

Project Update: November 2012

After we completed collection in seven replicates of each matrix type, a total of 497 frogs were recorded across sites. These individuals represent 29 frog species, three of which were found inside bromeliads and 26 in the leaf-litter. All bromeligenous frogs were found only in primary forest areas while some leaf litter species were also found in secondary forest, coffee plantation or eucalyptus groves.

I mentioned in the September's report that I potentially found a new species that belongs to the genus *Crossodactylodes*. These specimens and their tissues were sent to Dr. Miguel Trefaut Rodrigues at Universidade de São Paulo for molecular analysis, which is the most reliable method to identify some of these cryptic-bromeligenous species.

Up to November 2012, we were using two methods to collect bromeligenous frog, we were searching inside bromeliads (Fig. 1 A) and in the leaf litter (Fig. 1B). During the past month we have also been using a single rope technique to access bromeliads in the canopy (above 20 m from the ground; Fig. 1C). Because some species live their entire life cycle inside canopy bromeliads, it is possible that by using this method we will collect un-described species. As far as I know this is the first time this method has been used in the Atlantic rainforest and thus I expect to gather valuable ecological data. For example, on November 20th I observed parental care of a bromeligenous frog in a bromeliad 12 m above ground. This behaviour is not yet described for this species and thus will be reported in a future publication.



Fig. 1 – The biologists and field assistants Fernanda Lirio searching inside bromeliads (A) and Cassio Zocca searching in the leaf litter (B), and me sampling bromeliad at the canopy (C).

The research project is now known about by a large portion of the local population. People stop me on the street to talk about frogs. They ask interesting questions and what makes me really happy is that they have noticed and embraced the project message (“study and save bromeligenous frogs”). I have publicised the project message through several methods: i) project's members work while wearing the project's t-shirt (Fig. 2A); ii) stickers on the field vehicle (Fig. 2B); iii) stickers and pamphlets have been distributed to local villagers; iv) oral presentations for the local students; and v) a photographic exposition. Besides this, I have received contribution from professionals in distinct areas. My advisor, Dr. Karen Beard, has been a fundamental person to discuss about all aspects of my field work. A bromeliad taxonomist, Ludovic Kollman, has been an essential contributor by identifying all bromeliad species observed in the forest. Considering that Santa Teresa has the highest richness of bromeliad species in the world, identifying all bromeliad species would be a hard task without the contribution of a specialist. Two bromeliad species we have collected thus far are probably new species and have been analysed by a specialist in that genus. Several frog species have been sent to several professors and graduate students at Zoological collections and universities. For example, Dr. Hélio R. da Silva, Ms. Thiago Silva-Soares, Dr. Sérgio Potsch de Carvalho-e-Silva, Dr. Eugênio Izecksohn, and Ms. João F. Riva Tonini

received exemplars from my field work, which has helped them to develop their research projects and contribute directly to scientific progress.



Fig. 2- Part of the project team wearing the project t-shirt (A) and bumper stickers on the field vehicle (B).

In the begin of December 2012, I will visit the amphibian collections at Museu Nacional do Rio de Janeiro and Universidade Federal do Rio de Janeiro. I expect to identify some cryptic frogs based on specimens deposited in these two collections because they have the most complete collection of frogs from this region. Besides this, I will describe a tadpole of a bromeligenous frog in partnership with another graduate student, Thiago Silva-Soares at Museu Nacional do Rio de Janeiro.

Two talks and a field expedition were done for the local high-school students (Fig. 3 A, B). The last presentation for this season is scheduled for the first week of December 2012. Another essential educational element of this project is a photographic exposition. Due to restrict space at Mello Leitao Biological Museum, the photographic exposition was transferred to an elementary and high school in Santa Teresa where 1,200 students have access to the photos. Based on the professor's views, this photographic exposition has been a success because the photos panels have been surrounded by students all the time. I think what makes these photos very attractive is that they show defensive and parental care behaviour.



Fig. 3- Group of high school students during a field expedition (A). I am showing a camouflaged frog to high school students (B).