

**Notes and Observations of *Poecilotheria smithi* and the
Threat to its Survival in Captivity and Sri Lanka**
Ray Gabriel, Nicolai Pedersen and Søren Rafn

Poecilotheria smithi is without doubt the most endangered species of *Poecilotheria* in Sri Lanka, if not the world. Captive reproduction of this species, though regular in the past, is now almost non-existent. This is mainly due to lack of demand for this species in the hobby in recent years, resulting in breeders not bothering to breed the species. The possibility that the captive population has been contaminated with hybridised German stock has also discouraged breeding attempts. Searches in the wild for this species in December 2004 by Andrew Smith failed to locate any specimens. However, in April 2005 a single freshly moulted female was discovered by one of the authors (Gabriel, 2005). Two adult females and four juvenile specimens were subsequently observed by the authors in July 2005.

The captive threats

The threat to its survival in captivity stems mainly from its appearance; basically a black and white *Poecilotheria* lacking any of the vibrant colours found in most other species. This meant the desirability for hobbyists to own one was minimal, most hobbyists preferring species such as *P. regalis*, *P. fasciata*, *P. ornata* and *P. rufilata*, large species with yellow on the underside of the legs or *P. subfusca* which can be almost totally black in colour. This can be reflected by the 400 or so *P. smithi* bred a couple of years back by Nicolai Pedersen and Henrik Wessel Frank from Denmark. They found that very few people were interested in the young, even though the price was not restrictive.

The possibility that the captive population of *P. smithi* is contaminated by hybrid stock is as yet unproven. Martin Huber (pers. comm.) has informed me that there was a definite attempt to hybridise *P. fasciata* and *P. smithi* in Germany and that (any) resulting offspring may have been released into the hobby. To date no specimens have been found which show any forms of hybridisation, maybe all the supposed hybrid stock has died. Henrik Wessel Frank (pers. comm.) produced only seven offspring from four egg-sacs in 2003; this is suggested proof that he may have used hybrid males to pure bred females. It is known that *P. smithi* females are very aggressive to males, could this be because the males are hybrids and the females detect that the males are not the same species? Since *Poecilotheria smithi* comes from an area which has a very distinct cool period, is it possible that the males or the females, after mating in captivity, are being kept too warm? Could it be that his females were getting too old to produce good egg-sacs?

More recently (2005), a female *P. pederseni* was offered to one of the authors as a specimen of *P. smithi*. This female had been previously mated (or attempted to have been mated) with a (presumed correctly identified) male *P. smithi*, which was attacked and killed. Is this an indication that there are some specimens of *P. pederseni* in the pet trade under the name of *P. smithi*?



Plates 1–2: *Poecilotheria smithi* habitat destruction. Top showing area pre-development, bottom showing development - photo by R. Gabriel.



Plate 4: Gansuria tree in fence line - photo by Ray Gabriel.

Ironically *P. smithi* is now highly sought after in the hobby/pet-trade; a minority of people wishing to keep the species alive for the sake of the species, the majority seeking *P. smithi* see only the financial gains from the possibility of such an endangered species' imminent extinction.

The threats in Sri Lanka

The threats in its native environment are more serious and could well lead to the extinction of this species. Andrew Smith (pers. comm.) has been informed that the coconut plantations in area around Haragama Sri Lanka, the only location where *P. smithi* has been observed recently, are to be felled and the area redeveloped for market gardening.

Gabriel (2005) found a single freshly moulted female in a hole in a coconut tree (site 2), through his translator he also discovered that most local people kill these spiders on sight. On his trip to Sri Lanka in March/April 2005, he was taken to an area where the local guide knew exactly where he had seen some (site 1), and walked into the jungle (**Plate 1**) to a dead tree, unfortunately no specimens were found. Returning to the same area in July/August 2005, Gabriel *et al.*, found the area (site 1) had been bulldozed and two large new houses nearly finishing completion (**Plate 2**). Discussions with a good friend and nature guide, Nimal de Silva, led to the

discovery that most of the area around Haragama (I presume the areas which are not destined to become market gardens) is being sold for housing development.

From data collected in 2005 two adult females, and one unsexable moult were discovered in holes in coconut trees and one female and four juveniles in the holes of a Gansuria tree. One of the adult females observed in the coconut trees was carrying an egg-sac and was sitting near the entrance of her tree hole, due to the height of the tree hole no photographs could be taken. The Gansuria trees seem to make ideal habitat for *Poecilotheria* because of the large holes in the stems and trunks which develop without any apparent harm to the tree. It is possible that a remnant population may survive if the Gansuria trees are not destroyed in the development of the area. The Gansuria tree in which we found the adult female (**Plate 3**), and four juveniles, was a small tree on the edge of a road, and was incorporated as part of the fence separating the road from a local person's house (**Plate 4**). There were no other suitable trees within an 8 metre radius of this tree, the only other possible habitat would have been the woodpile or the house itself. When asked, the home-owner said she had only seen the spiders in the Gansuria tree, and "not long back there were two living in the tree but now only one"; could this have been a mature male she had seen along with



Plate 3: *Poecilotheria smithi* adult female - photo by Ray Gabriel.

the female? The four juveniles were found in a small hole approximately 40 cm from the ground, while the female was in a hole almost 2 m from the ground.

It is possible that more *P. smithi* may have been found, but considering that the females have been mated by this time of year, many were probably deep in their tree holes, either with egg-sac or in the process of producing them.

It is blatantly obvious that the most serious threat to *P. smithi* is the loss of its habitat, not (as suggested by some people) illegal collecting for the pet-trade. In fact collecting and breeding this species in captivity may be the only thing which ensures the survival of this species, unless massive funding can be found to survey all the forested areas around Kandy to try to locate other colonies of this species. The only known colony is doomed.

Breeding in captivity

The majority of species on this planet breed in response to certain natural triggers, *P. smithi* in the past has been considered not one of the easiest of *Poecilotheria* to breed, but by no means one of the hardest. Gabriel (2004) indicated that the trigger for *P. smithi* might be a cooler period. This corresponds with the information gathered in Sri Lanka in July/August 2005. Only two females were observed, one a heavily pregnant female, the second a female with an egg-sac. This is also the rainy season and the temperatures were much lower than on the first trip; temperatures at night being as low as 70°F around 11pm. It is interesting to note that specimens of another theraphosid species (Gabriel *et al.*, in prep.) were found with young, as were numerous other araneomorph spiders and the scorpion *Heterometrus indus*.

Suggested climatic regime for breeding *P. smithi* in captivity would therefore involve a cooler damp period preceded by a warmer dryer period, the drop in temperature and the rise in humidity being required to induce egg-sac production.

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