

# GOLDY

THE CANBERRA AQUARIUM SOCIETY

NEWSBULLETIN OF THE CANBERRA AQUARIUM SOCIETY

# GUPPY

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MARCH 1964

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THE AUTHOR OF EACH ARTICLE IS RESPONSIBLE  
FOR THE FACTS AND OPINIONS RECORDED

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NEXT MEETING will be held March 3rd at the

GOOD NEIGHBOUR COUNCIL,  
Hut 35, Riverside B, BARTON,  
commencing at 8:00 p.m. sharp

PROGRAMME:

- (i) Opening of Meeting
- (ii) Brief Review of past activities by President
- (iii) Secretary's report
- (iv) Editor's report
- (v) Conclusion of old year
- (vi) Coffee break
- (vii) Election of new committee
- (viii) Close of business

PLEASE COME ON TIME

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FROM YOUR PRESIDENT

I don't know how many of you thought about this month's meeting, but it happens to be our

ANNUAL GENERAL MEETING,

and the election night for a new committee. All positions will be declared open for nominations and such nominations will be voted for in their respective positions.

Several members of your present Committee have held their positions for two years or more, and for the most, would appreciate a spell.

There are many ways in which this Society can still be improved upon, and although your present Committee has worked to the best of its ability, new ideas and helpers would speed up improvements. It is only too easy for members to criticise the Council's efforts in their little groups, but when suggestions are called for, they have nothing to offer.

Fair criticism is never rejected, so let those who work be the first to criticise, and those who criticise should be the first to offer suggestions. All suggestions are appreciated by the Committee and they can then be employed for the benefit of everyone.

The response to the table shows has been disappointing and only one entry was received for the open class of Tetras. It has therefore been decided to repeat this class for the April meeting with the hopes for more entries.

The date for an outing to the coast has been set for Saturday the 14th of March at Narooma. The aim is to collect various species of seafish and to explore some of the immediate surrounding lakes by boat. Further details will be discussed at the next meeting.

The Agenda for the Annual General Meeting will be :

- I. Brief review of past activities and present position
- II. Secretary's report
- III. Treasurer's report
- IV. Editor's report
- V. Conclusion of the old year
- VI. Election of new committee

The Society has assisted you, now it is your turn to assist the Society.

Looking forward to a better attendance than at the last meeting,



Your President, Ron Schimpf.

EDITORIAL :

Every month, when I bash out the names of our members on the old typewriter, it strikes me that I can fit only a few faces to the names. I know that most people, who are unable to attend our monthly meetings, have very good reasons to stay away. All the same the Committee would be very glad if those people in particular would make an effort to attend our Annual General Meeting which will be held in the usual building on Tuesday the 3rd of March.

Our treasurer reminds everybody, that renewals of the subscription are due from next month. If possible you are requested to hand over your £1/./ during the coffee break, next meeting, or to pass your money on to one of the Committee members or send your remittance direct to the treasurer.

Unfortunately I am unable to supply you with the final details of our forthcoming beach outing, as promised in last month's 'Guppy'. If you are interested and cannot come to the next meeting please contact either A. Patis or R. Schimpf. Transport will be arranged, so that nobody has to miss out on that account.....See you in Canberra or Narooma,

Your Editor, Ben van Bockmeer.

## THE SALT WATER AQUARIUM

BY Thea Smits

### POLLUTION

Although there are an endless number of ways in which the water may become polluted, most can be avoided by cleanliness. The first indication of pollution in most cases will be the increase in the breathing rate of the fish.

The following rules should be observed -

(i) No metal of any kind should come in contact with the saltwater. Place a glass cover over the tank, to prevent water, thrown up by the spray of the aerator, from coming in contact with the metal light reflector. As said before, the inside of the frame should be covered with some sort of plastic cement, which will not react to sea water.

(ii) Never use soap or detergent in cleaning out the tank or anything that comes in contact with the water. Any alkali, such as soap, acts as a direct poison, and even a "clean" kitchen pan may contain enough residue to kill overnight.

(iii) Never leave uneaten food or other dead organic material such as dead snails, in the tank. Any uneaten food should be removed after feeding.

(iv) Do not let the tank stand in direct sunlight for any length of time, except perhaps in winter, when a small amount of early morning sun would be beneficial to the fish.

### TEMPERATURE

Maintaining the right temperature for marine fish is not easy. Along the South Coast water temperatures range from 64°F in winter to 72°F in summer; therefore it is advisable to keep the water in the marine tank between these two extremes. The keeping cool of the tank in summer can be quite a problem, as the water in other tanks sometimes rises to 86°F. In a temperature like this a marine fish would experience a shortage of oxygen and die, unless the water is aerated strongly.

As with tropical fish, salt water fish should not be subjected to sudden drops or rises in temperature, as when changing from one container to another.

#### EVAPORATION

Only pure water evaporates, leaving the salts behind, so that in order to establish the original salinity, we have to add fresh water till the level is the same as before evaporation started. To help you know the exact level, it is a good idea to put a bit of sticky tape on the glass.

#### AERATION

The proper exchange of bases in the water is a way of avoiding pollution. It has been proven that an accumulation of CO<sub>2</sub> affects the ability of the blood to carry oxygen. This means that even with sufficient oxygen present in the water, the fish may suffocate if there is an excess of carbon dioxide. CO is extremely slow to pass out of solution, while oxygen enters water with comparative ease. Therefore the most important aspect of aeration is that it helps remove carbon dioxide from the water. An air-stone hung low in the tank should be used to break up the air into fine bubbles.

\* \* \* \* \* (to be continued)

#### H I G H H O B B Y

Tropical fish keeping has reached a limit in Australia in height, and this Society can proudly proclaim to have fostered this hobby to the limit, to the highest township in Australia: CABRAMURRA. The carriers of the banner for this feat are our new members Mr. & Mrs. J. Guenther. To pass those cold short days and long wind swept nights in the 4880 ft above sea level Cabramurra, John decided to keep tropical fish.

Having been interested in this hobby for some time, he went ahead and bought a complete outfit on one of his trips to Sydney. A 36" aquarium and stand is now located in a corner of the living room opposite the entrance and has been made into a very attractive furniture piece.

After much discussion of how and but, everything was prepared and ready for the introduction of the first fish, but this had to be delayed, much to their two children's disappointment, owing to an apparently faulty thermostat in the heater. John's family, and visitors to their home alike, wondered if they were ever going to see fish in this tank. Hopes were revived when our president arrived one night after a 68 mile journey over mountain roads with a new heater and some fish. The sight of the fish resparked the somewhat dulled interest, and with the arrival of guests later on in the evening the aquarium was the centre of attention.

A nice collection of white and perforated coastal rocks and the use of various plants has given the aquarium that 'exotic and mysterious' look. A few hints were given on ways to improve on the appearance of the aquarium in general and these have already paid dividends. John is not alone in this venture, but is strongly assisted by his wife who is just as keen. Since the introduction of fish, they have happily reported very clean water and a prolific plant growth.

So with the temperature slowly creeping to 14°F below freezing point in the winter, the Guenthers will be entertaining themselves and their friends with the wonders of tropical fish, instead of T.V.

And with that go our best wishes for their success.

Co-Editor

THE BLACK NEON TETRA, HYPHESSOBRICON herbertaxelrodi

by R.G.V. Schimpf

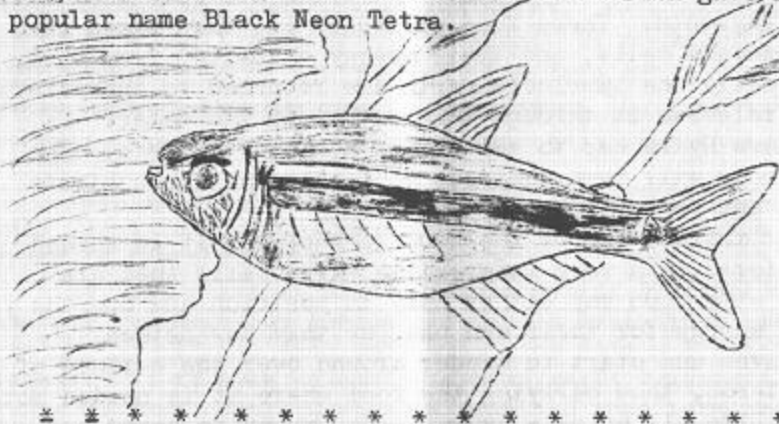
In order to obtain more information about a fish known to most of us only as the new 'Black Neon' and available in limited quantities at exorbitant prices, I sent a letter to Mr. W. Vorderwinkler of T.F.H. in the U.S.A. The purpose of the letter was to ascertain its Scientific status, its discovered and locality. A reply followed shortly, giving me much of the required information.

Discovered by Karl-Heinz Stegeman in 1960 in the Paraguay Basin, the Black Neon soon found its way into hobbyists' tanks. This fish was found in the Rio Taquary river near Coxim in a lot of other fishes, most of which were less colourful than the Black Neon. The colouration could remind one of the 'metae group', with the upper part of the eyes flashing an irridescent glint. Little colour can be seen in the fins and tail rays except for the dorsal which has a slight rosy touch. A broad black lateral line, running constant from just behind the gill covers to the caudal base, ends in a very conspicuous triangular-shaped spot. Immediately above the black line emerges a golden luminous band, also starting behind the gill covers, but tapering to a fine line towards the end and finally disappearing in the caudal base. The underside of the fish is light in colour, which in turn really offsets the black band above this area. Differences in sex can only be determined by the fullness of the body, which makes it hard, as this fish has already a plump body and a short and heavy head.

The price of the Black Neon has fallen tremendously due to overseas hobbyists, where this fish is now bred in medium quantities. Good sized fish can now be obtained at approximately 7/6 compared with the kick-off price of 30/-. As a community fish the Black Neon adds brilliance in colour to the tank and in liveliness it surpasses many of our other Tetras. No special conditions are required for

its healthy existence and the usual pH value and low temperature will show it to the best advantage.

Although this fish was discovered by Karl Stegeman the title 'Black Neon' must be attributed to Harald Schulz, who, when he first saw this unidentified fish gave it the popular name Black Neon Tetra.



HYDRA IV

by J.B.M. van Bockxmeer:

Countless Daphnia, mainly due to their erratic movements through the water, fall an easy prey to Hydra. Although the nematocysts are only tiny one-celled structures and the Daphnia are in comparison rather large animals, they are doomed once they accidentally brush against a tentacle. In its struggle to free itself, Daphnia causes more penetrants and volvents to discharge. More and more poison is injected into the tissues of the stricken animal and more and more volvents twirl around its bristles, thus ensuring that it will not escape. After a while the animal becomes paralised.

From the numerous wounds a body fluid escapes, that contains glutathione. This fluid acts on Hydra as a hormone. As soon as this fluid stimulates certain receptor cells near the mouth, they send out nerve impulses through the body and the tentacles shorten and

curl over towards the mouth, which then opens widely to swallow the still living prey. Once ingested into the enteron (the cavity formed by the walls of the body acting as the gut) the endoderm cells produce digestive juices that kill the Daphnia and break its body down into tiny fragments. These food particles are then taken into the endoderm cells, and their energy extracted from them, and finally the insoluble parts are returned to the enteron, which releases it through the mouth into the water. Sometimes Hydra has to get rid of a sizeable piece. The whole body will then contract violently and the contents of the enteron will be shot out.

Distribution of the food to wherever it is needed is achieved in a very interesting way. Cells that are loaded with food may either stay in position and use the stored energy for their own use, or they may detach themselves and start to wander around over the surface of the enteron, thus carrying the food where it is needed more.

Like all animals Hydra needs oxygen to carry out its life's processes and being carnivorous creatures, they produce great quantities of carbon dioxide, ammonia and other waste products. The first two chemicals mentioned combine to form ammonium carbonate that is difficult to dispose of for the enteron. It is common to find whole colonies of unicellular algae (plants consisting of a single cell) living in symbiosis in Hydra's gut. The algae, being primitive plants, live on the ammonium carbonate and other salts produced by Hydra and give off oxygen, that is gratefully absorbed through the enteron. Thus it seems that the enteron doubles both as gut and as 'lung'.

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HYDRA REPRODUCES ITS KIND ASEXUALLY AND SEXUALLY

ASEXUAL REPRODUCTION

During the summer months, when food is plentiful, Hydra may develop a lump, caused by the rapid growth of both the ectoderm and the endoderm at one point. This protuberance contains a small part of the enteron. It grows and becomes elongated and forms tentacles at its free end. Finally the mouth appears and the young Hydra breaks loose from the parent, floats to the surface of the water and sets out in search of food.

This type aids the dispersal of the animal, but lasts only for a few days. The common way of reproduction for Hydra is the sexual way.

At this point it might be interesting to mention Hydra's unusual regeneration power. If cut in half Hydra will restore itself and each half will grow into a complete animal. It is even possible to make small fragments of Hydra re-form complete animals provided that both the ectoderm and endoderm are present.

It is this remarkable property, that lead eighteenth century biologists to name this animal 'Hydra' after the famous monster of Lerna. The old Greek legend has it that one of Hercules' twelve works was to kill Hydra, the snake with the nine heads. Now every time the poor fellow managed to cut off one head, two new ones would sprout up. Our eighteenth century biologists took great delight in severing Hydras at their monthly meetings, just to see how little of Hydra was required to grow a new animal . . . .

SEXUAL REPRODUCTION

Although Hydra is hermaphrodite, i.e. produces both spermatazoa and ova, self fertilization is prevented due to the fact that the male gonads mature before the female gonads are ready to receive the sperm.

In the earlier stages both types of gonads resemble each other closely in that both consist of a mass of small rounded cells. However, during the later stages these small cells in the testis divide rapidly and become many spermatazoa; in the ovary on the other hand only one ovum (egg) develops at the expense of all the other cells present.

When the spermatazoa are ready to be released - this is in the autumn - the ectoderm surrounding the sperm cells bursts and literally thousands of spermatazoa swarm out in search of ripe ova. They are partly carried to their destination by the water currents and partly find their way by wriggling their little tails. As is the case with all animals belonging to the metazoa only one spermatazoon is required to fertilize one egg. As soon as the ovum is fertilized, it commences to divide and forms eventually a tight ball of cells with a tiny enteron. The ectoderm of the adult Hydra secretes a horny cyst around the embryo and this drops from the ovary and settles in the mud on the bottom of the pool, to remain there inert until the following spring.

With the advent of more clement weather, the pool swarms up and a tiny hole appears in the cyst, tentacles develop around it and presto a new Hydra sets out in search of food, thus starting the cycle all over again in the familiar way of nature.

T H E   E N D

Bibliography:

'Animal Biology', by A.J. Grove and G.E. Newell  
'How to Breed and Keep Tropical Fish', by Dr. Emmeno  
Encyclopaedia Britannica - Various Articles  
'In Sloot en Plas', by E. Heimans and J.P. Thijssse.

Acknowledgements:

The drawings and most of the information, contained in the last two instalments were taken from the first book, mentioned in the bibliography. I thank Ron Schimps for the patience exercised by him while he transferred the drawings onto the stencils.

B.v.B.

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