



This *Phelsuma klemmeri* demonstrates a possibly symbiotic behavior with arthropods that we observed during the expedition.

TRAVELOGUE

The Day Geckos of Madagascar

Michael D. Kern

Photographs by the author.

During the summer of 2006, I was fortunate enough to join Emmanuel Van Heygen and the Exo Terra Expedition to explore remote areas of Madagascar in search of *Phelsuma* (Day Geckos). Specifically, the team sought to better understand the habitat and behavior of the species in this genus and, if lucky, repeat the success of the 2004 Expedition to the same region, discovering and documenting a new species.

Phelsuma, or Day Geckos, as the common name implies, are among the few gecko genera that are almost completely diurnal. Because they also can be fantastically colored in vibrant

greens, yellows, reds, and blues and have been successfully bred in captivity, they make for a good show in a home terrarium. *Phelsuma* can be found throughout the islands of the West Indian Ocean, although Madagascar is home to the greatest diversity of species. Our focus was on the northwestern region of the country, specifically the Ambasidava Peninsula, an area that still contains a reasonable amount of primary forest and bamboo thickets, excellent *Phelsuma* habitat. Plus, due to the difficulty of access to the region, it has not been heavily explored and is rarely visited by tourists — making it an ideal area to search for a new species.

Once in Madagascar, we had to travel by boat, because no roads lead to the places we wanted to explore. Within a day of landing in Nosy Be, we were on the water heading toward the Mozambique Channel hugging the northwestern coast, entering rivers and heading as far upstream as possible to the target areas that had been identified through knowledge gained from previous trips, data gleaned from maps, discussions with people who had recently visited or lived in the area, and satellite images downloaded from Google Earth.

Two members of the four-member team, Emmanuel Van Heygen and Achim Lerner, had journeyed to this region in 2004 and had discovered and documented a new Day Gecko species, *Phelsuma vanheygeni*. Within the last decade, a new species of Lemur also had been discovered in this area, bolstering our hopes that another new species of *Phelsuma* could be found. At the very least, we knew we would learn more about the herpetology of this relatively unexplored region.

Our first sighting of *Phelsuma* occurred immediately after our arrival in Nosy Be, an island north of the Madagascan mainland. Here we found both the abundant and beautiful *P. laticauda laticauda* as well as *P. dubia*. The hunt was not particularly difficult, as *P. laticauda* readily exploited human habitats. Within a few



Children take advantage of the low tide to hunt for seafood along the southern coast of Nosy Be.



Emmanuel van Heygen and Achim Lerner plot the course for the expedition using maps, GPS, and pictures from Google Earth.



A baby *Phelsuma madagascariensis grandis* perches on a leaf to survey its surroundings.

meters, we also found a hatchling *P. dubia* shedding, possibly for the first time. The vibrant blue dots only seen in juveniles were readily apparent beneath the shedding skin. We had only just arrived, and were already surrounded by exotic geckos!

Our first stop on the mainland was Ankify, which has roads that lead to large areas covered by untamed bamboo thickets. After only about an hour of searching, we found the boldly col-

ored *P. klemmeri*, which we were able to confirm lives mostly in and on the dead brownish-yellow bamboo. At the time of the first sighting, several expedition members were trying to capture a Madagascan Hognose Snake (*Leiobheterodon madagascariensis*), for which they had set aside a magnificently colored caterpillar. With the discovery of the *Phelsuma*, however, the snake was stashed in a backpack for later study, the caterpillar quickly for-



The floor of the bamboo jungle presents a number of challenges and surprises including this Madagascan Hognose Snake (*Leiobheterodon madagascariensis*).



What this Oustalet's Chameleon (*Furcifer oustaleti*) lacks in size, it makes up in beauty.



Three members of the team relax at our Besovana campsite.



Although we did not realize it at the time, this Forest Night Snake (*Ithycyphus perineti*) was on the hunt. Note the frog hiding in the bamboo in the lower right corner of the upper frame. The snake completely ignored us during the hunt and throughout his meal.

gotten. Emmanuel's father, Guy, was filming the adventure while I was happy taking still shots as the action unfolded. We also found several species of Chameleons, including a distinctively marked *Furcifer pardalis* and the giant *F. oustaleti*. Ankify was the last contact with civilization we would have for the next ten days.

Our next major stop was outside the small village of Besovana. While seeking a suitable place to set up camp, we found the first *Phelsuma vanheygeni*. A campsite near a small stream gave us an opportunity to clean up and cool down from the hot and humid equatorial climate. Better yet, the campsite was surrounded by unspoiled bamboo. Our frequent treks from camp to the field were short — and almost immediately productive. We would venture out in the morning as animals began to bask, return and rest while geckos retreated from the extreme midday heat, hike out again during the later afternoon as temperatures began to drop, and journey out again after nightfall in search of nocturnal creatures. We spent four days in this region because of the density of Day Geckos. Species sighted included *P. vanheygeni*, *P. klemmeri*, *P. seippi*, *P. laticauda laticauda*, and *P. madagascariensis grandis*. We also saw geckos in the genus



The recently discovered *Phelsuma vanheygeni* lives on green bamboo stalks. When threatened it retreats into thickets of branches to hide.



The morning dew forms on a bamboo plant showing how geckos, chameleons, and other creatures get the water on which they depend.

Lygodactylus and tree frogs of the genus *Mantidactylus*. A *Phelsuma* fantasy come true!

Also, we observed an unusual behavior in *Phelsuma*. Many individuals of several species were found positioned directly below a moth or cicada, almost touching them, and lying perfectly still as if in a trance. We suspected some form of symbiotic behavior, which will require additional study to fully understand. Additionally, we confirmed that *P. vanheygeni*, unlike *P. klemmeri*, which makes its home on dead bamboo, prefers living on green bamboo. Typically, *P. vanheygeni* also is found higher in the denser vegetation of the bamboo stalks. Before we left the area, the team was treated to a display of the hunting tactics of a local colubrid snake, *Ithycyphus perineti*, that ignored us as it moved from branch to branch on its way to a frog hiding in a broken bamboo branch. Only after the snake quickly struck the unsuspecting frog did we realize that it was “hiding” in plain sight right in front of us.

While camping in Besovana, I finally learned to appreciate the unique local climate and moisture patterns. As nighttime temperatures drop substantially, the atmospheric humidity is converted into water droplets. The result is so dramatic that, on many nights, I thought rain was falling on my tent. By morning, everything is soaked. Drops of moisture have formed on each leaf of every tree, giving the chameleons, geckos, and other wildlife a plentiful and renewable source of drinking water.

Hunting *Phelsuma* in dense bamboo thickets is an adventure in itself. The floors of the thickets are covered a foot deep in leaf litter and broken bamboo stalks. Each step could startle any creature away or, worse yet, the stalker could be impaled on



A pair of camouflaged Leaf-tail Geckos (*Uroplatus henkeli*) sleep, well hidden in the primary forests of Madagascar.



This Madagascar Leaf-nosed Snake (*Langaha nasuta*) was one of the most interesting snakes found on the Expedition.

one of the many spear-sharp bamboo stalks standing upright at knee to waist height, resulting in an injury that could prove lethal in such a remote part of the world. So, you move slowly, quietly, and as carefully as you can. Teams of two are best to quickly trace each stalk and branch up and down and side to side, alert for slight movements, flashes of color, or anything that appears abnormal. Most geckos will see you first and quickly



We found several rare “Pink Panther Chameleons” (*Furcifer pardalis*) during this trip.

hide but, if you wait quietly for a few minutes, they often return to their previous basking spots and into clear view.

The journey continued to Ambaleha, a large river village of around 100 huts. Here we would climb to an elevation of nearly 400 m to get to a part of the remaining primary forests of Madagascar. Since our arrival time had been dictated by Mother Nature’s tides rather than our comfort, the grueling hike took place during the heat of the day. The climb was worth it, however, for not only did we find primary forest where we were excited to find a sleeping pair of Leaftail Geckos (*Uroplatus henkeli*), but we also found more bamboo! At this campsite, we found several species of snakes, including the always-interesting Leafnose Snake (*Langaha nasuta*) and over seven different species

of geckos. We also were pleasantly surprised to find a Pink Panther Chameleon, a unique variant of *Furcifer pardalis*.

Our final campsite was by a river in the village of Jungua, where we were presented with an idyllic scene. Some men were readying the large village fishing boat, while others paddled upstream in their one-person pirogues. Women were washing clothes, men and women were bathing, and children were running, playing, and splashing under the morning sun. For all its simplicity, the village had generator power; so, at the end of the day, we could venture over for a slightly cooled drink. We found many of our old friends (*Phelsuma vanheygeni*, *P. klemmeri*, *P. seippi*, *P. madagascariensis grandis*, and *P. laticauda laticauda*), but were unable to identify and document another new species of *Phelsuma*.

We did, however, gain new insights into the lives of geckos in the genus *Phelsuma*. We learned more about the distributions of several species and developed a better understanding of the natural history and behavior of others. Sadly, the ongoing loss of primary forest probably will affect the viability of many of Madagascar’s endemics, but we take some solace in the fact that the many species of *Phelsuma* that live in the bamboo are safe for now and appear to be reasonably abundant. Much still remains to be learned and the team plans to return to the region in hopes of identifying new species before they are gone and find answers to questions that will lead to a better understanding of these rare and beautiful creatures.

For more information, including additional photos and video from the Expedition, visit the Exo Terra website (www.exo-terra.com).



The Jungua River is a major resource and center of activity for this small village in Madagascar.