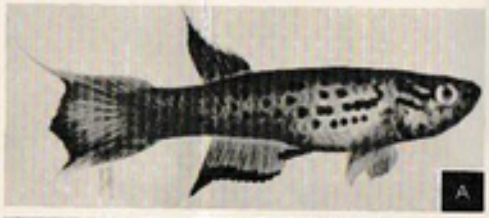
BRITISH KILLIEFISH ASSOCIATION

MAGAZINE

A HALF YEARLY PUBLICATION



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CONTENTS

Aphyosemion Australe

These fish are found in French equatorial Africa and can grow to a length of two and a half inches.

Aphyosemion Australe is perhaps one of the most beautiful of all the Aphyosemions, (see Fig. A) the body colour is a rich golden orange sprinkled with red spots, the lyre shaped tail is gorgeous, two maroon bands enclose a royal blue centre which is prinkled with darker blues spots, the outer edges are white and extend into long points, dorsal and anal fins are orange towards the body with maroon edges and white tips which are extended in good specimens.

To breed this fish you must pay particular attention to water conditions, they prefer very soft peaty water to which has been added a small amount of salt. Oxygen requirements are low, therefore breeding tanks need only be small; I often use round hard plastic storage bins obtainable from Woolworths.

The bottom of the tank should be covered with a thin layer of peat or lime free sand and filled with soft rain water then left for a week or two, after this time put in two nylon mops and then the fish, they should soon settle down and start to breed. The eggs take about 14 days to hatch and a few are laid each day and since the parents spawn over a long period of time they will still be laying eggs when the first days spawn is hatching out, therefore the parents should be removed on the 12th day. The fry are quite

large compared with most egg-layers, being able to take brine shrimp and micro-worms straight away, and by the 2nd week they should be able to take sifted daphnia.

The original breeders can be moved several times into different tanks before the females cease to spawn.

J. Collett. B.K.A.No.24

CYNOLEBIAS IN THEIR NATURAL ENVIRONMENT

by Isaac Sternshein, Argentina

These Cyprinodontidae are always found in small temporary pools near the great masses of water i.e. Parana and Uruguay rivers also the Rio de la Plata.

The area they inhabit, extends over two million square kilometers, and this we can divide into six zones.

A. Ceara (North East Brazil)

CYNOLEBIAS regani
" antenori

B. Baixa da Fluminense (Rio de Janeiro, Brazil)

CYNOLEBIAS schreitmulleri
" constancino
" whiteii
" opalescens
" splendens
" minimus
" marmoratus

C. Santa Catarina and Rio Grande do Sul (Brazil)

CYNOLEBIAS carvalhoi
" adloffii
" wolterstorffi
" melanotaenia

D. Parana (Brazil)

CYNOLEBIAS cucuguttatus

E. Province of Buenos Aires (Argentina)

CYNOLEBIAS bellottii
" gibberosus
" robustus
" holmbergii
" nigripinnis
" spinifer
" perosus
" oleagutus

F. Uruguay

CYNOLEBIAS bellottii
" nigripinnis
" adolffii
" wolterstorffi
" melanotaenia

Whenever, the same species occur in two zones, it is because climatic conditions are the same.

Vegetation in these pools consists of mostly: Mitcall, Echinodorus, Ceratophyllum, Elodea, Bacopa and Heteranthera. The bottom is soft mud, finely grained, often with cow or horse excrement from live stock, who drink from these pools. They are usually about 50 metres long by 5 to 16 metres wide and some 80 cms. deep. Other fish that inhabit these pools

along with the CYNOLEBIAS, are Curimatus, Cheirodon interruptus, Chesterodon decemmaculatus and Corydoras paleatus. Their natural food consists of Mosquito larvae, Gammarus, Cypris, Cyclops, Diaptomus and Daphnia (Figs. B4C. A Typical Pool where the author is seining for Cynolebias Bellottii.)

Temperature varies with the season. The average range is from 37°F to 77°. the P.H. varies continously from 5.5 to 7.0. The hardness of the water varies from 1° to 7°.

Vital Cycle

At the end of the winter the fish have reached sexual maturity. Generally the females are ovulated before the males show the slightest signs of sexual excitement. They lay one egg at a time. The male faces the female below him, and they bury themselves in the mud until only the male's tail is visible. The egg is buried in the mud. In the summer the pools commence to dry up. There is less water, and of course overcrowding increases, the food supply diminishes and I believe these are the factors which are responsible for the short life span of these fishes. We do not agree with the literature that speaks of the annual character of these animals, as Cyn. Bellottii have been kept, living for two years or more in tanks.

The eggs have filaments, by means of which they can adhere to the mud. Then comes the drought. With the start of the rainy season, the young fry hatch and then force their way through the mud to reach the water.

As the alevins are born without a yolk sack they start looking for food within a few hours or reaching the water.

Handling in Tanks

The substrate we use instead of mud is peat, this is spread over the tank bottom to a depth of 3cm.

One male should have two or three females and if fed well, they will spawn almost continuously. After about two weeks we harvest the eggs by siphoning out the water (first netting out the fish) leaving only the peat and then covering the tank (which need only be a small one) with glass. As moisture condenses on the walls we dry it with a cloth, until the peat has a consistency like pipe tobacco. We then either incubate the eggs in the tank (if so this must now be sealed) or by transfering the peat to plastic bags or small glass containers The ideal resting time is three months at least. If hatched earlier the percentage of belly sliders will be very high. If the eggs have been correctly incubated, they should hatch two or three hours after adding rain water to the peat. Sometimes it happens that a very low percentage hatch, or if many belly sliders result, then the whole process of drying out is repeated. Store the peat as before and try hatching again in one months time.

Editors Note: Parts of this article have been reproduced from the American Killifish Association Jornal with their kind permission, the remainder being from the Authors original manuscript.

KNITTED SPAWNING MATS

For those members who did'nt attend the 1965 BLF Show and therefore missed Lol Greenalls' short but entertaining talk, on this rather unusual method of spawning and incubating bottom spawning species eggs, here is a brief resume of the main points:-

First the mat itself. This can be made to suit your own requirements i.e. to fit what ever size of breeding tank you are intending to use. It should be knitted out of 100% white nylon wool, the actual knitting neednot be exact and a few dropped stitches could in fact be quite beneficial.

A short time ago my wife made one of these mats for me, so the following is a description of the pattern she used (Size of tank to be for spawning was 12" x 6" x 6", Size of needles used optional but my wife used as follows:-

as a mosquito control species and was named after the well known ichthyologist Dr. George Myers.

This fish when in breeding hue is a sight to behold, this fish is also quite large for an annual species it has been known to grow to 4.5 to 5". They first start to breed when 1" to 1.5 long, the male is usually larger than the less colourful female but they grew very quickly, care must be taken when breeding as the male can be very boisterous and considerable damage can result.

The Description

The male's body colouration being, light tan to olive green with a large mottled head and body, this mottled appearance filtering to green and gold spots towards, and e extending through to, the caudal peduncle. This pattern even continues half way to the caudal fin. The caudal has large extensions, top and bottom lobes, main colour being metallic green, edged with black. Many more extensions develope with age, giving the appearance of a comb tail.

The pelvic fins are large and lyraddle shaped, colour is absent in these. The dorsal and anal are pointed extending half way along, the caudal giving the fish a streamlined appearance. The anal fin being a rich tan with green edges, a black bar extends from the head through to the eye(See Fig. E.)

The females being similar in shape is pale, the fins in all cases are rounded, she lack any really striking marks, but one good point is that the fins are never folded, even when resting.

Breeding

The breeding tank need not be large 18" x 10"x 10" being quite large enough. The spawning medium used is well washed silver sand, this can be put in a container (e.g. a hard plastic sandwich box about 8" long by 3" wide), the

depth of sand to be at least an inch. This is placed in the aquarium, a nylon mop is used as a refuge for the female. The water used to be soft and slightly acid, this is not too important, depth 8 inches temperature 75°F.

Egg Collection

Egg collection is best done with the aid of a glass rod, the sand is gently stirred up, the eggs being lighter than the sand will float to the surface and can be dip tubed out, an alternative method is to filter the silver sand through a fine mesh net or sieve, the eggs remaining behind. The eggs can be collected once a week, in all cases keep the female well fed while spawning, and see also that she has conditioning periods, about every three weeks.

The eggs are placed in a salt solution for the first ten days, this gives the eggs a chance to develope in the first stages and cuts the chances of fungus attacking the fertile eggs, any that turn white should be removed before they are partly dried.

This drying out period is done in well washed and boiled peat, this to be pressed until as much moisture as possible is removed, in other words until, as the books say, like moist tobacco. The eggs plus the peat are kept in a sealed plastic bag, this stops the peat from drying out completely, at 4 months they can be inspected to see how far they have developed, some may be ready for hatching. These have a gold ring round the eyes, others may not show this form of development and are known as resting eggs. This, in my opinion and the opinion of others, is nature's way of preserving a species. If in nature the rains started, or a freak storms, when the pools partly filled the fry may hatch only to die if the pool dried out again. The resting eggs have to be left until such times as the development continued. The eggs that are ready are placed in soft water, rain water being very satisfactory. Within a few hours they hatch and are free swimming straight away. The fry are large and are quite large enough to take brine shrimp as a first food, later grindel worm etc.

One word of warning here, large batches of these cannot be raised together, as the males, once they develop fight like male fighters, so beware.

Paul Stokes. B.K.S. No.1.

CONSTRUCTING A FISH HOUSE

We did not have these exotic fish in mind when we constructed our fish house, but as it happened it has proved ideal for them.

The fish house is a wooden shed 10" long x 6" wide with a flat roof, at the highest point it is 6' x 6", sloping down to 6' at the lowest.

There is only one window, this is in the highest side and is 3' x 1' 6", we feel this is ample, as we find Killiefish breed better in subued light. The door is also on this side and is 6' 6" wide. The shell was erected on a base of concrete slabs, these were made really firm and level having in mind the weight of tanks and water they would have to support. After erection the first step was the insulation and this was given a considerable amount of thought, as it is in our estimation, the most important item.

We initially covered all the interior surfaces, including the floor with roofing felt secured with drawing pins. We then covered the floor with half inch expanded polystyrene sheeting on top of which we laid sheets of half inch Asid board, this is board made of compressed sawdust. The roof and sides were covered with half inch expanded polystyrene sheeting secured with the correct adhesive sold for this purpose.

The polystyrene was cut to fit in between the uprights. This was then covered with (Cosy Wrap) fibre glass roofing insulation again secured with drawing pins. At this point we decided to do all the electrical wiring and so run cable to all the plugs switches etc., this was done so that

all possible cable could be hidden. Over the whole roof and sides we now screwed and nailed Fibre board, this is compressed cardboard approximately half an inch thick, one surface having a smooth finish, the joints were covered with adhesive tape. For extra insulation we double-glazed the window and covered the ceiling with expanded polystyrene tiles. The plugs switches etc., were then connected up, and finally the interior was given two coats of pale green emulsion paint. The floor was covered with a fitted carpet, and this led to our fish house being called a fish hotel. For heating, we, at first used a convector heater thermostatically controlled, but we found the lower tanks were too cold and so changed to a 1.5 K.W. Fan Heater. This has proved very efficient, and fairly cheap to run costing approximately 10/- to 15/- a week. The tanks and stands were then installed. The stands were made from Rexion steel angle bolted together to form racks. On these various sized tanks were placed, these being arranged so that those needing the most light were placed nearest the window. Before introducing any fish we carried out a test of our insulation. We switched off the heater one night for 12 hours, and found that the temperature of the fish house had dropped only 10 degrees, whilst the tanks themselves had only lost 5 degrees, this test was made with 3" of snow outside. We are now in full swing having various Killiefish breeding and as I have said it has proved ideal. Finally for working in the evenings we have installed a 5' strip light and this, and any other lighting we require over the tanks is controlled by a time switch. Who said Fish Hotel? Perhaps they were right.

Ken & Terry Payne B.K.A.No's.9 &

A FEW NOTES ON SOFTENING WATER

The softening material is know as Zeo - Karb, the correct title when ordering is:- ZK. 225 Softening Material No. 20/2. It is sold by The Permutit Co. Ltd., Permutit House, Gunnersbury Avenue, London, W.4. The cost is 8/- per pound plus 1/- per pound for postage and packing.

Normally a couple of pounds is more than ample for most softening needs. I have found that a quarter of a pound of Zeo-Karb will soften 12 - 15 gallons with a hardness reading of 18 degrees (Clarkes scale) down to 4 degree (Clarke scale) overnight, and that the same quarter of a pound of used softening material could be re-activated in the same period of time by passing a salt water solution through it, using a gallon of water to which four table spoons of cooking salt had been added.

The actual methods used to soften the water are many and it is best left to one's mechanical ingenuity. I use the clear corner filter to hold the softening material but before it can be used, nylon wool must be placed in the bottom of the filter to prevent the loss of the material, the grains of which are very small. It can be contained in a brine shrimp net or sewn into nylon bags which can then be easily removed without disconnecting the filters in the tanks, and placed in another filter, ready to be re-activated in a large jar of salt water.

It must be remembered that before using, the softening material should be rinsed with cold water, on receiving it from the suppliers and after re-activating in salt water.

Before finishing I would like to wind up this article by saying that the above times and quantities are only approximate and a rough guide to the usage of the softening material.

J. J. Coleman.B.K.A.No.76.

RIVULUS HARTI

A lot has been said about the Rivulus species,being a drab and uninteresting fish that I must write about a Rivulus, that has proved colourful and most interesting to my mind at least.

The colours can vary to almost any mood the fish is in the females are also most variable in body and spot variations

that at times they are hard to distinguish. The fish themselves are known to inhabit waters (either pools or small ditches) in parts of Venezuela and in small islands close by. I find the colour intensifies when the fish are kept at a low temperature, i.e. 68° F., and in a darkish position, but a lot of the literature states that they like a warm sunny position, where they can sun themselves. This may be true but I do find that they adapted themselves to almost any conditions. All Rivulus are known for the bad habit of jumping from one aquarium to another, in my case I have not been quite so lucky, the fish that have found their way out of the aquarium, have been found next morning dried up on the floor.

The main body colour can vary from yellow to a brilliant green with rows of brilliant red spots, these give us the appearance of rows of red and green lines throughout the body. The anal and dorsal fins are well back on the body making the fish more of a surface feeding fish (see Fig. F), but they will take food in all parts of the tank, even dried foods. The caudal centre is dark with edges white to orange bordered,with tips of black that gives us the feeling of a really well spread fin. The dorsal and anal are green with red stripes.

The females are a little smaller than the male but quite colourful, being reddish brown with darker spots throughout the body, ending at the caudal peduncle, this fish also has the Rivulus spot at the base of the caudal fin, the anal can have a tint of orange and the caudal takes on this hue at times. Males of these species fight, I remember trying to take photo's of these fish in a small aquarium and the only way I could get the fish to display was to introduce another male, then the fun began, the males displayed with fins outspread, gills were extended in full battle cry if that is the expression.

The Rivulus pose - this is a position that most of the larger varieties take on when resting, the body is curved giving the appearance that the back bone is bent.

They can lie in this position for hours on end, and then like lightning dart after the food. The Rivulus lay many eggs both in the water and out, by this I mean that some of the eggs are pushed out of reach above the water line, indeed one person in Sheffield said that he had even seen them spawn on a piece of wood above the water line. This may be true, as after the fish have spawned, the eggs are pushed upwards on to the cork if you use nylon wool with cork attached. They have one fault that they lay an egg known as a sticking egg, this does not hatch after the incubation period which is normally 14 days, these eggs have to be released by the aid of micro worm or by the use of a sharp stream of air from the air stone, in other words they are hatched by vibration, this applies to the micro worm as well I think.

Conditioning periods are needed as a pair can lay over a hundred eggs per week, the females need rest periods every month to keep them in good condition, they are also long lived fish. I have pairs that are over two years old and spawning well.

The young are always large and easy to raise so why not try one of the colourful Rivulus? There are nearly two hundred to choose from.

Paul Stokes B.K.A.No. 1.

PEN PICTURE

PYGOMELOMA, NOTOBRANCHIUS, AUSTROFUNDULUS in your fish house? Perhaps, but have you a PYCNOCTENUS FLORESIENSIS GUNTHERI? Before you go rushing off to your local shop or thumbing through SUPERA I had better explain that this is the Latin name of the Pan Footed Gecko.

Norman Snelling is a B.K.A. member who, like us all, is a keen Killie fanatic but, also has very strong interest

in snakes, lizards, frogs, toads and in short he is a keen HERPTOLOGIST, and a visit to his fish house is full of surprises. Two GECKOS have the run of the fish house as I found out when visiting him recently. I was admiring a fine pair of APH. VENUSTIPES when I saw a large pair of blue eyes staring at me from the side of the tank, I was prying into the private hiding place of one of the GECKOS. Norman advised me not to extend a finger near in case it was thought to be a large mealworm.

Normans particular interest in the Killie line is the RIVULUS Species, at the present time he has R. HARTI, AGILIS, STRIGATA and UTRICULUS. The Trio of AGILIS are particulary fine fish and they occupy one tank with numerous off-springs ranging from PEA to quite large youngsters.

Most aquarists have their own pet idea and Normans is to use 'Black'gravel as a base in his no - breeding tanks. The gravel which can be obtained from most pet shops quite cheaply is really glass and as such, does not affect HARDNESS or acidity of the water. The black base very much enhances the colour of the fish.

Norman also is a great believer in segregating the pairs when not breeding so most of his tanks are partitioned, however he finds that most males soon become adept jumpers and a pair divorced last thing at night are likely to be found reunited by the morning.

The latest addition to the Killie collection is A. CHRISTII, two large pairs of a fish that once established should become a firm favourite amongst us. They are similar in coloration to the A. CONGATUM, but do not appear to be as delicate as the A. CONGATUM nor as liable to mouth fungus.

In conclusion the fish house like most, is double lined, some time ago a large BOA CONSTRICTA escaped from its VIVARIUM. Norman believes its in the false wall somewhere, growing larger on stray mice that are attracted by the warmth of the fish house. One-day the BOA will re-appear and perhaps Norman will disappear. Still at least it will make a novel entry in the B.K.A. Newsletter even if it depletes our members by one.

John Open B.K.A. No. 62.

SOME SPECIES AND THEIR HATCHING TIME

ABBREVIATION: T = Top.in Peat moss B = Bottom in Floating Plant or Nylon Mops. A = Anywhere. D = Day. W = Weeks.

NAME:	LAY EGGS:	NORMAL HATCHING
Aplocnius:		
iberus	T	10 -,12 D.
mento	T	10 - 12 D.
fasciatus	T	10 - 12 D.
Aplyosemion:-		
arnoldi	B	5 - 6 W.
australe	T	15 D.
bitaeniatum	T	15 D.
bivittatum	T	15 D.
bouaforti	B	4 - 6 W.
calabaricum	A	15 - 20 D.
coeruleum	B	6 W.
cognatum	T	15 D.
filamentosum	B	4 - 6 W.
christyi	T	15 D.
gardneri	B	5 - 6 W.
gulare	B	5 - 6 W.
labarrei	T	15 D.
lamberti	T	14 D.
B.multicolor	T	15 D.
nigerianum	A	15 D.
b.splendopleuris	T	15 D.

 To be continued..


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F

BRITISH KILLIEFISH ASSOCIATION SIX MONTHLY MAGAZINE

The objects of the British Killiefish Association shall be to the study of Aquatic Life pertaining to the preservation of Killiefish by propagation.

All articles published are the Authors own personal experiences and views, any queries regarding such articles should be directed to the Author concerned personally rather than to the Editor.