

A goby-year with *Chlamydogobius ranunculus*

A few years ago I had some *Chlamydogobius ranunculus* and I was very happy keeping these convivial Australian Tadpole Gobies. Some random breeding happened and so I kept them for two generations. In the end I did not manage to breed them any longer and they disappeared from my tanks. But not forever, I was able to obtain some of them at the 2014 IRG convention in Belgium with the opportunity to keep them in stock for a longer time.

This report is based on chronological recordings of behavior, keeping condi-

tions, my thoughts of breeding and other remarkable studies. The breeding tank for nine individuals is 100 x 40 x 40 cm, equipped with brown sand, clay and PVC tubes (8-15 cm length), slate, roots and air-raiser. I added *Cryptocoryne* spec., *Hydrilla verticillata*, *Hygrophila salicifolia*, *Hygrophila corymbosa* „Stricta“, *Anubias* spec., *Vallisneria nana* „Tiger“, *Echinodorus* spec., five males and four females of *Chlamydogobius ranunculus* and some *Caridina simoni simoni*. The water conditions were 24 °C, 750 µS/cm, 8 °dGH hardness; partial water changes were made every 2 weeks.

Portrait of *Chlamydogobius ranunculus* (all photos: Peter Warth).





Acclimatization and feeding

You don't see your gobies very often during the first days. They are very shy and hide really often. The fish changes its body coloration according to the color of the gravel what additionally helps hiding. I fed them with a diversity of food: krill flakes, *Artemia* (dry and alive), pellets and JBL PlanktonPur.

After a few days the gobies began to accept the food. Although you don't see them eating very often, their bellies become round from the food eaten. They also get used to the tank and the surroundings and they become calmer. They come out of their places in the underbrush, immediately when they see the twitching mosquito larvae coming down from the water surface. It's nice to see how they pounce on the food before they swallow it. So the bellies get rounder and rounder and after half an hour every hunter is full.

The hunt on the bloodworms is remarkable; they attack directly out of their hiding places in the plants. Often these fights end in serious conflicts when they try to pull the neighbor's worm out of its mouth. That is a good opportunity to count the individuals.

Another question is: Do they like green stuff? And yes, they like it a lot! They fight hard, when I feed them with vegetarian flakes. So the conclusion is to feed your *Chlamydogobius ranunculus* as diverse as possible.

Waiting for offspring

Mid November: I sealed all PVC-tubes on one side with wool, to make them a place to spawn. But two weeks later, I see no such activities, although the group is quite vital. Because of the fact, that *Chlamydogobius ranunculus* occurs in the coastal region in northern Australia (NT,

Female.



Qld & Cape York), I raise temperature to 27 °C. Additionally I stop cutting the plants for more algae and detritus on the bottom the tank. But I continue with partial water changes every two weeks.

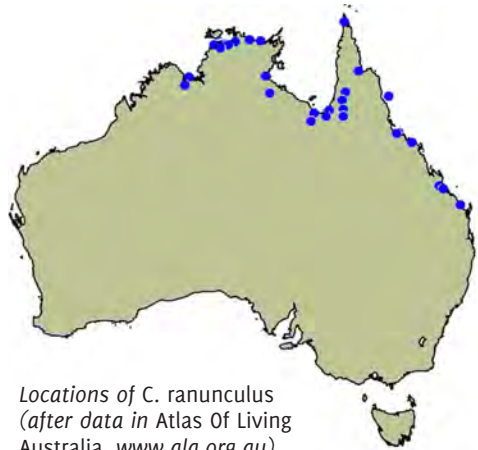
Mid December: My goby-group behaves as always. So I increase temperature to 32 °C, but turn off the heater in the night. I think northern Australia is tropical and warm due the insolation but there might be a huge temperature drop in the night. I also think that this happens especially in shallow waters, small pools and the wide mouth of a river were the gobies use to live in the wild.

Some days after: I receive an impression that there are some recesses in the ground. Some hiding caves are being inspected by the males and later by the females, too.

While I take some pictures I see a sealed clay tube in the middle of the tank being

occupied by a male. Two goby gentlemen are colored quite dark; something is going on in my tank. Then I recognize another male occupying a PVC tube on the right side.

I also realize that once in a while some individuals take a sunbath directly under the lamp. They lay on leafs of the



Locations of *C. ranunculus*
(after data in Atlas Of Living
Australia, www.ala.org.au).

Cryptocoryne or *Vallisneria* which float on the water surface. Their eyes seem to come out of the water observing the area around the tank. Please protect the tank from goby outbreaks; the ability of climbing glass etc. is quite good.

Some individuals become more and more active, in one moment they breathe very fast and hyperactive and in the other moment they calm down and behave normal. Sometimes their fins move fast too. I'm not sure if this whole behavior is based on the high temperatures or if it's just mating males or agony. A small female is swimming around with bound fins and jerky movements, a bigger male heckling in a corner and maybe his dark coloration is a sign for malaise. I lower the temperature to 30 °C, I don't want to risk injuries for the fish.

First spawn in a tube

Some days later: One male occupies and guards a PVC tube. Sometimes it fans fresh water into the tube with its pectorals, sometimes there are actually two individuals in a 15 cm tube at the same time.

Two days later: It's clear now, there is a spawn in the end of the tube. Hard to see with the small flashlight, but well guarded by a male. The boss-male has a strict eye on the surroundings of the tube and scares off the other curious mates. The temperature is 26 °C in the morning and 31 °C in the evening.

I get the impression, that there is more than only one clutch of eggs in that tube. Maybe several females have spawned or one female spawned repeatedly.



They hatched

Early January: 13 days after spawning the larvae hatched. The tube is empty no fish at all. But where are the little gobies?

I see the first one jerking around gliding from top to the bottom of the plants. They are about 5 mm long and very photogenic.

I feed the adults quite extensive to prevent chasing and eating their own offspring. I have never seen such round bellies before. I also give grinded flakes as the first baby goby dish. The alpha-male has lost a lot of weight, but its condition seems good. Now he has time enough for eating.

One day later: I see the little ones swimming around in the whole tank. The best way to catch sight of the youngsters is



▲ Eggs in a PVC-tube (from year 2009).

Aquarium (60 x 30 x 40 cm) in my living-room for raising the fry, including the guppy-tank.





▲ Some hours after hatching.

when they lie in wait on leaves directly under water surface. They show this behavior from now on until they are a fully grown adult!

I'm not sure if the adults are chasing on the juveniles. I think they don't do it on purpose, but when all gobies are teeming around maybe sometimes they catch some little critters. After some days I also feed them some *Artemia*, sometimes later a juvenile's bellies turns red – food accepted!

One directly after the other

Middle of January: Shortly after feeding a huge fight begins. A male turns nearly black and guards a clay tube in the middle of the tank, no spawning yet.

Two days later: Now they spawned, in the same tube as the last time, in the right side of the tank, well guarded. Unfortunately I



▲ Downwards dive (1 day old).

can't look into it, but no problem, I will transfer it into a separate tank for hatch in about 10 days to raise more fish than the first time.

This second clutch is quite big. I think about 40 – 60 eggs, which are situated on the ceiling of the tube. There is just a small gap for the boss-fish in the middle of the ground where he lays and guards his brood. Last week's juveniles have grown about 1-2 mm.

Day 11 after spawning: I put the whole clutch from the 4 ft. tank (30 °C, 790 µS/cm) into a 2 ft. raising-tank (26 °C, 690 µS/cm). To be safe from snails I place the tube into a guppy baby home (a small tank in a tank). I put in some *Hydrilla verticillata* and some sand for the wellness of the offspring.

While I remove some snails the hatching begins. One tiny goby after another comes



▲ Youngster lurking for food (4 days old).

out of the tube. I estimate a few dozens of 5-6 mm critters which now share the small space in the guppy tank. I feed them the first time with fresh *Artemia* and some groundflakes.

After I am sure that the juveniles are healthy and hungry I put them back into the tank. I think I relocate about 100 – 150 gobies. They are swimming around in dozens, a great thing to watch. I retain 20 individuals as back-off to observe their growth. I hope they get along with the shrimps.

The first fry is 20 days old now and they biggest individuals are about 10 mm long and healthy. I don't know exactly how many there are in the 1 m tank right now. I only notice them when they are swimming around, even when I think I searched the whole tank. The 25 mm shrimps seem like dinosaurs compared to

the tiny fishes. You see round reddish bellies in the raising tank, I fed them fresh *Artemia*!

As we all know, these gobies live on the ground, that's why they need some hiding places. Some smaller caves or leaves of beeches or oaks lying upon another are good places to rest for juveniles. Add some *Cryptocoryne* leaves with algae on them for instant baby food.

End of January: They spawned again. It's the third clutch of eggs in the same cave. And always the same male seems to be responsible for it. Due to shortage of space I let the clutch in the big tank. I see a male and a female together in the cave the next day; it seems they spawn in a certain period of time.

You can clearly see the black-dotted eyes on the third offspring in the cave six days later. Now they shall move to the 60 cm

tank as well. Earlier than expected, after 9 days of male surveillance, the larvae hatch at 9:45 pm, just 15 minutes before the light turns automatically down. The water conditions are similar to the other aquariums: 900 – 1000 $\mu\text{S}/\text{cm}$ and ca. 27 °C. The male in the PVC cave is not willing to let the clutch go. But after a few minutes I am able to relocate the eggs into the smaller

tank. Some seconds after putting them in, more and more gobies hatch.

I come to the conclusion that I do not have enough space for all these fishes when they grow with such speed. Maybe I have to give some of them away to other passionate fish people. It's much calmer in the big tank now, only little fights beside the middle cave. The cave on right side remains abandoned.

Shortage of space

Middle of February: I recognize huge differences in the growth rate of the gobies. The smaller ones (from Jan 8) are as large as in the beginning (5 mm), the bigger ones are about 12 mm. I see few juveniles catching some food under the surface and returning then to a leaf waiting in this tank. I feed them various ground



▲ These gobies are easily climbing up vertical aquarium-glass.

flake foods and I lower the temperature, because I don't have space for more individuals.

I see many different things on my monitor when I make the inspection of the videos filmed with my macro lens. Things you can't see without a lens like this, their rolling eyes, the quick breathing of the tiny bodies, the yawning and the *Artemia* snapping.

The juveniles in the guppy raising tank have grown a lot and the space becomes scarce. The gobies are four weeks old now and I think I release most of them into the normal tank. For taking pictures and videos it's better to leave a few of them in this place.

The guppy tank can also be dangerous for the little ones. Some gobies get stuck between the glass and the wall of it and



▲ *Hiding in the dead leaves.*

perish rapidly. I pinch two stems into to gap to widen it and to prevent this mishap.

There are a lot of juveniles of different sizes in the big tank and there is always a lot of trouble at feeding time. The biggest offspring is about 20-22 mm long.

End of April: Even after ten days of holiday (with an automatic feeder) the gobies are doing great. I think I lost some of them, but fortunately a lot of them appear while I feed them with fresh *Artemia*. The bigger ones try the swallow bloodworms, even if they are as big as themselves.

23. May: I cannot believe what I see; there is a new clutch of eggs. I recognized a male fanning water into a clay cave in the middle of the tank. In fact there are 30 – 40 eggs in the lower end of the cave. I'm a

little bit surprised about that, because the temperature is quite low at 22 °C and the electric conductivity is 480 $\mu\text{S}/\text{cm}$. Anywhay, the story starts again and again...

Co-housing

The “*ranunculus*” can be kept in principle in a community tank. I kept them together with some *Pseudomugil signatus* “Ross River”.

However, the fish definitely died younger. I think the two different species are stressed of each other, even when it seems that they ignore each other. Even the feeding is a problem because the gobies need a lot more time to eat their food. My suggestion: Keep them on their own, so you can study their natural behavior way better.

Maintenance in the IRG

I was able to distribute some Tadpole Gobies at the annual IRG convention in 2015. At this time there are only few keepers of this (very interesting) Australian freshwater goby. I think they are a good contrast to rainbowfishes and blue-eyes, it would be a pity when they vanish from our tanks.

Links

I uploaded a 14-minutes compilation in HD quality of my “goby world” to youtube. You will find it under <https://youtu.be/Lj8kkuxVh5k>.



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Titelbild:
Junge Zwergwüstengrundel *Chlamydogobius ranunculus* in der 1. Etage des „Unterwasser-Blätterhotels“.
Foto: Peter Warth

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IRG - Internationale Gesellschaft für Regenbogenfische e.V. (International Rainbowfish Association), founded in 1986, is a community of fishkeepers with special interest in rainbowfishes, blue-eyes, and other freshwater species from Australia, New Guinea and the close-by islands. Most of our 500+ members live in Europe. 100+ species and varieties are kept and homebred in our aquaria. In regional meetings fish and information are exchanged. Our transnational, annual convention brings together many members and sees presentations of experts and the world's largest rainbowfish sale. The date is fixed each year to the second weekend of June.

Do you want to know more?
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