

Courtesy of

ARK - Arizona Rivulin Keepers

The Scheel Letters, No. 18

Recent Crossings

In between the "production" of eggs for you I have to go on in crossing the different species. This is done by the way that I isolate some females in one tank and some males in another tank and each Sunday I place one male and one female together in a 2-4 liters glass only with little perlone and hope the crossing to come. Sometimes I am successful, sometimes not. One Sunday gave 6 different combinations, other Sundays gave not a single egg. Some females and some males are excellent for crossings, some are not willing to spawn with any strange partner.

Aphyosemion australe male / *Epiplatys chaperti* female: this cross was difficult to establish as the female did not want to spawn with this male.

- At last on 02 July 59 spawning (normal) was observed soon after the setting up of tank. 11 eggs.
- 03 July 59: most eggs are fertile.
- 05 July 59: most eggs dying. 2 transparent eggs left.
- 07 July 59: these two eggs are still transparent. A formless mass of cells is seen where embryo should be.

Aphyosemion australe male / *Aphyosemion cognatum* female:

- 01 June 59 22 eggs.
- 08 June 59: only 3 fertile eggs left. Very small embryo compared with other crosses made the same day (01 June 59). Some pigments on eye, not on body. As in 1957 this crossing does not work.
- 11 June 59: not changed very much, but the embryos do live. 18 June 59: circulation of blood now is very slow and only a few blood elements are seen circulating in the yolk ball, but one embryo moves violently in the egg.
- 02 July 59: one dead fry hatched, preserved all material.

Aphyosemion australe male / *Aphyosemion schoutedeni* female:

- 01 June 59 (same male as the one mentioned above) 36 eggs.

- 05 June 59: very small, but distinct embryo in 19 eggs. The blood system is rather well developed, but the circulation of blood elements is weak. Possibly this cross will not work.
- 11 June 59: some embryos are better than others, but it is not at all promising. Some embryos curl up tails on one side of the yolk. Heart is too far from body.
- 14 June 59: they still live, but do not change any more. Embryos are very small but still some are better than others.
- 18 June 59: still alive, circulation of blood is still going on, but only a few blood elements in circulation.
- 03 July 59: no circulation of blood elements, preserved.

Aphyosemion cognatum male / *Aphyosemion schoutedeni* female:

- 15 May 59 12 eggs.
- 17 May 59: one transparent egg inspected, a distinct embryo.
- 19 May 59: pigments on body, heavy circulation of blood elements, 11 fertile eggs, all at the same state of development.
- 22 May 59: very fine development, eye pigmented.
- 29 May 59: they might hatch now.
- 02 June 59: one normal fry hatched.
- 04 June 59: dry food on eggs, after 6 hours one fry hatched.
- 05 June 59: another fry plus 6. 24 hours after the adding of the dry food water begins to stink. 2 eggs still not hatched. To clean water, hatched next day. These fry are fine and growing rather quickly (07 July 59). They certainly will live to maturity.

Aphyosemion labarrei male / *Aphyosemion schoutedeni* female:

- 01 June 59 31 eggs.
- 05 June 59: many eggs are fertile, embryo distinct in one egg disappeared. Pigmentation in eye.
- 08 June 59: 14 fertile eggs left. Embryo is more than 360 degrees - blood net fine, eye fully pigmented and also pigments on body.
- 11 June 59: might hatch.
- 16 June 59: one fry hatched by itself.
- 18 June 59: dry food added, no fry hatched.
- 20 June 59: once more dry food, eggs were killed all. The sole fry was kept in a 4 liter glass and was growing nicely, but possibly rather slowly.
- 05 July 59: the fry is not in the tank.
- 07 July 59: possibly dead and eaten up by the snail present. No dead body to be found. Try again.

Aphyosemion schouetedeni male / *Aphyosemion calliurum* female:

- 17 May 59: 17 eggs.
- 19 May 59: 16 eggs are fertile, embryo is coming.

- 22 May 59: 16 eggs, 120 degree embryo, no pigments, no blood, but eyes can be seen.
- 29 May 59: blood net fine, scattered pigments on body, eye slightly pigmented, the situation in egg is not quite normal, but no curling of tail is seen in any egg.
- 04 June 59: all are very promising. Heavy circulation of blood in a fine net.
- 07 June 59: two fry hatched by themselves.
- 08 June 59: 2 fry and dry food added gave another 3 fry.
- 09 June 59: once more dry food - 5 fry, one of these had large yolk sack.
- 10 June 59: one dead fry hatched.
- 11 June 59: another fry sound. 12 June 59: last egg hatched by itself, sound fry.
- 07 June 59: another fry sound. 12 June 59: last egg hatched by itself. Sound fry.
- 07 July 59: they are bigger than the cross "cognatum/schoutedeni" and growing fine. They will live to maturity.

Aphyosemion schoutedeni male / *Aphyosemion labarrei* female:

- 30 May 59 only 2 eggs spawned.
- 05 June 59: distinct unpigmented embryo in both eggs.
- 08 June 59: not very promising indeed, but embryo is big, eye and body pigmented but development of blood system (remember: "labarrei" spawns very big eggs) is not at all satisfying, there is no circulation in one egg, embryos are not 180 degrees. Possibly this cross does not work.
- 11 June 59: they live, one better than the other.
- 14 June 59: going better, one still better than the other, perhaps it will work.
- 18 June 59: still better, embryo is very big now, and yolk sack decreases rapidly.
- 19 June 59: 1 big fry hatched, but it has a rather big yolk sack, resting at the bottom of the cup.
- 20 June 59: also second egg hatching.
- 22 June 59: first fry is normally swimming, but the second is resting at the bottom, having a very big yolk sack. The yolk sack of the first fry is consumed.
- Up to 04 July 59: second fry died, first fry was growing fine and apparently was sound, but this day I found the fry quite covered by Oodinium.
- Fry died on 05 July 59: possibly with more care it will be possible to raise this hybrid. Try again.

Aphyosemion schoutedeni male / *Epiplatys chaperi* female:

- 30 May 59 (same male as to "labarrei" female) 15 eggs (from two females, one after the other).
- 05 June 59: distinct embryo.
- 08 June 59: 14 fertile eggs, pigments on eye and body, development of blood system promising but not quite satisfying.
- 11 June 59: some embryos curl up tails on one side of the yolk, apart from this "bad" sign, the development is still promising.
- 18 June 59: it does not work, fry are rather big, but many have got a "thrombus" (this is very common in some sorts of crossings). Blood elements concentrate at certain points in masses, in particular near heart, no elements or only very few are circulating. But still all fry live (movements of heart and body).

- 22 June 59: two fry dying, hatched, partly out of egg.
- 25 June 59: more eggs containing dying fry are hatching. Preserved all material.

Epiplatys bifasciatus male / *Epiplatys chaperi* female:

- 05 July 59 fine spawning in the ordinary *Epiplatys* way, both partners are very interested. 50 eggs (41 after 4 hours).
- 07 July 59: only a few fertile eggs (not sorted out), a few fertile eggs inspected, they hold a developing embryo.

Epiplatys sexfasciatus male / *Epiplatys chaperi* female:

- up to 07 March 59 male (sent alive from Ibadan, Nigeria) is very shy and I had to set up a tank in order to force him into the crossing.
- 07 March 59: collected the first few but fertile eggs.
- 11 March 59: embryo is big, but its situation in the egg is not the normal one, some curling up of tail in some eggs, but not in all. Possibly this cross (rather related species??) will not work.
- 13 March 59: embryo is dying or dead in some eggs, some embryos curl up tail, but a few are fine.
- 30 March 59: only 3 eggs still have live embryo. One embryo is normal and may be hatchable, the more two are badly deformed and will not live for more days.
- 31 March 59: found 5 more eggs in the tank (perlon tuft hanging in the tank, containing one *Epiplatys sexfasciatus* male and one *Epiplatys chaperi* female). These eggs are very far in development and they are still better developed than the best in the first batch.
- 04 April 59: 1 sound fry hatched, very small indeed, only 2.5-2.6 mm long, caudal fin included.
- 06 April 59: now there are 3 fry swimming, 2 eggs still unhatched and the fry inside is not promising.
- 16 April 59: 2 fry still live and they are growing.
- 26 April 59: only one fry still alive (it has a 12 liter glass for itself, plenty of fine live food). It grows very slowly.
- 08 July 59: one fry has had its crossbars (rather diffuse) for at least 3 weeks, it is about 25 mm and certainly will mature soon. It looks like a "chaperi".

Cynolebias bellotti male / *Cynolebias whitei* female:

- until 15 Feb. 59 6 eggs, all got fungus.
- 15-21 Feb. 59: 19 eggs, all got fungus.
- 21 Feb.-30 March 59: 28 eggs, on 20 April I had 9 left, transparent.
- 07 July 59: a few left, still transparent, no trace of an embryo!!!

Cynolebias nigripinnis male / *Cynolebias bellotti* female:

- until 05 March 59 3 eggs, they got fungus.
- 05-15 March 59: 6 transparent eggs plus many "white" eggs washed out.
- 18 March 59: only 3 transparent eggs left.
- 29 March 59: only 2 eggs transparent.
- 15-29 March 59: 6 transparent eggs plus many "white" eggs washed out. Fish preserved (JJH). Added the 2 transparent eggs from 05-15 March 59.
- 20 April 59: only 2 transparent eggs left.
- 08 July 59: eggs are still transparent and have no trace of an embryo.

Cynolebias nigripinnis male / *Cynolebias whitei* female:

- until 15 Feb. 59 37 eggs.
- 15-19 Feb. 59: more 50 eggs.
- 20 April 59: 16 eggs left, all without any trace of an embryo.
- 08 July 59: 30 eggs left, no change at all.

I wonder why these eggs do not develop (or decompose). Possibly the only way to get out of this will be to have several females of these species spawning (controlled peat) without any males and see if such eggs might stay transparent for such a long time. These crossings behave just like the 3 crosses with *Nothobranchius palmquisti* female to males of "guntheri", "melanospilus" and "rachovi" in 1958. Also in these cases not a single egg (out of much larger numbers of eggs) did develop. After up to half a year these eggs decomposed in the yolk ball which fell into oil drops.

The crossing procedure is interesting from a breeder's point of view. Although the results certainly are rather poor, it is good sport because it might be difficult in at least some cases. Try to cross p.i. a *Cynolebias nigripinnis* male to a *Nothobranchius guentheri* female. This odd cross I made up my mind to try in the spring of 1958. After some initiate training (2 liters glass) on deep mud the partners were used of each other and from their behavior it was easy to see that both fish were willing to spawn each other. Male "nigripinnis" dived deep into the fine (screened) mud and only his brilliant caudal fin was seen waving over the mud. Female "guntheri" placed herself very close but did not try to dive, she was patiently waiting just over the surface of the mud. So things went on hours after hours. I took away most of the mud and apparently some sort of "normal" spawning then took place in clouds of mud. Many eggs were collected, but naturally all got fungus within a few days. It is interesting that the spawning instinct commonly is so strong in annual killies that even crossings (using isolated females and males) might start within a few minutes after the setting up of the breeding team. I had the most difficulties with the three species of *Epiplatys* and *Aplocheilus lineatus*. Normally these males need long training and "living together with" strange females, before normal courting takes place. The new "bifasciatus" seems to be the best male for crossings. Also the *Epiplatys* male wants much more lighting of the tank than do the *Aphyosemion* etc. This year's crossings in *Aphyosemion* took place in almost quite darkness. Most 1957/58 crossings were made in the normal 2-4 liter glasses standing on a shelf in a way that tanks were lighted from below (only lighting a small part of the bottom of the glass and one side). Possibly this strange lighting helps in breaking down the "aversion" of the male.

Total numbers of "crossings" (as some are made on mud, maybe eggs were liberated by the female without the aid of the male) are now 63. Of these 31 crosses (different combinations) gave the development of a distinct embryo in eggs. Of these crosses 21 different ones came to hatching, but not all hatched fry were livable. Until now 8 different hybrids came to maturity (maybe only 7, because I have got more and more doubt of the reliability of the *Cynopoecilus ladigesii*-*melanotaenia* cross which now is made one more and in both "directions". However I do not find any explanation where a fault might sit). As I now keep about 40 different species (or races) in killies, this means about 166 different combinations theoretically. You understand that it will not be finished in the near future indeed.

Small female "calabaricus" has beaten her "egg record" which she spawned in less than 24 hours a week ago. Today I cut out her 84 fertile eggs from a spawning of less than 24 hours. Might she reach the "100 eggs." She was born in autumn 1957 and she spawns together with one of her brothers of the same age. Old *Aphyosemions* normally are not good breeders. Before she dies, I hope that her offspring will swim happily in your tank.