

# Diary of a mantella man

FEATURE | MANTELLA MAN



Searching for the critically endangered golden mantella (*Mantella aurantiaca*) at the Menalamaba locality.



Mantellas are very small, and far from conspicuous in their native habitat.



▲ One of the more demanding treks you can go on is in the Mitsinjo Forest Reserve.

be like. We finally arrived at the forest entrance; I stopped for a moment to admire its utter unspoiled beauty, before carrying on.

The winding path alone revealed an incredible diversity of fauna and flora. I couldn't believe what I was seeing. Our first encounter with an amphibian involved a species of frog that was similar in size to a mantella species, looking very similar to *Mantella betsileo*. It turned out to be a member of a different genus, called *Mantidactylus melanopleura*. We watched it for awhile, as it moved through the vegetation, until it disappeared.

Carrying on our hike, the pathway became steeper and steeper and much denser, thanks to the foliage surrounding it. Suddenly, my guide stopped unexpectedly. I almost ended up knocking him over in the process and instinctively apologised, but without speaking, he simply pointed towards the foliage. I stared hard, scanning the area until I spotted a tiny movement that revealed what he had found.

It was a stunning brown horned pygmy chameleon (*Brookesia superciliaris*). I grabbed a nearby stick and the lizard climbed upon it, allowing me to study it more closely. Even though it is not the smallest species of *Brookesia*, it was still

▼ An Indri lemur in the Madagascar forest.



## Adventures in Madagascar

Joshua Ralph fulfills a long-time ambition, and heads to the Mitsinjo Amphibian Breeding Facility in Andasibe, Madagascar, from where he sends this report.

### Introduction

It had been a dream of mine, ever since I was a young boy of seven years old, to travel to the mysterious island known as Madagascar that lies off the east coast of Africa, and has the title of "Island of Marvels". This country is home not just to an incredible range of fauna and flora, but it also boasts some of the most unique wildlife on the planet. The island offers some of the most dramatic landscapes as well, in addition to being one of the world's most significant biodiversity hotspots, attracting increasing numbers of botanists, ornithologists and herpetologists.

For me, it all started when I saw some old black and white clips during a BBC documentary with Sir David Attenborough. I sat watching Sir David walking around woodlands and climbing trees to show viewers different species of chameleon. I remember wondering

► In spite of the island's position close to Africa, the wildlife on Madagascar is generally unique, being found nowhere else.



All photos except p38b, p39t, p39br, p40-41t: courtesy of the author.

where he was and then the caption appeared on-screen, explaining that it was footage from a programme entitled *Zoo Quest to Madagascar*, which had been broadcast in 1961.

That was it! I had to learn more about this strange place so I grabbed my children's encyclopedia, and began flicking through the pages until I did discover something about Madagascar. Little did I know then that what I found would change my life completely, shaping my entire future, and driving me to pursue a career in the field of zoology.

I saw these incredibly small but brightly coloured species of frogs that were described as mantellas. They were so beautiful that it started a passion that before long had expanded to embrace all the wildlife endemic to this amazing island. And now, I finally had the opportunity to go there for the first time in my life.

● **Dateline March 1<sup>st</sup>, 2015: 12.30pm to 5.25pm. Mitsinjo Forest, Andasibe – into the forest.**

This is my first proper day in Madagascar. Journeys around the island can be slow, and it had taken me all of the previous day to travel from the capital Antananarivo to Andasibe. Now I am

ecstatic to have reached my destination, and with all the excitement, I was up ready to go at 6.30am - hours earlier than was needed!

After a relatively short day at the facility for my first day, I started to walk back, stopping at the reception area beforehand so I could check the prices for the guides and see the different tours that are available. In a moment of spontaneity, I decided to try my luck and enter the forest to find the famous Indri lemur (*Indri indri*) and more importantly to me, any species of reptile or amphibian that happened to be there.

I had been listening to the siren-like calls of these lemurs for most of the morning, but I had never anticipated that they would be so easy to hear and also, that the lemurs would be so near! I decided, much to the shock of my guide, that I would go on the 4-5 hour hike, even though I had still not fully recovered from the flights of the previous day.

### Initial sightings

So, we headed off into the forest, and I was keen to locate the wildlife that I had dreamt about seeing for so long to see. My head was an assortment of different thoughts and I was curious as to what it



A lot of species in Madagascar are yet to be given common names, just like this *Mantidactylus melanopleura* specimen that I found in the Mitsinjo forest Reserve.

unbelievable how tiny it was - yet obviously, it has everything it needs to live - a miniature heart, liver, lungs, everything... Truly amazing! Its horns above the eyes nevertheless looked quite imposing.

After this encounter, my guide then disappeared into the forest saying that he was going to look for the Indri lemurs and would work out which route we should follow, to have the best chance of finding them...

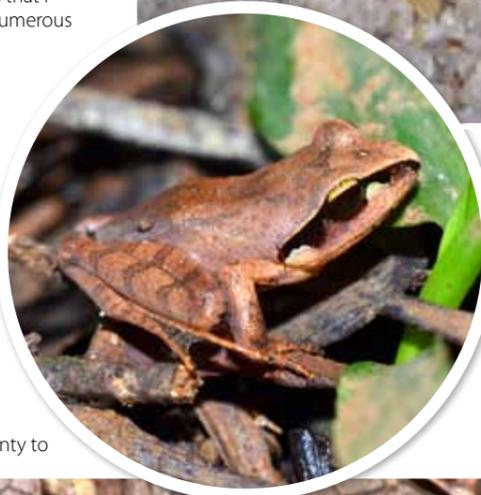
### An amphibian paradise!

After 10 minutes, he returned and pointed me in an easterly direction, so we carried on making our way through the forest. I was eager to see more species as we headed off again. I didn't have long to wait either. All of a sudden, we left the forest and emerged into an open area with an incredibly large pond at its centre.

A huge chorus of both anuran and invertebrate calls literally rang in my ears as I stood there. It really was that loud! We were then in an area known as the Parc des Orchidee (Orchid Park) and amphibians were everywhere around us.

The most common species that I spotted, which is incredibly numerous within its distribution, is the Madagascan jumping frog (*Aglyptodactylus madagascariensis*). This is a species that I had seen before in many different books, but never in life. Males undergo a remarkable colour change before the breeding season, being transformed to a beautiful bright yellow or orange, reminding me of the colours of a canary.

There wasn't just a solitary male here or there. We must have seen approximately twenty to



▲ *Boophis* species of tree frog can also be vividly coloured, like mantellas.

Left: The Malagasy jumping frog (*Aglyptodactylus madagascariensis*) is incredibly common within its distribution range.

◀ A pygmy horned chameleon (*Brookesia superciliaris*) that we stumbled upon in the undergrowth, concealed by perfect defensive camouflage.

thirty specimens in total; it was an awe-inspiring sight, and definitely one of the highlights of the walk for me.

Sadly, the time passed very quickly, and before long, we had to head back to the entrance to the forest. It was a wonderful introduction to the biodiversity that exists on the island. It truly was an enthralling first time out in the forest, and I simply couldn't wait to explore more of the island...

### ● Dateline March 3rd, 2015: time 06.36am Menalamba, Torotorofotsy Wetlands - in search of wild mantellas

Four days into my adventure to Madagascar and with only two weeks (at most) left of the breeding season for mantellas in the wild, I decided that I would take the chance to see if I could find wild specimens of both the golden mantella (*Mantella aurantiaca*) and yellow mantella (*Mantella crocea*) in their severely fragmented distribution areas in the Andasibe region.

So after hiring a recommended guide, Fano, and a local guide called Rennie, Devin Edmonds and myself decided to travel to the Torotorofotsy Wetlands, and started our hike to the Menalamba area (which translates basically as 'red cloth' in Malagasy). This is known to be a locality of the critically endangered golden mantella (*Mantella aurantiaca*).



### Boggy surroundings

The route we followed was along an old, abandoned train line that had been used to transport timber for years from the Torotorofotsy region. The route was now obviously abandoned, apart from the odd small collection of huts along the way. It was also flooded in parts, because of heavy overnight rain that had saturated the soil. It made walking difficult, causing us to slip and sink into the resulting mud.

After a short hike of some 45 minutes, we reached the sign informing us that we were now about to enter the Torotorofotsy Wetlands. However, before I could begin my eagerly awaited search for the mantellas, one major obstacle lay ahead. We had to cross an insecure makeshift bridge about 7.6m (25ft) in length, above a now fast-flowing stream.

A mixture of thoughts and emotions went through my mind. It brought home

▲ Most of the primary rainforest left outside the reserves can be found on the tops of hillsides, like this area that I saw on the way to the Torotorofotsy.



A golden mantella (*Mantella aurantiaca*) breeding pond, but Joshua's trip took place towards the end of their breeding season in the wild.



A female golden mantella (*Mantella aurantiaca*).

the reality of the situation and the risk, but there could be no turning back, now that I'd come this far! In fact, I had quite a sense of exhilaration once we were all safely across. Years after I first saw these frogs in my children's encyclopedia, I was finally there, at the famous and most studied site of the locality population of the golden mantella.

The woodlands were not only boggy because of the rains, making perfect breeding habitat for this species, but the trees and shrubs themselves were also incredibly close and dense. This made it very difficult for someone of my height to traverse the area without getting caught up in branches.

We searched and searched, listening intently for the highly recognisable calling of the species, under the calling of multiple other species of amphibians, including members of the *Boophis* and *Guibemantis* genera and more, but to no avail. I studied the breeding ponds closely, peering into the water to see if tadpoles were present. However, all that I could see were *Mantidactylus*-like offspring.

### Moving on

After an hour of fruitless searching, I made my way back to the pathway and met with Devin. We discussed our options and decided to move on to the next locality. We called out to our guides. They responded by beckoning us over to them.



Rennie, the local guide who only spoke Malagasy, informed us that his colleague Fano had succeeded and found specimens.

This was incredibly exciting, and I headed in haste in the hope of fulfilling my childhood dream. Each step felt like time had slowed, as if my mind was savouring this historical moment, until finally, I came across Fano kneeling upon the floor guarding and protecting the two most beautiful golden mantella specimens that I had ever seen. These were a completely different colour to what I was used to, being a much richer shade, and they were bigger in size as well.

I stood in awe at first, and then crouched down to get a better view, photographing them at the same time to capture this unforgettable moment. They were a true pair, and apparently, the male could have sensed the disturbance in the area, because he was only calling in unusually short bursts. Nevertheless when he had stopped at one stage, the female emerged and was spotted by our guides. It had taken Fano and Rennie an entire hour to track the pair down on the forest floor.

I spent 20 minutes studying the frogs and admiring their elegance and beauty. Interestingly, apart from the difference in their appearance, both were different in their colouration. Eventually, I knew it was time to go, as I did not want to stress them unnecessarily.

The walk back was full of promise, but also made me wonder what else we might find that day, as we still had the possibility of discovering more mantellas at the next locality, not to mention on our hike through the Mantadia forests.

**● Dateline March 3rd, 2015: time 10.08am**  
**Bakozetra, north of the Torotorofotsy Wetlands – seeking wild yellow mantellas.**  
The day was still relatively young as we headed off again, in the hope of tracking



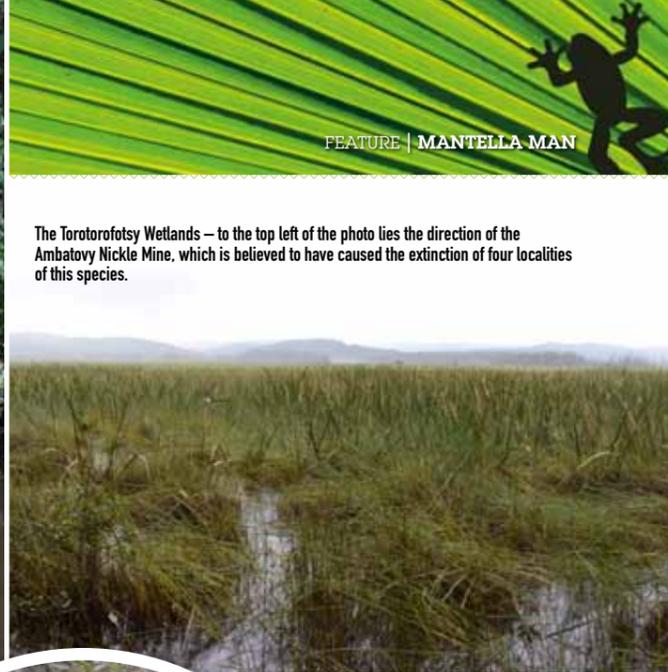
▲ It took a long time and a lot of patience, but we finally found a true pair of golden mantellas (*Mantella aurantiaca*).

➤ Joshua with his dream realised.

▼ These mantellas are not so much golden as orange-red in colour. This may be the result of their diet or genetics – or a combination of both of these factors.



Our entrance into the Menalamba locality of the Torotorofotsy Wetlands.



The Torotorofotsy Wetlands – to the top left of the photo lies the direction of the Ambatovy Nickle Mine, which is believed to have caused the extinction of four localities of this species.



stumbled upon next. Walking through the brush, I almost lost my footing and landed partly in a deep square-shaped hole. I knew what this was immediately, but as we were in the protected area that was patrolled, so I hadn't thought that we would encounter one of these excavations. It was a 6m (20ft) deep shaft dug by gold miners.

This is apparently very common, however, according to my guide. Worryingly, it also appeared to be a new hole. Part of the problem is that in areas where golden mantellas are to be found, so local people believe there is gold. The view is that veins of gold can be found beneath their breeding ponds, accounting for the frog's colouration. Of course, there is no link, but unfortunately, sometimes gold has been found in these localities, reinforcing the rumour, as well as posing another direct threat to the survival of these beautiful amphibians.

▲ A gold mining shaft in a protected area.

down yellow mantellas in the locality of Bakozetra, which is just north of the Torotorofotsy Wetlands. However, first we went to another locality where golden mantellas are known to exist. This represents a bigger site than the one we had just visited, being home to many more specimens.

After our success earlier that day at the Menalamba locality, we decided to make a detour in the hope of finding members of the Torotorofotsy Wetlands population. It was a short drive away, and it took us 10-15 minutes down some more dirt tracks

to reach our destination. When we finally arrived, it was immediately clear that this was an entirely different environment, which was interesting as it was much more like rainforest than boggy marshland.

### A hidden trap

Heading off with a spring in my step, I soon began to hear what I thought was calling coming from towards the stream. I waited a short while, and was full of excitement in the anticipation of potentially hearing that beautiful call. However, I wasn't prepared for what I



➤ A wild Malagasy lemon orchid (*Aerangis citrata*) at Bakozetra. The flora on the island can be spectacular.



◀ Malagasy yellow-striped water snake (*Lopholidophis lateralis*) – formally regarded as a member of *Thamnophis*, the garter snake genus.



The fall distracted me for a few moments, before I finally heard that call I was so familiar with from keeping and breeding this species. I motioned to Rennie, using the word 'mandre' (which is Malagasy for 'hear') and we headed towards what we thought was the direction of the sound. After 20 minutes of searching, however, we discovered that it was in fact an entirely different species of frog, with an almost identical call to the golden mantella, although it was to be found up in the tops of the surrounding pandanus trees.

Following this disappointment, I decided to call off the hunt to locate more golden mantellas and to move on instead in the hope of finding the yellow mantella at Bakozetra. One lasting image that I have though is the destruction that people are still causing to the environment. It is one thing designating an area such as the Torotorofotsy Wetlands as a protected reserve, but quite another to protect it effectively from on-going deforestation and habitat destruction.

### A snake that hunts amphibians

After dropping Devin back at the edge of Andasibe village, Fano and I headed towards to the locality known as Bakozetra. This location is sometimes misnamed as part of Mantadia National Park. I was still buzzing with excitement from our earlier encounter with the pair of golden mantellas, but I also had to accept the fact that realistically, it was pretty much the end of the breeding season, so the chances of success again, with yellow mantellas, were not high.

It took approximately an hour to reach the base camp, but it seemed a much shorter journey however, as exhaustion kicked in and I fell asleep at several points as we drove along. Once we started our descent down the mountainside, with the local Indri lemurs providing a musical accompaniment, thanks to their whale-like vocals, we came across many different species, including my first sighting of a snake.

It was a striking and delicate-looking Malagasy yellow-striped water snake

(*Liopholidophis lateralis*). I encountered it in the most unusual place, quite near to the top of the mountain, but clearly there was a purpose in its presence here. These snakes are recognised as batractivores (frog-eaters), and they often tend to follow anurans (frogs and toads) up the mountainside.

We moved on and saw many other species of flora and fauna, including a spectacular blooming Malagasy lemon orchid (*Aerangis citrata*), as well as Malagasy green burrowing frogs (*Scaphiophyrne marmorata*) and an anuran species I did not recognise.

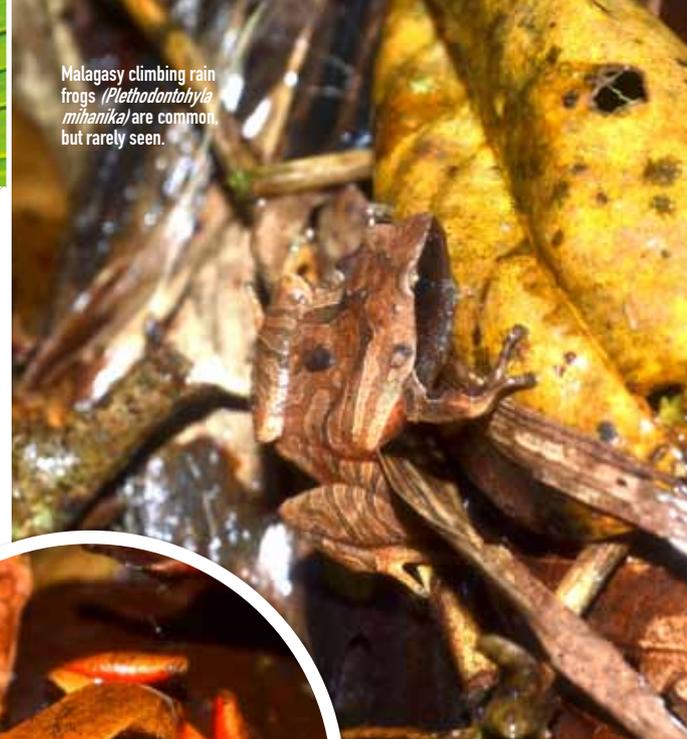
After a 30 minute trek, we reached the first site of the local yellow mantella population. Unfortunately, after searching and searching, we simply could not find any specimens at this site, although we did find other species such as Malagasy climbing rain frogs (*Plethodontohyla mihanika*) and Malagasy jumping frogs (*Aglyptodactylus madagascariensis*).

### A difficult journey brings reward

We therefore decided to move to the second and final breeding pond and at this point, it started to rain incredibly hard! Drenched, we proceeded to cross a small yet increasingly fast flowing river that you could only get over by traversing a slippery 9m (30ft) log with no ropes or any other support. Let's just say... I discovered that I definitely have good balance, even with my hiking boots on.

After 10 more minutes, we arrived in a denser area of vegetation with a pond. I began to make a start searching through the leaf litter, fallen lengths of bamboo, rotten logs and other debris on the forest floor. Then I spotted the characteristic movement and flash of colour that I was looking for – I'd finally found an example of the endangered yellow mantella.

Its colouration, however, was



Malagasy climbing rain frogs (*Plethodontohyla mihanika*) are common, but rarely seen.



▲ Yellow mantella (*Mantella crocea*) from the Bakozetra locality.

completely foreign to me; it was more of a reddish-yellow colour with glorious red flash marks, which is a trait carried only by wild specimens. I carefully picked it up to examine more carefully, and immediately it displayed the characteristic behaviour of thanatosis - playing dead. This helps to protect these frogs from predators that then ignore them, so they can escape later. The behaviour of this individual allowed me to see the beautiful colouration on the ventral side of its body.

We found a further four specimens in that locality, and satisfied with the results of the trip, we headed back before it got dark. Once we arrived at the Jeep, Fano proceeded to take off all the leeches had anchored on to him, which thrive in these humid surroundings.

I checked myself and could find nothing... Then once out on the road, I noticed the top left breast of my long-sleeved top had turned a dark red. I then spotted an engorged leech crawling away and lifting my top, I noticed blood running down my side. But this was a small price to pay to have finally been able to realise my dream of finding mantellas in the wild. ❖

▼ 1: A yellow mantella playing dead.

2: Joshua with one of the yellow mantellas.

3: Many species of Arthropoda in Madagascar are yet to be named commonly or even scientifically, just like this pill millipede.

