

*Lemurs in parks, and in the parks of Madagascar:
A return ticket among zoos and nature.*

May 2006: The Giardino Zoologico of Pistoia, Parco Zoo Falconara and Parco Punta Verde of Lignano Sabbiadoro, who have up to now hosted us and lent us 'their' lemurs for 'our' research, decided to do even more. In fact, with an extreme act of faith in us they financed an expedition to Madagascar so that we could collect information on nature useful for us to confirm (or not confirm) the results of a long term study already obtained at these very zoos. Furthermore, with a sense of responsibility (not so common nowadays!), they have extended their ex situ conservation projects, which is their main objective, also in situ. Without this support, we wouldn't have been able to carry out our research in nature as, notoriously, researchers are nearly always 'broke'.

The following notes aren't a scientific report (there are congresses for those), but a diary of the most important, painful and enjoyable stages of our adventure (oops... we meant to say our research!) in Madagascar.

15 November 2006, an 11 hour intercontinental flight, Florence-Paris-Antananarivo: Tonga soa! Welcome to Madagascar (Madagasikara), the fourth largest island in the world, 'a wrongly turned omelette in the Indian Ocean' according to Gerald Durrell. Another 2 hour internal flight to Fort-Dauphin, two days in the city to buy supplies (tinned meat, cream cheese "La vache qui rit" obviously loaded with preservatives, bowls for getting washed etc.) and, above all, to do one's 'own business' before moving on.

Three hours by car through rice fields and swamps and luscious vegetation: the ravenala, the endemic palm of Madagascar, waving to us with its fan. Then, suddenly, the desert. Spangled with didieraceae their upturned hands towards the sky asking for water, according to legend giving life to the prickly forest, an ambience present only here, and that, despite its inhospitable appearance, welcomes some species of Lemurs (the original pre primates of the island) like for example the diurnal Lemur Catta (maki) and the Propithecus verreauxi (sifaka) and the nocturne microcebi (tiny primates that you can hold in the palm of your hand). We refresh our lips with our tongues: it must be over 37°C, the temperature of our bodies.



Sifaka (left), prickly forest and Maki (right)

Just another hour and here we are in Berenty.



*Entrance to the reserve (centre) and two lemurs: the nocturne *Lepilemur mustelinus* (left) and the diurnal *Eulemur fulvus* (right).*

Berenty is a tunnel forest in the middle of nowhere, au-bùt-du monde to use a french expression: a green fragment on the river Mandrarè, which perturbs a uniform stretch of prickly agavi like the red desert that accommodates them. Only some baobab form a sentinel. In realty, that stretch was once a forest, it was then cut down to make room for the agavi used for the production of fibre, sacks and other commercial products for exportation.



Tunnel forest (left), river Mandrare and baobab (Adansonia rubrostipa, right).

We came this far because this is where the lemurs live, and these are the animals we study. There are a lot of Lemurs here: groups of sifaka eat unconcerned on the Tamarindo (Kily) and Ficus (Fihamy) trees, troops of maki patrol the territory cheekily waving their tails to intimidate their oppononets, while groups of gidro (Eulemur fulvus) jump noisily from one branch to another. This is paradise for a primatologist... at least at first sight.

18th November: research starts. Wake up call at 4.00 in the morning, with the lemurs of course. A frugal breakfast of bread (already stale), jam and coffee prepared in an Italian coffee machine, carefully imported from Italy. Binoculars, note pads, pens, tape recorder, GPS, camera and water, lots of water, as much water as our rucksacks can carry.



Ivan (left), group of maki and Elisabetta (right)

But it's not that simple: In order to carry out research on primates, it is necessary to carry out research first of all, in a literal sense, on the most adapt groups to study. The best groups are those that are visible and easy to follow for the majority of the time (until they get lost in the meander of the forest), distinguishable from the others by one small characteristic... that only an expert eye can see. Old scars, bald patches (caused by alopecia which strike lemurs that eat exotic plants) and, on the maki, "featherless" tails in place of the typical black and white ring tails, that are particular signs which help us to distinguish one individual from another. For the sifaka we are helped by the presence of two albinos, Bianco and Bianca, who together with other individuals with brown hoods of various tones (Milkcoffee, Cappuccina, Bruno and Bruna), make up an easily recognizable group.



Two of "our" sifaka: Bruno (left) and Bianco (right)

At 10.00 and over 40°C, the lemurs are already asleep and it's time for us to have lunch, work and discuss the first information collected. Before the lemurs awaken we are ready and waiting to start our observation until late afternoon (17.00- 18.00), when the animals begin to look for a tree to sleep in. Fresh and completely relaxed after a day of walking after the jumping lemurs in oven-high temperatures, it's time for us to get washed (a soluble tablet of disinfectant thrown into a bucket of unfiltered river water and voilà... our shower) and time to quickly prepare dinner; quickly because at dusk the blatte, that are typically nocturne, wake up, and an invaded kitchen is no longer useful. But we are not to be disheartened : we are too hungry and "us monkeys" always find a solution.



The "shower" (left), nouvelle cuisine (centre) the kitchen (right)

As soon as our hunger has been spent, we can go straight to bed and fall "as a dead body falls", in a sweltering, sweaty sleep.

Day after day the more the information on the two species that interest us the most (maki and sifaka) grows, the more our experience grows, it gets easier to follow the animals, recognize them, record their behaviour and gather data in excellent timing.

22nd November: They do it! They do it in nature too! Finally we have confirmation that lemurs use their urine to mark their territory, especially in the presence of intruders, a kind of "stay away, this is my territory"! This kind of odorous marking, difficult to notice and distinguish in natural conditions, couldn't have been studied without a preliminary observation in captivity on groups that can be monitored continuously and up close. We find out, for the first time that the behaviour used in captivity is also effective in nature and has the same value and function.

27th November: "Salama (Hi!), we are alive and well". This is the text message that we manage to send with a faint signal by Orange, the mobile phone company for the first time in the history of Berenty give us this unexpected gift, a weak link to civilization!

30th November: Rain!!! It's the first real, heavy rainfall of the humid season, which is late this year. The very dry earth can't absorb the water and the roads become real streams. This is great for the inhabitants of the villages around the forest, who can maybe start cultivating manioc, sweet potatoes, pineapple and other vegetables to eat or dry out for the following season. However, the rain isn't so good for us. We can't follow the lemurs on a raft! But we participate in the joy of the people, for which there is much more at stake than a research...

2nd December: One thing leads to another. Exploring the forest looking for our sifaka we notice an excessive massing of groups in small portions of the

*territory, with a particular prevalence of males. To understand whether this first impression was legitimate we decide that it is worth trying to count and determine the gender of every sifaka in Berenty. In the end, out of 49 identified groups of sifaka, the great majority is effectively composed of males thus indicating most probably that the population of sifaka are not so good in health, maybe a result of the repeated droughts in the past few years, or because of the excessive growth in the population of the *Eulemur fulvus*, a species not originally from Berenty.*

13th December: We leave Berenty and this adventure, during which we weren't alone. The "gardener" Nzaka and his wife Genevieve helped us to resolve many small (big) daily problems (cisterns of water to be filled, t-shirts to be washed etc.) not accepting money in exchange, but goods that are much more valuable for them (slippers, carafes, t- shirts and other objects, real treasures for those who live in the villages outside the forest). The students of Antananarivo, Josia, Donald, Sahoby and Nirina, who were there doing research on the gidro??, shared their experiences in Berenty with us and together with their companions we joined in with pre-Christmas concerts and local traditional music with the sound of the guitar, tambourines and the valiha (a typical instrument from the high planes). Danny, Madame Rakotomala and Monsiuer Alain, the organizers for foreigners in Berenty, gave us indispensable support in resolving typological problems (transportation of water, transport to the village to get supplies, etc.) But it's time to go: happy to return to Italy, sad at leaving Madagascar. Veloma Berenty! Goodbye Berenty!

Elisabetta Palagi, research doctor in evolutionary biology and responsible for the vertebrate section of the Museum of Natural History and Territory at the University of Pisa. She has been studying lemurs and other primates since 1992. E mail: betta.palaga@museo.unipi.it

Ivan Norscia: research doctor in evolutionary biology, and scholarship holder at the Museum of Natural History and Territory at the University of Pisa. He has been studying lemurs since 2001. E mail: norscia@lunet.it



Group photo with the students of Antananarivo, Genevieve and Nzaka (right sitting with Betta) and Stefano Kaburu, a graduate student in Italy (standing on the left).