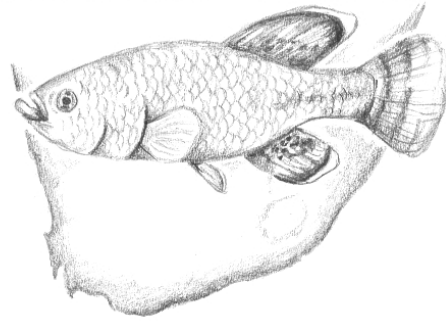


# SOUTHERN AFRICAN KILLIFISH SOCIETY



## Valued Killi Keepers

This is the fourth edition of the Southern African Killifish Society Newsletter. There has been response from the upcountry killi keepers! I have however decided to continue with another free for all editions till March 2002. Ryan and I have now sorted out the membership fees issue and will elaborate further on as to our conclusions.

In this edition we will reap the first reward from our affiliation with the NAKA and NZKA in the form of a helpful article by Vitée Tao on keeping cool killies in hot climates.

## News

I have received word from Peiter Kearney that he has returned from Gabon with some new killies! I hope he will let us all know soon what he brought back and tell us all about his trip. Rudolph Koubek is still MIA as far as contact details are concerned. If some one has his number or postal address I would really like to have it!

## Food Promotion

Both Rudolph Terblanche and I have been trying the No-BS fry food by Mike Reed (<http://www.mreed.com>). We have found them to work well although most fry still require some live food at first before they will switch over to the dried foods. Growth has been good (perhaps even excellent!) and the fish are still healthy and robust. So far none of Rudolph's fish or mine have rejected the food.

Dirk Bellstedt and I have also tried the decapsulated brine shrimp eggs and a new baby brine shrimp replacement food by *InterRyba*. Results have been very good so far.

## Member's contributions

I once again encourage every one to contribute. Be it a short letter with observations, an article or even a question. Even more appreciated would be list of fish and/or eggs you wish to trade with. A list of species you maintain would also be nice as I am trying to determine what species are being kept in Southern Africa.

## Membership Rates

Ryan and I have decided on the following:

| <u>Fees per year for:</u>           | <u>Amount (ZAR)</u> |
|-------------------------------------|---------------------|
| Membership (e-based)                | R 10                |
| Advertisement                       | R 10                |
| Postal (newsletter & advertisement) | R 20                |

I would prefer to send the newsletter out by email than post, as it is faster and cheaper. This cost is simply there cover expenditure related at maintaining the Internet site etc... This is the flat "lurker" rate for those who don't want to contribute to the trading list. To be able to advertise in the newsletter an addition amount will have to be paid. This rate will cover advertisements in six editions rather than per year as it may well be that you have nothing to trade or sell for most of the year. The trading list will hopefully be loaded on to the SAKS web page each month and be exposed to the world! If you could submit your fish/egg list with prices in Rands and US Dollars that would be great. The Rand price will be sent to all SAKS members while the Dollar price will be posted on the Internet. Those who can only receive the newsletter by post have a separate rate.

## Promoting Killifish and SAKS

Again I must ask you to try and promote the killifish hobby in Southern Africa by trying to distribute fish! And telling people about SAKS! I have sent out a poster advertising SAKS and killifish. It is attached to one of the emails you have received as killiposter.pdf. If you could print it out and post it in the local Pet store that would great!

## Fish and Egg listing

**Tyrone Genade**, No. 5 Concord, Kerk Straat, Stellenbosch, 7600

*Aphyosemion australe*, heterozygous for the spotless-orange genes (yielding the so called Bellstedt Gold as seen on the SAKS home page), R50/ws

*Fundulopanchax gardneri* "N'Sukka" R25/ws

*Nematolebias whitei* "Barra de Sao Joao" R50/ws

*Nothobranchius melanospilus* "Mvumi TAN 00/11" R50/ws

*Nothobranchius rachovii* "Biera 98"<sup>1</sup> R50/ws

Non-annual spawns are for a duration of 2 or 5 days and number between 20 and 40 eggs while the content of a Notho ws (week's spawn) is undetermined but normally has more than 50 eggs.

**Rudolph Terblanche**, 61 Leslie Crescent Brackenfell 7560 Cape Town,  
[ruddi@intekom.co.za](mailto:ruddi@intekom.co.za) (h) [rterblanche@shoprite.co.za](mailto:rterblanche@shoprite.co.za) (w) Tel: (021) 981 5436 (h), 083 462 0237 (c)

Eggs to trade: *Aplocheilichthys lineatus* "Gold" for any non-annual

## Conclusions

In SAKS Letters is an article by the Australian Vitée Tao. This is the only article which is a bit sad. Again I want to send out a call for article by our local members!

Kind regards

Tyrone

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<sup>1</sup> NB: *N. rachovii* is a blacklisted species and will require special permits for it to be kept. These permits are obtainable from the local board of Nature Conservation.

# SAKS Letters

1) Summer Time Blues

3

## Summer Time Blues

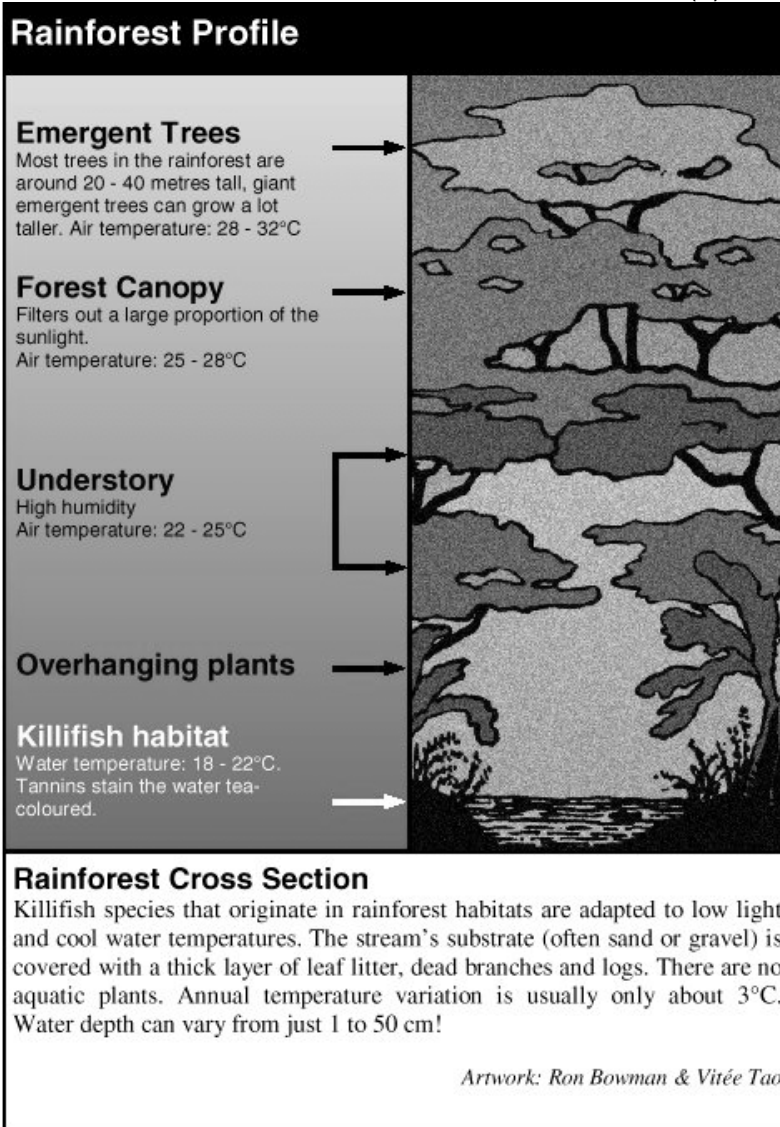
Vit e Tao  
JNAKA 3(4):1-6

Another long, hot summer has finally passed into Autumn and taken its toll on the inhabitants of many folk's fish collections; including mine. Commercial aquariums have been feeling the pinch as well, even though they rarely carry many killies. Australian summers seem to be getting longer and hotter — in fact, the 2000-2001 season in Melbourne broke the record for minimum daytime temperatures over 20°C; 83 days since November! Long periods of maximum temperatures of over 30°C and several days of 40°C and over, mean that aquarium water does not drop below about 27°C for weeks at a time. This spells disaster for many killifish species.

Most killie-keepers are aware that these fishes generally do not do well at temperatures over about 26°C, particularly over extended periods. In this article I would like to explore why this is so, and what can be done about it.

The first thing to consider is the native habitat of the fish you keep. The non-annual or plant spawning species that I keep (*Aphyosemion*, *Fundulopanchax*, *Epiplatys* and *Poropanchax*) generally originate in tropical West and Central Africa — many of them from just a degree or two from the equator or actually on it. So why are these fish so sensitive to high temperatures?

Killifish rainforest habitats are protected from high water temperatures by several layers of the forest's canopy and the trees and bushes of the understory; plus a thick layer of overhanging vegetation, dead branches and leaves. Direct sunlight rarely reaches this deep, therefore the water they live in is cool (18 to 22°C) and stained with tannins that have leached out of the forest floor.



The canopy, understory and leaf litter is populated by millions of insects, mostly ants, which are constantly falling onto the surface of the water and being eaten by the fish.

The picture that emerges is of a highly opportunistic group of fish that have evolved to take advantage of cool, dark water conditions with a constant supply of food, at the lowest reaches of the rainforest profile. Living in this environment may explain why killies have such good eyesight and why the males often have such vivid colours. They are also right near the bottom of the rainforest food chain and therefore need easy access to hiding places.

Some of the bodies of water can be quite small, ranging from a width of 5 metres down to 1 metre. Water depth can vary from 1 to 50 cm. According to AMIET, "Several species of *Aphyosemion* live in very shallow water, in the region of 1 to 5 cm..." Some researchers report that *Aphyosemion* species avoid places where the water depth exceeds 50 cm, although annual and some semi-annuals are found in waters up 1m deep.

Killifishes from this region of Africa also occupy less protected habitats in open scrubland and savannah water courses. Fish from these areas are generally able to handle higher water temperatures.

However, there are some species that are apparently adaptable enough to handle a range of habitat types. AMIET, referring to members of the *Chromaphyosemion* sub-genus in Cameroon, states: "These fish seek out small rivers and streams with clear and well aerated waters, whose current is quite often strong, whose temperature ranges between 23° and 27° C and whose pH is between 5.5 and 7.4; they shun stagnant water and are missing from temporary milieu. Although normally forest species, they can, however, be found in unwooded areas if an abundance of amphibious or aquatic vegetation offers them substitute cover."

The altitude at which a particular species or population lives possibly also plays a role in determining their temperature tolerance. *Chromaphyosemion* originating from the Gulf of Guinea are found at altitudes ranging from sea level to 400 metres. Others live on the slopes of Mount Cameroon (*A. volcanum*) at up to 900 metres.

So what can be gained from this knowledge of killifish habitats when dealing with high summer temperatures? You may find the following categories helpful.

### **Location**

This is probably the most important consideration when deciding where to set up your killie tank or fish room. Bearing in mind that the majority of killies you are likely to keep at home come from rainforest environments, then it makes sense to choose a location that:

Is cool in summer and warm in winter, but is not subject to extreme fluctuations.

Does not get a lot of direct sunlight (or any) - particularly in summer. Direct sunlight will heat up a tank faster than anything else.

If possible receives natural daylight from a southern (northern, in the northern hemisphere) aspect. This is important if you intend to grow plants and want to save on your power bills. You might also consider a location under a shady tree or use shade cloth.

### **Environmental Considerations**

These are mainly concerned with the general well being of the fish. The basic principle being: "A happy fish is a healthy fish." A killifish that is kept in a brightly lit tank with no hiding places is far more likely to become sick than one that is provided with plenty of cover and low or filtered light. Fish that are stressed by feeling "vulnerable" and are then subject to high temperatures are in deep trouble.

I have experimented with using dead leaves as a substrate in my tanks and discovered that they last well and offer great hiding places for the fish. I use Oak and Plane tree leaves which I collect in Autumn. They should be boiled for about 10 minutes and allowed to cool before placing them in the tank.

Fish that come from slow moving waters will not feel comfortable in a tank with heavy aeration or the flow from a power filter. The opposite applies to fish from fast flowing waters.

### Handling the Heat

What can you do to make life bearable for your fish if you can't keep your tanks cool in the summer?

Generally speaking, biological processes happen faster in warmer water. This effects fish by speeding up their metabolism, which in turn increases their need for food; therefore they need to be fed more — or more often. The longer they are kept at high temperatures, the shorter their lifespan.

The other less welcome inhabitants of your tanks, like bacteria and viruses may also have a faster life cycle. This makes disease harder to treat, so you need to take steps to prevent the transmission of bugs from one tank to another. The way I handle this is to use two containers — one with heavily salted water and the other with fresh. Any implement that goes from one tank to another is dipped first into the salt solution, then the fresh water.

The other problem is that warm water retains less oxygen than cool, so you need to think about the number of fish you keep in each tank. Consider using larger tanks, keeping in mind that the bigger the body of water, the longer it takes to heat up — and cool down. Move your most heat sensitive fish to lower tanks.

Turning up the airflow to your filter will also help to keep the oxygen content up. Using a filter with an outlet that directs a stream of bubbles across the surface of the water will cause less distress to sensitive fish than a standard box filter.

The combination of high temperatures and more food make the risk of pollution from rotting food and fish waste products a serious problem. It is therefore necessary to do water changes more often. In the hot weather I often change up to 50%.

The ideal cooling solution is, of course, air conditioning, but this is an expensive proposition, particularly during the really long hot spells, which can last up to 2 weeks or more. I use an evaporative cooler in my fish room, but this is next to useless when the weather is humid. When things get really desperate you may be forced to use ice, but this is only a short-term solution.

A cheap method is to simply use a fan to blow air over the surface of the water. This has proven very effective, but can be disastrous with killie tanks because of their love of leaping.

One idea I have toyed with is cooling the air from an air pump. This involves running a coil of airline tubing through an ice bucket, or ideally, a metal coil through your freezer.

The species that handle the summer heat best in my fish room are:

*Aphyosemion bitaeniatum*: a member of the *Chromaphyosemion* sub-genus.

*Poropanchax normani*: a Lampeye that is found over an enormous range in both forest and savannah habitats.

*Epiplatys dagetii monroviae*: an adaptable species with a good tolerance for temperature fluxuations.

*Epiplatys bifasciatus*: another species that has a vast range. It has been reported from just about all major and minor river systems of West Africa and lives in waters that show a temperature variation from 17 to 35° C.

*Pachypanchax omalonotus*: from Nossi-Be, an island off the north western coast of Madagascar. The water temperature in its native habitat is 25 - 30° C. I have kept this species in an unheated tank in my lounge room throughout the winter with no ill effects.

*Aplocheilichthys lineatus*: from southern India seems to prefer higher temperatures.

In the final analysis the ideal solution is a well designed fish room, properly lit, heated and insulated, and built in the correct location. So I guess there is a cure for the summertime blues if you are prepared to put the time and effort into it.

### References:

**Jean-Louis AMIET (In collaboration with D. POLIAK and M. CHAUCHE)** (1987) *Fauna of Cameroon 2 - The genus APHYOSEMION Myers (Pisces, Teleostei, Cyprinodontiformes)* SCIENCES NAT

**Jorgen J. SCHEEL (1990)** *Atlas of Killifishes of the Old World* TFH Publications, Inc