

**WHAT HAS HAPPENED IN SEDILI?**  
**-research on the situation of *Parosphromenus alfredi* –**  
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*Parosphromenus alfredi* from Sedili (Photo by  
 Martin Hallmann)

The village of Sedili is situated on the East coast of the southern peninsula of Malaysia. Tanjung (= cape) Sedili is found only ca. 70 km as the crow flies from Singapore at the northern tip of a bay; there is also a Sedili kecil (=small) at its Southern end. I am referring here to the former Sedili that can be reached on the main road Jalan Tanjung Selili (No. 112).

I have frequently visited the area around Sedili. My professional activities

required quite frequent journeys through Singapore – a very welcome opportunity for small “escapes”. Two or three days of a stopover are sufficient for short visits to the waters in the surrounding areas. It was ca. 11 years ago, in September 2006, that I ended up in the Sedili area for the first time. During one of these flying visits, I had mentioned to Patrick Yap (the well-known Singaporean exporter of fish) my interest in *Parosphromenus alfredi*. This species had only been described the previous year (Kottelat and Ng, 2005) and I had never seen them alive. Patrick said that he could do with a bit of a timeout as well and suggested we go together, and so we went the next morning. There were some occasional stops on our way at which more cars joined us; all Patrick’s friends from Singapore and Malaysia so that at the end, a very enjoyable small crowd of interested people gathered. We first scoured all the described sites of the holo- and para-types along the KotaTinggi –

Mawai – Desaru route, however, they did not exist any longer (the Kottelat and Ng collection was made in 1992). They had disappeared or become degraded to loamy-turbid creeks, a consequence of the erosion caused by exhaustive clearing for oilpalm plantations that were very abundant at that time already. Someone in our team – I do not really recall who it was – came with the suggestion to make a turn towards Sedili because he had seen an interesting area there.

It is only a couple of kilometers before reaching Sedili that a “dirt road” branches off, a provisional unsurfaced road that can sometimes be used with a normal car, while at times this is impossible. This depends not only on the seasons but also on the lorry traffic that can be very heavy, leading to substantial road damage. These lorries transport the sand that is dug out at the end of the road, after ca. 7 km. The sand is mainly transported to Singapore, serving construction purposes for which sand from the sea is not suitable. Constructing this dirt road necessitated substantial soil movement, partially requiring dam-like elevations.

It is such a dam that crosses several smaller streams and, further down, a larger creek that is consequently restricted in its course so that a swamp



The dirt road dam. The wooden bridge is discernible. The swampy area extends to the right, the creek forms to the left.

area is formed on one side. Dead trees that are frequently found witness its relatively recent formation. Dusky leaf monkeys (*Trachypithecus obscurus*) are quite abundant here – an interesting, secondary biotope although strongly influenced by development (Fig. 3). Here and there, simple wooden bridges made of strong planks release the one-sided water pressure, allowing defined creeks to form. This means that the left side of the road (in the direction of travel) has a completely different appearance: much less swampy with creeks that occasionally meander into the adjacent forest (Fig. 4). At my first visit, this larger creek was quite deep so



View from the bridge on the swampy side in 2008

that one had to swim in places, quite fast flowing and with a water that appeared quite untypical for *Parosphromenus*, namely fairly clear with a slightly brownish hue, at best. I have measured 34  $\mu\text{Si}/\text{cm}$  and a pH of 5.1 at the time. (Incidentally, a *Parosphromenus* from very clear waters of the Endau Rompin natural reserve has recently been brought to our attention -ca. 105 km north of Sedili; (Kühne, 2017) so maybe this type of Paros habitat is not as rare as we think!) Thus, to our delight, we were able to collect some very few specimens according to a recurrent pattern: *Parosphromenus alfredi* are not found on the swampy side, they are not very abundant in the creek either but are mainly present in the slowly flowing trickles in the forest between lots of fallen foliage. The population density was ever-changing over the years, although I visited the place at similar times during November-December. There were very few sometimes and large numbers in another year. Once in 2008, accompanied by our Malaysian friend Zahar and his acquaintances, we met a professional catcher from the nearby village. He had collected hundreds of them and Zahar gave him a lecture on the sustainable use of the natural resource. I also have found this creek only calf-deep, as in 2008 and also in 2011. The small daughters of Olivier Perrin (Paris) who accompanied me at this time played in it – the whole situation is very variable.



The creek side taken from the bridge. The forest is at the same level as the creek, even at this low water level, so that the creek can enter into it (such as directly behind the sand bank; 2008)

In the same year – after my 4<sup>th</sup> visit – I came into email contact with David Armitage. He had visited the area in the previous year (2010) accompanied by Dennis Yong, a renowned ornithological field guide. It required a couple of clarifying emails with both to find out that we had clearly been at more or less the same site. David and Dennis might not have gone as far on the road [“ It is on the first major dirt track (mining road) on the left hand as soon as you leave Kg. Sedili Besar for Mawai. And the actual site is the first & only clear water stream on the said dirt track” (Dennis Yong)]. (See *Labyrinth 164. We did fish as far up as Peter described but rather casually and we found nothing-DMA.*)

Why is this so important? Well, fact is that they had found *P. nanyi* instead of the expected *P. alfredi* as unequivocally witnessed by a photo (in my hands) that they took at the site. But they were the only ones. Others, that went there as well, like Norbert Neugebauer and Martin Hallmann (2009) as well as Horst Linke as well as our Malaysian friends have

always found *P. alfredi*, exclusively. I have myself tried repeatedly to find *P. nagyi* there, but nothing. A mystery!

Sedili is of course way too far South for this species and completely within the *P. alfredi* distribution area. According to our knowledge, the southernmost known *P. nagyi* site is close to Nenasi on the East coast, but that's about 140 km up North of Sedili (collected by Hallmann and Neugebauer, 2009)! But yet, there has been some circumstantial evidence. Such as a collector working for Patrick Yap who told me in 2010 already the he did not have to travel far if he wanted *P. nagyi* and that a journey up North was not required for the purpose. And there is also the rumor on the occurrence of this species close to Ulu Tiram. This would be only 30 km away from Singapore! How could this ever be possible?

To tell the complete story, I still have to report on my last two visits to Sedili. The one that I made accompanied by my friend Lawrence Kent (USA) in December 2014 marks the absolute low point. Massive earth movements had taken place and continued. The lorry traffic was exorbitant. The sand digging area had come much closer to the *P. alfredi* site and the creek was barely recognizable (Figs. 5, 6, 7). It was very deep. To warrant rapid water drainage, it



The same creek in 2014. The wooden bridge, almost buried with sand, is on the left.

was excavated to form a deep canal leaving the excavation along its sides to form a dam that separates the creek from the forest in which the water was now standing instead of slowly flowing. Despite of all our effort over hours, we could not find a single *P. alfredi*, instead we found plenty of *Trichopsis vittata* which, although being of great magnificence there, represent a sad indicator. That's because when an excess of these is met, one must not search for *Parosphromenus* – that's actually a rule. The water showed colorful streaks on its surface and smelled like Diesel, just like we did when we left the water. Habitat wrecked!



The creek has been deepened and the excavated material been piled up on the sides (2014). The author stands on the small dam that has been formed separating the creek from the adjacent forest.



View from the bridge in the direction of the swampy side (2014; compare with 2008) The massiveness of the earth movements is evident.

Disillusioned in such way, but still hopeful, the currently last visit was undertaken last year (August 2017) accompanied by Martin Hallmann and Michael Scharfenberg. The lorry traffic had calmed down a lot and the water looked better again. The swampy side looked strongly drained and consequently the creek/canal was full to the brim (Fi, but there were water plants again. Clearly, its separation from the forest by the dam remained unchanged.



View from the bridge towards the swampy side (2017). The dehydration of the area has much progressed.

And we found *Parosphromenus* again! Hundreds, if not thousands of them! But

for heaven's sake – they were all *P. nagyi* !! A true *P. nagyi* epidemic! Not a single *P. alfredi*. Our strenuous search at all possible and impossible sites within the area did not change this situation. We would rather have preferred not finding anything, as we all agreed. Sedili is -or was- the only *P. alfredi* locality known to us. Maybe it was the last one. In any case, our search over the years and, on this occasion, in the larger area, never yielded a second site. Although Zahar told us that he had seen the species in the trade, however, he had no opportunity for an inspection. There has also been a photo been circulated by Haji Badaruddin of a *P. alfredi* locality that is apparently unknown to me. However, my email request for more information that I sent years ago already, remained unanswered, unfortunately. Maybe there are still some sites remaining? Well, hope is eternal, as is generally known.



View on the creek (2017) that now has the character of a deep canal. Water plants are abundant. The separation between creek/canal and forest persists. This canal was found populated with massive amounts of *P. nagyi*.

It is not easy to find an explanation for the catastrophe. There is the possibility that

both species: *P. alfredi* and *P. nagyi* always coexisted there but in so different ecological niches that one would find on different occasions only one or the other species within the same water system. But this is hard to believe because among the *Parosphromenus* species of Malaysia one would attribute the highest likeliness for a certain capacity for invasiveness to the relatively robust *P. nagyi* - as this very case most impressively exemplifies. It appears more plausible that the species has been released here out of commercial reasons at a more or less distinct site within the larger system. This would be the one that Armitage and Yong had found. The subsequent large scale earthworks and the accompanying changes in the flowing water topologies – especially the isolation of the forest – might then have given a large advantage to *P. nagyi* enabling its massive spread. This scenario would rather plead for irresponsible human action as the underlying cause. (*Dennis suggested it was the widespread flooding in recent years that might have caused the spread of P.nagyi-DMA*)



*P. nagyi* from the Sedili creek/canal in the aquarium

Assuming that *P. alfredi* are no longer to be found in the wild, as is to be feared, successful breeding would be very desirable and commendable.

However, there are only very few who are able or want to multiply this species sustainably over many generations. Their complaints are known. With progressing generations, breeding becomes harder and harder as well as less and less productive. In addition, there is degeneration. The fry grow very slowly and fin degeneration becomes apparent. This was quite different with the wild-collected animals and with the first bred generations. One must thus take rather a pessimistic view on the value of this oft quoted Noah's ark. The natural occurrence of this species remains essential for its survival, as a very simple but fundamental truth. It is well possible that another journey will be made during the remaining 2018 or in early 2019. I will certainly visit Sedili again, again disillusioned but remaining hopeful.

#### Citations

Kottelat M, Ng PKL (2005) Diagnoses of six new species of *Parosphromenus* (Teleostei: Osphronemidae) from Malay peninsula and Borneo, with notes on other species. *The Raffles Bulletin of Zoology Suppl.* 13, 101-113.

Kühne J (2017) *Parosphromenus* sind Generalisten. *Der Makropode* 39, 113-119.

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