Project Update: January 2019

Activities

To achieve the goal of this project, we have conducted fieldwork in October and November 2018 in Valohoaka, a primary forest in Ranomafana National Park (21°02' - 21°25'S, 47°18' - 47°37'E), Madagascar.

The following activities were undertaken to address each of the objectives:

- At the beginning of the work, we have localised all trees >5 cm DBH infected by the mistletoe Bakerella spp. in the pre-established 1 ha plot and also along the trails in the study site. We took note the presence of fruits and/or flowers of the infected trees and of Bakerella.
- We chose to watch 15 trees with fruiting mistletoe during the day and at night to observe the feeding behavior of all frugivore visitors; we especially noted the number of fruits of host and/or Bakerella removed and the occurrence of dispersal through defaecation.
- To collect Bakerella seeds in the faeces of nocturnal lemurs for germination tests, we captured mouse lemurs (*Microcebus rufus*) for four consecutive nights in October and November using 30 Sherman traps. We also searched feces of lemurs around the watched infected trees.
- We performed germination tests in petri dishes of *Bakerella* seeds extracted from lemur faeces to compare their germination rates with those manually removed from ripe and unripe fruits fallen on the ground.
- We sampled the vegetation <50 cm high surrounding the 5 m of all localised infected trees as well as the vegetation around the uninfected trees of the corresponding species.



Left: Lemur visiting mistletoe: nocturnal lemur Cheirogaleus major visiting mistletoe at night. ©Zo S.E. Fenosoa. Right: Mistletoe plenty of fruits: Mistletoe plenty of unripe fruits. ©Zo S.E. Fenosoa.

Summary of results obtained from the first field season

The following is the summary of our results obtained in October and November 2018.

• We watched 15 infected trees but five among them were co-fruiting with *Bakerella* spp.

- During our direct observations, 24 bird species and five lemur species visited Bakerella spp. but six bird species (mainly the lesser Vasa parrot Coracopsis nigra) and four lemur species (mainly the brown mouse lemur Microcebus rufus and the greater dwarf lemur Cheirogaleus major) consumed Bakerella fruits.
- Six endemic rodent species (in the genus of *Eliurus* and *Nesomys*) with 53 individuals and three individuals of *Microcebus* rufus were trapped in total.
- We did not get any Bakerella seeds in the faeces of trapped Microcebus rufus but we collected 29 seeds of Bakerella clavata in the faeces of Cheirogaleus major fallen under one infected tree. We manually extracted 41 seeds of Bakerella clavata from fruits recently fallen on the ground. We performed germination tests of these seeds in petri dishes to monitor their germination and the survival of the resulting seedlings.
- We sampled the vegetation around 5 m of 59 infected trees and 41 uninfected ones including in 39 potential species.