A.A.

SURREY

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

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

SUSSEX

Dowding, Conrad A.
1, St. John's Terrace,
Lewes
Telephone: Lewes 3970
E.C.D. Wednesday. Open until 8 p.m. Fri. & Sat.
R. C.T.P.A.A. R.&A.

Preston Aquarium
44, Beaconsfield Road, Brighton
Telephone: Brighton 681602
(Open all week). R. C.T.P.A.A.
Regency Pets Aquaria (Prop. R. A. Bassett)
23, Surrey Street (outside Brighton Station),
Brighton
Telephone: 29940 R. C.T.P.A.A. R.&A.

WARWICKSHIRE

The Coventry Aquarist
43, Melbourne Road, Coventry
Telephone: Coventry 72772
E.C.D. Thursday. WR. C.T.P.A.A.

WORCESTERSHIRE

The City Aquaria, Bird and Pet Supplies
Mrs. M. Hemming
34/36, Friar Street, Worcester
Telephone: Worcester 22005
E.C.D. Thursday. R. C.T.P.A.A. R.&A.

YORKSHIRE

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

SCOTLAND

Aquarists' Rendezvous
164/168, Albert Drive, Pollokshields, Glasgow, S.1
Telephone: South 4258 WR. C.T.P.A.A.
P. N. Greening
176, Blackness Road, Dundee, Co. Angus
Telephone: Dundee 66409
E.C.D. Wednesday. R. C.T.P.A.A.

NORTHERN IRELAND

Ulster Aquatics
15, Montgomery Street, Belfast
Telephone: Belfast 27144
E.C.D. Wednesday. WR. C.T.

PREPAID ADVERTISEMENTS

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

FOR SALE

CALLING ALL AQUARISTS. Call and see our large selection of Tropical and Coldwater fish, Plants in variety. We also stock all accessories at "The Aquarium," 193, Watlington Road, Northampton. Phone 34610.

GLAZED aquaria in all sizes including 36 x 15 x 12, 75, 64, 18 x 30 x 15, 19, 64, 24 x 12 x 12, 45, 64, tanks despatched on any part of Britain, overseas extra. Plants, Accessories, Fish. Wright's, 15, Lorne Road, London, S.W. Please Artway 3820.

TROPICAL FISH, fully guaranteed, over 100 species offered at lowest prices. All specialist requirements supplied. Personal shoppers only. Bunting Fisheries, 62, Mayer Road, Wood Green, N.22.

GUARANTEED thermosets, heater and thermometer, 20s. post paid. Best heater wattage. Sterling Fisheries, 62, Mayer Road, N.22.

CHELTENHAM AQUATICS (Prep. Mr. B. R. James). Largest selection of Tropical and Coldwater fish in Gloucestershire. Best-fitted and stainless steel aquaria Equipment, Kopples and Amphibie and everything for the Water garden. 11, Suffolk Parade. Tel. Cheltenham 24949.

WHITE WORM BY WEIGHT. 1 oz., 4s.; 4 oz., 15s. Post paid. Duns & Son, Durdon Aquatics, Alverton Road, Persey, via Alverchurch, Worcestershire. Tel. Wythall 2582.

GREENS OF BLACKPOOL for tropical and coldwater fish, plants, tanks and accessories. Open daily till 6.30 p.m. (Wednesday, 1.30 p.m.) Sunday, 10 a.m. to 1 p.m. 279, Waterloo Road, South Shore. Telephone 45669. Closed Whit Monday at 12.30 p.m.

TROPICAL FISH, all accessories, plants. Prince's Pet Stores, 142 Elder Road, Colridge, Stoke-on-Trent.

EUSTROPEAN AQUARIA. Ornamental Stands, Glazing, Cement, Equipment Manufacturers. S.A.B. Westby, Burton, Cheshire.

OLDBURY'S OF CHESTER, 100 varieties Tropical Fish, Freshwater and Marine. 49 varieties, Plants, Equipment, Live Foods. Evenings after 7 p.m. Weekends from 2 p.m. 36, Pearl Lane, Vicars Cross, Chester 41471.

PLYMOUTH TROPICALS for fish, plants and equipment. North Hill Nurseries, Tavistock Road, Plymouth. Tel. 42663.

FERRY'S for Plants. 1st and 2nd Awards British Aquarists' Festival. Assorted selections Tropical or Cold 7s. 6d., 10s. 6d., 12s. 6d. Vallisneria, Sagittaria Nana, 6s. per dozen. Cryptocoryne Becketti, 2s. 6d. each; Wilton 2s. 6d.; Harlequina 2s. 6d.; six assorted 10s.; Water Wisteria, Giant Hyacinth 2s. 6d. Post 1s. All Advertisers Accessories. C. R. Perry, Professional Aquarist, 613, West Street, Crews.

SUPERB VEILTAIL GRUPPIS. Awarded "Water Life" diploma. Best in open show. £1 per pair; carriage 5s. 6d. C. R. Perry, Professional Aquarist, 613, West Street, Crews.

AQUARIA FRAMES. For quality and economy buy direct from the manufacturer. 1 = 1 x 1 in. steel angle; 24 x 15 x 15 in., £1 10s.; 30 x 12 x 12 in., £1 8s.; 30 x 15 x 15 in., 27s.; 30 x 15 x 12 in., 26s.; 30 x 12 x 12 in., £1 3s.; 24 x 12 x 12 in., 21s. 6d.; also 18 x 10 in., 17s.; 18 x 12 in., 18s., from 1 x 1 x 1 angle. All mixed and waste ground flush. Carriage paid. Any size made to order. C.W.O. Money refunded if not satisfactory. For complete list, stands, shades, etc., S.A.E. to J. E. Hamry, 52 Charter Street, Acornham. Phone Acornham 34535.

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

ORIGINAL WORMS BY RETURN. Super Starter Culture, 3s.

WHITE WORMS BY RETURN. Super Starter Culture, 3s. All above cultures, post paid, with instructions. D. Jos, 10 Lee Road, Bowers Gifford, Bathford, Dares.

LOOK. Thermoset, heater, and thermometer, 17s. 6d. 36 x 15 x 12 angle-iron aquaria (£4 10s., 24 x 12 dino 49s. 6d., 18 x 10 pressed steel, 19s. 6d. Midge, Gravel and white worm cultures, 1s. 6d. Thousands of tropical fish and plants in stock at the right price. Large moons, 1s. 6d. etc. 10% discount off all pumps in stock; plenty of pond plants and goldfish; Otter pumps, fountain kits, p.v.c. and fibre-glass ponds; every assistance given to beginners. S.A.E. enquiries (w/cheque and ret.). The Coventry Aquarist, 43 Melbourn Road, Coventry. Phone: COV 72772.

BILLING gorgeous water snakes with pictures of "Fish". Aquatic Box 7936, Miami, Florida 33151, U.S.A.

KINGPETS keep fish in BATH, tropical and coldwater. Full range of equipment and books; low prices. Plants for ponds and aquaria. Plants and glassless pools, streams, fountains. Reptiles and other animals. 23 Beach Street, Bath, tel. 4028.

GUARANTEED QUALITY PLANTS. Anubias, Bacopa, Hyacinth, Nitrospira, Vallisneria spiralis, var. Sagittaria, Halimolobos, 4s., 7s. 6d. dozen. Cryptocoryne Becketti, Harlequina, Cordana, Wisteria, Giant Hyacinth, 2s. each. Madagascar Lace Plant, 15s. Post 9d. all orders. Over 120 varieties Tropical and Coldwater Fish, from Mariani. Personal shoppers only. Closed Wednesdays. Kingfisheries, 138 Grosvenor Road, Hockley, Essex. BAC 3714.

TIME-SWITCHES Recreational. 14 day clock, on or off, every 24 hrs. Fully guaranteed. 15 amp. Venus 37s. 6d. 5 amp. with Heilmann 8 day Clock 32s. 6d. P & P. 7s. A. R. Bachelet, A.P. Dept., 4 Park Road, Bromley, Kent.

FISHERMAN'S COVE, 35 Mountbatten Street (on main A30) Bridgewater, Som. The finest show of tropical West of London. Extensive stocks of equipment, Bow Tanks 5/6 each. Open until 9 p.m. Fridays.

BLANKET WEED REMOVER. In stainless steel. Most effective removing, without damage, blanket weed from all plants. Price 3s. 9d. plus 6d. postage.

SHREDDERS. Made of stainless steel, the super combination compresses coarse tooth plate, fine tooth plate and top plate with handle. The shredders are the only instrument capable of reducing earthworm, whiteworm, mite, etc., to a size suitable for poecogaster fry. Use coarse plate for larger fish. Price 20s. plus 1s. postage.

GIANT SAGITTARIA. Young plants 3s., 7s. 6d., 9s. 6d. dozen. Large plants 1s. 3d. and 1s. 6d. each. Postage 1s. 3d.

SHUBUNKINS. English bred, white by appointment only. S.A.E. H. S. Walker, 143-145 River Lane, Christchurch, P.S. Ponds trade only. Local buyers see Cooks Aquaria, Bournemouth.

LARGE AQUARIA FRAMES. Shades, Stands. 364 x 15 x 12 in., 28s.; 11 x 11 x 1 steel angle, 42 x 15 x 12 in., 36s.; 42 x 15 x 12 in., 38s.; 48 x 15 x 12 in., 42s.; 48 x 15 x 15 in., 45s.; 60 x 15 x 12 in., 50s.; Aluminium Shades, 364 x 12 in., 29s.; 42 x 12 in., 32s.; 42 x 15 in., 36s.; 48 x 12 in., 40s.; 48 x 15 in., 45s.; 60 x 12 in., 50s. Stands to take two tanks 184 x 10 x 30 in. high, 26s.; 184 x 12 x 36 in., 32s.; 244 x 12 x 36 in. high, 38s.; 304 x 12 x 36 in., 43s.; 374 x 12 x 36 in., 48s.; 444 x 11 x 1 steel angle, 42s.; 42 x 12 x 36 in., 54s.; 424 x 15 x 36 in. high, 58s.; 484 x 12 x 36 in., 65s.; 484 x 15 x 36 in., 69s.; 604 x 12 x 36 in., 75s. Any size to order S.A.E., carriage paid. Money back if not satisfied. Cash with order. Hockley Engineers, Drwren Place, Bath Road, Leeds 11. Tel: 25063.

QUALITY AQUARIUM PLANTS. Giant Hyacinth, Cryptocoryne Becketti, Wilton, Linnanthus 2s. 6d.; Nerve 1s. 6d.; Lotus, Petals 2s. 6d.; Wilton 2s. 6d.; Blunt 12s. 6d.; Hyacinth, Vallisneria 6d., 3s. 6d. doz.; Wisteria, Chain Sourd 1s. 6d.; Dwarf Rush 2s. S.A.E. for list. SLIDER SHOWN of Aquarium Plants for hire to clubs, etc. Greenwood Aquarist, 274 Watley Hill, Brentwood, Essex.

PLANTS in Glass. Large Aquaria Stand 3s.; Malaya Sourd 2s. 6d.; Cryptocoryne Becketti 2s. Post 1s. R. Tait, 76 High Street, Ramsgate, Kent. Thurst 33683.

GREENHOUSE GROWN TROPICALS. 5 water lettuce, 5 floating ferns, 1 salvinia, 15s.; 5 giant water lilies, approx. 9 in-35 in., £1, 60 per back plants, 50s. Post 1s. Bachelors Farm, Ockham, Surrey.

AQUARIAMA. For largest selection of Tropical Fish in East Anglia, quality Plants in many varieties, large range of Equipment. Any size tanks made to order, many second-hand tanks in stock. 21 Cambridge Road, Impington (2 miles from Cambridge) near Histon Station.

BRINE SHRIMP EGGS (California). Breeders' half-pint packs, 4s. each, 2s. for 82s. post paid. C.W.O. Hatching guaranteed. Box 7996, The Aquarist, The Barn, Stratford, Middle.

AMPHIBIA. Giga Infusoria, Snails, 6 for 3s.; Red Barnish, Snails, 12 for 3s., post paid. Also various Tropical Fish and Plants for culture, evenings (except Wednesdays) and weekends. J. E. Marshall, Cheltenham, Durdon Road, South Durdon, or Durdon, Kent. Tel.: Farningham 3223. (On A225, 11 miles from Farningham crossroads), A20.

continued on page xxvii

COME SOUTH—OR ELSE—

Send for our catalogue of
All you need for successful fishkeeping
(regret fish for callers only at present)
Your guarantee of satisfaction—since 1948

WINGATE
7, Market St., Winchester
Telephone 2406

PREPAID ADVERTISEMENTS—continued from page 2261

NEW FISH HOUSES holding 100 tanks of fish in 250 cabinets, also Plants and all accessories. Open 9 a.m. to 5 p.m., including Sunday. D. B. Barker, Honeyrove Chateau, Caxtonham, Phone 2478. (Over crossing near station).

ANGLE-IRON AQUARIA, 24 x 12 ins., 99c. Ed. Colton—everything for the Aquarist. 39d. Stannick, 7 Cuckpit Hill (opposite bus station), Derby. Telephone 42243.

PLAQUES, SHIELDS, BADGES, ETC.

R. HOLTON & SON, 309, Oldbury Road, Sarnborough, 40. Plaques, Shields, Medals, Caps and Medallions for Aquarist and Bird Societies. Tropical and Coldwater fish centres in full colour. Write for details to above.

BADGES. Eight Essential Badges for your aquarist society are made by R. E. V. Gomm, Ltd., 14-15 Frederick Street, Birmingham 1.

PUBLICATIONS

MY BOOKS are getting scarce. I estimate that within three months nearly all will be out of print. I offer single copies at 6s. each, or a complete set of six as long as they last at 32s. 6d., post free. Thomas Marshall, Aquaria House, 26 Watbury Lane, Buckhurst Hill, Essex.

WANTED

WANTED. Recent Edition of "Freshwater Fishes of the World". Must be in good condition, full price paid. Steele, West View, Hatfield, Hertford, Watlington.

SERVICE

AQUARIA set up and serviced. London area. Competitive prices. Freshwater or Marine. Box 7084, The Aquaria, The Barn, Brentford, Middx.

SOCIETY NOTICE

AIRBORNE A.S. Be a corresponding member. Monthly magazine, competitions, 10s. year. Write, Harpsden, Haulfields, Scotland Lane, Hatfield, Leeds.

I've Got Millions!

WORMS! FOODS! COMPOSTS! RESULTS!

- | | |
|---------------------------|---|
| EUGLENA | 2/6—With 8 page instructional booklet |
| MICROWORMS | 2/6—Complete with feeding powder |
| MICRO FOOD | 2/6—Specially developed for Micros |
| GRINDAL WORMS | 2/6—Miniature W. Worms Easy to breed |
| GRINDAL WORMS | 3/6—Plastic culture in wooden boxes |
| GRINDAL FOOD | 2/6—High protein content. Rapid results |
| GRINDAL COMPOST | 2/6—Freezy ground with organic base |
| WHITE WORMS | 2/6—With complete instructions |
| WHITE WORMS | 3/6—Mature cultures in wooden boxes |
| WHITE WORM FOOD | 2/6—Exclusive formula. No rotting |
| WHITE WORM COMPOST | 2/6—Compendium for quicker breeding |

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

Ask your dealer, or free delivery from

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

Visit . . .

MRS K. COOPER
Bean Hatchery
Bean, Nr. Dartford, Kent

(Just off A2 Trunk Road, few doors from Black Horse P.H.)

Large selection of

TROPICALS, PLANTS, ACCESSORIES

Call anytime including Sundays

HAVE YOU READ

FISH FOODS AND FEEDING

by *Frederic N. Gladiali*

SUMMARY OF CONTENTS

General Principles • Feeding Problems Encountered by the Fish Breeder • Foods of Animal Origin • Vegetable Foods • Dried, Bottled and Frozen Foods • Miscellaneous

Obtainable from
THE AQUARIST

THE BUTTS, HALF ACRE,
BRENTFORD, MIDDLESEX

Price
5s. od.
post free

REPTILES — AMPHIBIANS

Imports from all Continents

Write for current price list

Sole agency for England:

MR. ALAN COOK
"The Anton",

Beechwood Drive, Eaton, Congleton, Cheshire

DRS. W. DE ROVER

Ericalean 9
Ermelo, Holland

South Wales—Bridge That Gap and Call at

MAPSON AQUARIA

15 Perry Road, Bristol. 1. Tel. 26292

150 yards from city centre

Largest range of fish in the West

Tropicals, Coldwater, Marines

All Equipment, Tanks and Ponds

Tanks made any size or shape to order

Hours: 8.30 a.m.—6.0 p.m. 12.30 Wednesday

8.0 p.m. Friday

Daphnia and Tubifex usually available

W. HAROLD COTTON

F.R.S.

ICHTHYONOTOMIST

POST MORTEM EXAMINATION
of Tropical and Coldwater fishes

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

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

Examination fee 2/-

29, BROOK LANE, KINGS HEATH,
BIRMINGHAM 14

Phone HGHery 1493

HARD COVER AQUATIC BOOKS		FEEDING ACCESSORIES		FISH FOODS	
Illustrated Dictionary of Tropical Fishes (Frey)	70 0	Woodmill Floating	1 4	Broken Tropical Fish Food	1/4, 1/2, 1lb., 17 6
Encyclopaedia of Tropical Fish (Axtrod)	65 0	Woodmill Feedwell Dry	1 0	Bresiam Bro-Vit	6d., 1 4
Exotic Aquarium Fishes (Dines)	55 0	Woodmill Feedwell Live	1 0	Brossam Pond Fish Food	1 4
Tropical Fish as a Hobby (Axtrod)	35 0	Woodmill Feedwell worm feeder	1 4	McLynn's Tropical Fish Food	1/4, 1/2, 5/-, 4/6, 12/6
How to keep and breed Tropical Fish (Dr. Emmens)	40 0	Woodmill Feedwell Live and dry feeder	2 0	Sargrow	1/6, 2/6
Seawater Aquarium Fishes (Axtrod)	65 0	Woodmill Feedwell floating dry feeders	1 0	Datum Dried Daphnia	1/6
All About Tropical Fish (O'Shaughnessy)	75 0	Woodmill Feedwell floating worm and dry feeders	1 4	Datum Shrimp	1/6
Color Guide to Tropical Fish (Axtrod)	45 0	Hydro Sarg-in-one feeder Small 1/2 Large	2 0	Datum Ant Eggs	6d., 1 4
Fishes in Colour (Gwynne Yvonne)	15 0	Uno bowl feeder	1 4	Exotic Flakes	1 4
Exotic Tropical Fishes (Lowe Leal)	150 0	Uno scoop on spars	1 4	Hydro Flakes	1 0
Exotic Tropical Fishes (Bound Cover)	150 0	Uno fisher	1 4	Hydro Natural Flakes	1 0
Freshwater Fishes of the World	84 0	Worms Alive Auto worm feeder	9 0	Hydro Shrimpmat	1 0
A Manual of Aquatic Plants (Roe)	27 4			Hydro Dried Food	2 0
Tropical Fish in Your Home	25 0			Hobby Leaf green flakes	2/-, 7/-
Aquarium Plants (De-Wit)	25 0			Hobby Yell. Flakes	2/-, 7/-
Under the Sea (Burton)	90 0			Hobby Fish Food (Breakers Pack)	7 0
Tropical Aquarium Fish (Nieuwenhuizen)	18 0			Hobby 'Blue Daily'	3 0
Tropical Fish in the Aquarium (Ludwig)	18 0			Wunderbar	2 4, 4/9, 22/6
Freshwater Tropical Aquarium Fishes (Herrig & Heim)	15 0				
SOFT COVER BOOKS		WARDLEY'S FISH FOODS		REMEDIES	
Tropical Fish (T.F.H. Publ.)	10 0	Vitalizer mix (8 foods in one)	2 3	Wardley's	
Electricity in the Aquarium (Warburton)	7 4	Supremix Conditioner (Fines, Med. Coarse)	1 3	Halimid Tablets (New)	4 0
A Manual of Aquatic Plants (Roe)	17 4	Supremix (Homo-generated)	2 0	Vitamin Tablets	2 4
Starting Right with Tropical Fish (Gibson)	4 0	Superta Pelleted Food (Fines, Med. Coarse, Ex. Coarse)	8 0	Anti-Chlorine Tablets	3 0
Starting Right with Goldfish (Gibson)	4 0	Vitalizer (Fines, Med. Coarse)	2 3	Turkey Black Neutraliser	3 0
All About Guppies (Axtrod & Whittier)	13 0	McDowse "30" Colourfood (Fines, Med. Coarse, Common)	4 4	Ph. Test Kit—Junior	7 4
Garden Pools (Paul Storer)	4 0	Fry Rins Guppy Food Lge. Molly Fry	2 4	Senior	16 4
Diseases (Rod Gealer)	4 0	Fancy Guppy Food	4 4	Bromthymol Blue Ph. Indicator	4 0
How to Keep and Breed Tropical Fish (Dr. Emmens)	32 0	Guppy Fry Small 1/2 Large 2 3	2 4	Aquarium Tonic (general tonic and remedy)—1 lb. oz.	3 3
All About Aquariums	10 0	Dried Daphnia Small 1/2 Large 2 3	2 4	Anti Chlorine Compound—1 lb. oz.	10 0
The Educational Aquarium	9 0	Salmon Eggs Small 1/2 Large 2 3	2 4	Fungus remedy (colourless and tasteless)—1 lb. oz.	3 3
Your Terrarium	4 0	Small 1/2 Large 2 3	2 4	4 lb. oz.	10 0
Marine Turtles	22 0	Crab Meat Small 1/2 Large 2 3	2 4	Sponox Plant food	2 4, 8/-
Marine Tropicals	12 0	Crab Meat Small 1/2 Large 2 3	2 4	Methylene Blue	4/-, 10/-
All About Breeding Tropical Fish (T.F.H. Publ.)	10 0	Crab Meat Small 1/2 Large 2 3	2 4	Germanin Controls Diseases in Aquariums	4 0
Breeding Aquarium Fish	10 0	Crab Meat Small 1/2 Large 2 3	2 4	Superchlor Removes Chlorine Instantly	5 4
Aquarium Plants	10 0	Crab Meat Small 1/2 Large 2 3	2 4	Al-G-Free Prevents Algae	4 0
Aquarium Hygiene	10 0	Crab Meat Small 1/2 Large 2 3	2 4	Buffer Tablets, Fluoridises neutral water	4 4
Pond Life in the Aquarium	10 0	Crab Meat Small 1/2 Large 2 3	2 4	Fungi Free, Two-way treatment for fungus infections	4 4
T.F.H. PUBLICATIONS 2/- EACH		TETRAMIN FISH FOODS		Tetracare	
Platies and Moon	2/-	Tetramin Staple Food in Tablets Form	3 0	All at 6/6 each	
Tropical Fish Guide	2/-	Tetramin Conditioning Food	4 3	General Tonic, As a regular tonic in the Aquariums	
Beautiful Bettas	2/-	Tetramin Colour Food	4 3	Fluoridise, Aquarium plant and water softener,	
The Tetra	2/-	Tetramin Growth Food	4 3	Blackwater tonic, Reproduces natural tropical soft	
Beautiful Goldfish	2/-	Tetramin Guppy Food	4 3	and water conditions in Aquariums,	
T.F.H. PUBLICATIONS 2/- EACH		Tetramin Marine Staple Food (for Marine Fish)	4 4	fungus stop, Cures white spot, Ichthy and Costia,	
Angels	2/-	Tetramin Staple Food for Tropicals	1 11	Controls Chlorine, Neutralises chlorine contents of	
African Barb	2/-	Tetramin Staple Food for Goldfish	1 11	fresh tap water,	
African Cichlid	2/-	Tetramin Staple Food for Goldfish	1 11	Haarolite, for making sea water for Marine Fish,	
Angel Fish	2/-	Tetramin Staple Food for Goldfish	1 11	4 lb. bag makes 10 gal. 17/6 plus 4/6 p. & p.	
Aquarium Plants	2/-	Tetramin Staple Food for Goldfish	1 11	2 lb. bag makes 5 gal. 7/6 plus 3/- p. & p.	
Argentine Pearl Fish	2/-	Tetramin Staple Food for Goldfish	1 11		
Aquarist Repair Manual	2/-	Tetramin Staple Food for Goldfish	1 11		
Barbs	2/-	Tetramin Staple Food for Goldfish	1 11		
Beginning the Aquarium	2/-	Tetramin Staple Food for Goldfish	1 11		
Breeding Egglayers	2/-	Tetramin Staple Food for Goldfish	1 11		
Breeding Livebearers	2/-	Tetramin Staple Food for Goldfish	1 11		
Catfish	2/-	Tetramin Staple Food for Goldfish	1 11		
Cichlids	2/-	Tetramin Staple Food for Goldfish	1 11		
Danios	2/-	Tetramin Staple Food for Goldfish	1 11		
Decorate your Aquarium	2/-	Tetramin Staple Food for Goldfish	1 11		
Diseases of Tropical Fish	2/-	Tetramin Staple Food for Goldfish	1 11		
Dwarf Cichlids	2/-	Tetramin Staple Food for Goldfish	1 11		
Fancy Guppies	2/-	Tetramin Staple Food for Goldfish	1 11		
DITCHFIELD WONDER SERIES 9/6 EACH					
Garden Pool Construction	9/6				
Tropical Fishkeeping	9/6				
Goldfish	9/6				
Popular Pets and Terraries	9/6				
OTHER BOOKS					
Aquatic Insects	1 4				
Tropical Fishes	2 4				
Live Foods	2 0				
Marsh Gardens	1 4				
FRY FOODS					
Brisa Shrimp Eggs 1/4, 2/-, 4/6, 12/4, 25/- and (5 pc.) 40/-					
Bull Fleckton Culture	2 4 and 5/3				
Infelix	1 4				
Bresiam Fry Grain	1 4				
Liquibry—Egglayers (red), Livebearers (green)	2 4				
ELITE FISH FOODS					
For Tetrapods	2/8 & 5 0				
For Goldfish	2 4				

TACHBROOK TROPICALS LTD.
 244 VAUXHALL BRIDGE ROAD, LONDON, S.W.1

Shirley Aquatics Ltd.

WATER PLANT NURSERIES AND FISH HATCHERIES—Phone: SHIRLEY 13

Stratford Road, Monkspath, Shirley, Solihull, Warwickshire

NOW AVAILABLE—1967 EDITION A MANUAL OF AQUARIUM PLANTS

The International Reference Book on Aquarium Plants

Hard Bound 27/6 post free

(German Translation and Bi-Lingual Editions also available)

GOOD SELECTION OF SALTWATER TROPICALS

TROPICALS FOR CALLERS DISCUS

Green Discus

3" Body upwards from £5 10s. each £10 10s. pair

Blue Discus

4"–5" Body from £20 pair

TETRAS—well grown—

CARDINALS 7/6 ea. 3 for 20/-

BLACK NEONS 7/6 ea. 3 for 20/-

EMPEROR TETRAS 12/6 ea.

ADULT BLEEDING HEARTS 17/6 ea.

ADULT WILD RAMIREZI 17/6 ea.

OZONE IN THE AQUARIUM

is one of the great steps in recent years—
OZONE INTRODUCES ACTIVE OXYGEN
which kills bacteria and burns decaying matter.
Indispensable in the Saltwater Aquarium and of great
value in preventing fungus attacking eggs in the hatchery.

SANDER OZONIZER No. 2
(variable) £12 2s. 6d.

EHEIM POWER FILTER

for MARINE AQUARIA £12 15s. 0d.

for FRESHWATER AQUARIA £11 15s. 0d.

TROPICAL AQUARIUM PLANTS

Crypt. Beckettii 3/6 ea. 4 for 10/-

Lagenandra Ovata 10/- ea. 3 for 20/-

Lagenandra Thwaitesii 10/- ea. 3 for 20/-

TRADE SUPPLIED

NEW TROPIC MARINE

Artificial Sea Salt with Guarantee

5 gallon size 10/- 20 gallon size 40/-

Postage as follows:-

5 gallons 3/- 20 gallons 3/6 40 gallons 4/6 100 gallons 7/6

PLEASE NOTE—All enquiries requiring a reply **MUST** be accompanied by S.A.E. Our premises are situated on the main Stratford-Birmingham road, 2 miles from Birmingham, Midland "Red" Bus No. 150 from Bus Station, Birmingham, passes the door, slight at "The Crown," Monkspath.

HOURS OF BUSINESS—Weekdays 10 a.m.—5 p.m. Sundays 10 a.m.—12.30 p.m.

CLOSED ALL DAY EVERY MONDAY

TERMS OF BUSINESS—Cash with order please. Fish sent by rail. Typical minimum order £7-10s., insulated container and carriage 10/-. Cold water minimum order £3 plus 10/- can and carriage. Plants by post (minimum order 10/-) please add 2/6 post and packing.