

Aphyosemion

Basic Care and Breeding

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The genus *Aphyosemion* holds those killies that form the staple of the killifish hobby. It houses those bread and butter species such as *A. australe*, *Fundulopanchax* (ex *Aphyosemion*) *gardneri* and the various *Chromaphyosemion* (ex *Aphyosemion*) *bivittatum* strains. From the latter, it can be seen that the nomenclature of this genus is a mess. It has come under revision as of late by many different people who insist on using different names. The only five valid genera are *Aphyosemion*; *Archiaphyosemion* (the old “*Roloffia*” species such as *guineense* and *petersi*); *Callopanchax* (“*Roloffia*” species such as *occidentale* and *toddi*); *Fundulopanchax*; *Chromaphyosemion* and *Scriptaphyosemion* (“*Roloffia/Aphyosemion*” species such as *geryi* and *liberiense*) (Huber, 2000); with *Diapteron* (the *cyanostictum* group), *Kathetys* (the *exiguum* group), *Mesoaphyosemion* (the *cameronense* group) and *Raddaella* (the *batessii* group) being valid subgenera of *Aphyosemion* (Korzen, 2000). Regardless of the name, they are still the same colourful, charming little fish (normally). The below is a rough guide on how to care for these stunning and eccentric fish.

What type of tank you need

A small tank of about 30 cm (15 L) would be adequate. A larger tank of about 46 cm (38 L) would be better. A deep tank (30 cm or more) seems to inhibit jumping. My tanks are quite shallow with the result that the leading cause of death with my Aphyosemions is them jumping out! A good lid, with no gaps larger than 2 or 3 mm is **essential!**

Plants also help out a lot in making them feel at more comfortable. I use Java fern and *Anubias* tied to a piece of wood. I stay away from Java moss and other fine leafed plants other than *Riccia* as I collect eggs. *Cerretophyllum* and Indian fern work well for floating plants in place of the *Riccia*. Java moss works well for spawning in permanent set ups.

For filtration I use sponge filters. These create a fair current but don't push the fish around. They are also very efficient. These work well and are very efficient. I stay away from box filters as they can suck up fry.

I also don't use a substrate for the tank but instead paint the bottom of the tank black or brown (on the outside naturally). This is the main reason why I use the Java fern and *Anubias* as they can grow on a piece of wood happily. The main reason for the lack of substrate is for an ease of cleaning (especially siphoning off uneaten bloodworm and the like). Regular water changes are beneficial (as always) for growth and over all health.

In regard to lighting: this isn't too critical. I use bright florescent lights with no problem. Aphyosemions prefer subdued lighting though. The temperature is best kept from 20° C to 24° C.

The temperature can drop to about 18° C but temperatures above 26° C are to be avoided. Temperatures above 30° C will cause them to stop eating go into shock and die.

A slightly acidic pH is preferred as well as soft water. Some shell grit can be added to the tank or filter in the growing tank to help stabilize the pH and keep calcium and magnesium levels high enough to prevent bone deformities as well as to prevent too skew a sex ratio (harder water = more females compared to males).

To expand on the latter issue on sex ratios: research on *Apistogramma* species would indicate pH and temperature being a key factor in sex determination (Lieber, 1997). However, I have noticed with my *Haplochromis* that in soft water I get a very high proportion of males as compared to the ratio when the tank is buffered with some CaCO₃. It is also interesting to note that a high pH often goes hand in hand with the presence of calcium in the water. The truth may lie somewhere in between. I get even sex ratios with my *Aph. australe*. If you find your self getting skewed sex ratios play with the pH, temperature and hardness and report back on what you find.

What to feed them

They will take flake! High protein flakes are best, but a good vegetable based flake given frequently will do them the world of good.

I feed mine flake in the morning and evening. In the morning I supplement it with frozen or live foods such as bloodworm, mosquito larvae (black or white) or frozen brine shrimps. I stay away from brine shrimp nauplii, as it tends to stimulate the growth of hydra. Tubifex or any other safe live food would be adequate.

For good egg production live food is essential.

How to breed them

The fish will see to this themselves. All you have to provide is the right conditions and act as a marriage councilor on occasion.

The Aphyosemions are divided into bottom and top spawners. Then there are the switch spawners which spawn both near the bottom and the top. This group consists of most of the *Aphyosemion* and *Fundulopanchax* species such as the *australe* and *gardneri*. *Callopanchax toddi* and *Fp. sjoestedti* would be a typical bottom spawner while *Chromaphyosemion bivittatum* would be a typical top spawner.

For *A. australe* a temperature of 24° C triggers spawning. The male can be very active and can hurt the female if she is unreceptive. I spawn a pair over a five day cycle. For two days they spawn, and for two days I keep the female separate and condition here. This applies for pairs. If spawning in a group this harassment problem will not occur, as the males will be preoccupied with each other. This same care can be given in regard to other Aphyosemions such as *Fp. gardneri*. From one pair of *australe* over two days I normally get between 20 and 60 eggs.

The choice of spawning setup depends on your intentions. If you intend to collect eggs, mops are best. To make a mop, buy some wool (preferably synthetic with acrylic being the best). Wind the wool around a book or something with a width of about 20 cm. Wind it about 30 to 50 times around. Tie one of the ends together with a piece of wool by tying a piece of wool around that which you have wound around the book. Cut the opposite end so you get a nice balanced mop. Tie the mop to a piece of cork or Styrofoam to make it float, or to a stone to make it sink. Place both

sinking and floating mops in the spawning tank. Pick the eggs every second day, as they can be soft when first laid and then damage easy.

You can either put the eggs on some damp peat in an airtight container, where they will develop normally but at a slower and more uniform rate. Using this method, the staggered hatchings can be limited, as the eggs will sit for up to a week eyed up. Instead the eggs could be put in a shallow tray with an added antibiotic medication. I use Protozin[®] with good results. Another good product I am presently using (Protozin being a bit too expensive now) is Tetra's Fungistop. For eggs with long water-based incubation this can be dangerous as the acriflavine in the medication can harden the chorion of the eggs preventing the fry from hatching. I get around this by doing a total water change one week after the eggs have been added. At this stage all the eggs will show development and the threat of fungus is almost zero.

The eggs can be picked by hand from the damp mops. When in the water it is best to handle them with a pipette or some other device, which can gently suck up the eggs.

Most Aphyosemions will spawn in peat as well. This is the choice medium for members of the *Fundulopanchax* genus like *Fp. gardneri*, but even *australe* will spawn in peat if given the option. This method is best used if the parents are suspected of eating their eggs. The fish can't find their eggs in the peat meaning that the eggs are kept safe. To harvest the eggs, remove the peat after about a week. Pour it into a net and give a gentle squeeze to wring out the water. Place it on newspaper for a while, till the peat looks wet but water doesn't ooze freely from it when picked up or gently squeezed. Put the peat in a plastic packet and keep it at about 24° C for three to four weeks and then wet it. The peat must be well washed (with baking soda) before use and not be too wet or it will turn anaerobic while being stored. For the latter reason, it is also best to put the peat into the tank in a bowl away from the feeding area. Any food falling into the peat will foul it.

Most Aphyosemion species' eggs can be stored in peat for about 4 weeks as compared to the 14 to 21 days needed for water incubation. Some, such as the bivittatum-complex species will only last a week or two. *Fundulopanchax* eggs take between three to six weeks in water or peat as with members of the Sjoestedti group. *Callopanchax (toddi and occidentale)* species need to be stored for up to seven months in peat!

Breeding *Diapteron* can be troublesome. The sex ratio tends to more males and very few females; and the fish mature late and grow slowly. On top of this females are not very productive. They are stunning little fish and well worth the effort (Kadlec, 1996).

How to raise the fry

Raising the fry is the easy part. They will gobble down brine shrimp nauplii from hatching and will grow quickly.

The only problem is that due to the sequential nature of the eggs hatching, you will end up with fry of various sizes. The larger fry will eat the smaller fry always. To circumvent this problem the peat spawning method can be used with good results. Alternatively, you can use ice cream tubs (2 L kind) to raise the fry in till they are about 1 cm long. At this point the size difference between the fish won't be so large as their growth has begun to slow. The water in these tubs will need to be changed regularly (25 to 50% every second day) due to the lack of filtration. It is best to move

them on to a larger tank as soon as possible. As they begin to grow you can start to offer them flake foods and other foods large enough to swallow.

While I have never had problems with velvet amongst the fry it is best to be on the look out for this disease. The best course of action is to perform a water change and clean up the tank. Some salt should then be added (1 teaspoon per 4 L). Stay away from copper containing medications. Malachite green seems to work well as does formaldehyde at 3 "drops" per liter, but this could be hazardous to the fry.

In three months the fry will be mature fish capable of spawning. Good egg yields will only be seen from about six months of age.

In the case of *A. australe*, for the males' caudal fin filaments to develop fully it is best to isolate them from each other. When the males bicker, they nip at these filaments stunting their growth. In the end, only the dominant male's tail looks grand and majestic and even his will be stunted. The same can be presumed for other Aphyosemions with filamentous tail extensions.

Disease

As it goes Aphyosemions are rather tough. Their main problems are finrot and such. All the diseases related to poor housekeeping tends to hit them hard, but still they are tougher than the average neon. Due to their preference for low temperatures they can be susceptible to whitespot in the event of temperature swings. I use Tetra or King British whitespot destroyer. These are not the only cures that work just those that I use. Ask your local dealer for the most effective cure **lacking copper!**

Another pest is hydra. Anything with formaldehyde will kill it. Tetra whitespot destroyer does the job nicely. Wright Huntley recommends three 'drops' 37 % formaldehyde per 5 gallons (20 L) every other day till the symptoms disappear (all the hydra are dead). How much 3 'drops' constitutes is open to discussion.

Behaviour and general remarks

Aphyosemions are interesting, colourful and have a long life span relative to other killies. Ages of three years are not out of the ordinary. My *australe* are now a year old and are still to reach their full size.

While some can be very aggressive, others are very placid and can be kept in community tanks. In many cases, communities can be set up of different species. However, as they may interbreed this kind of set up cannot be used for breeding. Some experimentation will be required as temperaments vary from individual to individual and according to the age.

While they may be a bit difficult at first, as you gain experience they get easier to maintain and breed.

Species of the genus *Epiplatys* can be cared for and bred in the same manner as Aphyosemions.

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