

the **BIG** news



Newsletter of the Gauteng and Northern Regions Bat Interest Group
Issue #64 - July 2015

Editor: Trevor Morgan

Abe Bailey Nature Reserve

Bat outing of the weekend of the 19th April 2015

Friday Arrival

After meeting up with those of the group that got there on Friday, we went to the first cave, Abe Bailey cave.

The entrance to the cave was well guarded by two barn owls, who watched over the proceedings with beady eyes.



Impressed Geoffroy's horseshoe bat
Photo: Leon de Kock

A harp trap was rigged just inside the cave entrance, and we were successful in catching four *Geoffroy's horseshoe bats* (*Rhinolophus clivosus*) and a single *Natal long-fingered bat* (*Miniopterus natalensis*).



Unimpressed Natal long-fingered bat
Photo: Julio Balona

Facilities at the Chalets were good, the rooms were clean and the communal fireplace made for a great place to sit around and chat. Sharron had volunteered to cater for those of us who wanted to be catered for, and did a great job (as always).

Saturday morning

On Saturday morning we proceeded to the next caves. The plan was to start from the furthest cave and work our way back towards base camp.

We got to Welperdiend III first though. The entrance to the cave was a straight drop and we did not have the necessary caving equipment to explore this cave.

From Welperdiend III we made our way to Bobbejan cave, which had a lot of evidence of human activity. This was not surprising, as there was a herd boy grazing his herd of cattle within the sanctuary, very close to the caves. Sadly the cave had a lot of litter and a human toilet area.

Sharron was able to collect a **Geoffroy's horseshoe bat** from the cave wall. Although there were not a lot of bats present in the cave, the warmth in this cave, together with large amount of old bat guano, led us to speculate that this cave may be used as a nursery cave.

The next cave was Welperdiend I. To get to the mouth of the cave is a bit of climb down. Outside the cave mouth Lihle caught sight of a small snake which Julio was quite sure was a **Rhombic egg eater (*Dasypeltis scabra*)**. The snake was left in a safe place amongst the rocks, to watch our activities at its leisure. The cave itself has two passages leading rather steeply down right from the entrance. The first is a sheer drop and cannot be done without equipment. The second, on the right hand side, is a much easier climb down. Here we found lots of bat activity, and unfortunately also signs of human activity. There is also a pit leading much deeper, but once again special equipment and more time would be needed to attempt this drop into the deep.

Because of the bat activity at this cave, Julio decided it would be a good place to set up the small harp trap, which we managed to do by securing the trap to various roots and rocks in and around the cave with ropes and rocks.

Heading out from there we visited Davel's cave and Dog Collar cave, neither of which was as well explored as we would have liked due to the fact that it was now getting late. I was fortunate enough to spot a magnificent sighting of an **Orange Throated Longclaw (*Macronyx capensis*)** in full colour, a new species for my bird list.



Sharron, Lihle & Caroline wait above Davel's cave, waiting to see what has been revealed by Leon & Julio's fumbling down below.

Photo: Julio Balona

Although we tried to find Cross Roads Cave, either the entrance to this cave has been blocked up, or we had the wrong coordinates. As it was now already sundown and we had to get back to camp so that Chef Sharron could prepare the night's meal, we did not have the time to search the few clumps of trees in the area to see if they might be hiding Cross Roads cave.

The big harp trap was set up between the trees close to the chalets, but by Sunday morning this trap had failed to catch any bats.

Later Saturday night saw us return by a more direct route, i.e. driving through the informal settlement, back to Welperdiend I to check up on the harp trap. A GPS, it must be said, comes into its own in the dark.

Rain clouds were packing thick and lightning was starting to threaten from all sides when we climbed down to the entrance to Welverdiend I cave. I had some difficulty with my headlight, and got to the top of the cave just in time to hear Julio saying he needed bat bags, which I handed down to him. By now it had started to drizzle, and we sat hunched against the bit of rain, hoping it would clear up. Our hope was in vain; it rained harder and harder, until I was forced to also climb down to find a place to shelter. Julio in the meantime had caught quite a few **Geoffroy's horseshoe bats** and **Natal long-fingered bats**, but after some time it was agreed that the rain was making conditions miserable, and that the bats would probably not exit the cave to feed in such a downpour.



Entrance to Welverdiend I cave. Photo: Julio Balona

De-rigging the harp trap in the dark and pouring rain was even more difficult than putting it up had been, with me climbing around the cliff face above the cave trying to untie the ropes that kept the harp trap in place. By the time we were all in the van we were soaking wet, and it was only the van's heater and the prospect of warm food and coffee back at camp that kept our spirits up.

Nature was to throw us one more curve-ball though, with the van hitting a newly dug Aardvark hole and hopping like a kangaroo, unfortunately breaking the protective casing of the harp trap. Back at camp we all headed for dry clothes and the warmth of the fire at the communal braai area.

Those of us that Sharron catered for found ourselves once again spoilt. After a hard day I was not going to chat around the fire for too long though, and soon found myself fast asleep in a warm bed.

Sunday morning

Packing up was quite a lazy event, and that only after Sharron had provided breakfast and lots of coffee. Julio had another bat to process and then Willie, the manager of the estate, dropped by to say hello.

My bird list for the weekend ended on 30 species, of which the best was by far the Orange throated longclaw. Sharron and I were also happy to get to see the **Yellow Mongoose**. Other species spotted were **Black Wildebeest**, **Zebra**, **Ground Squirrels** and a few more.



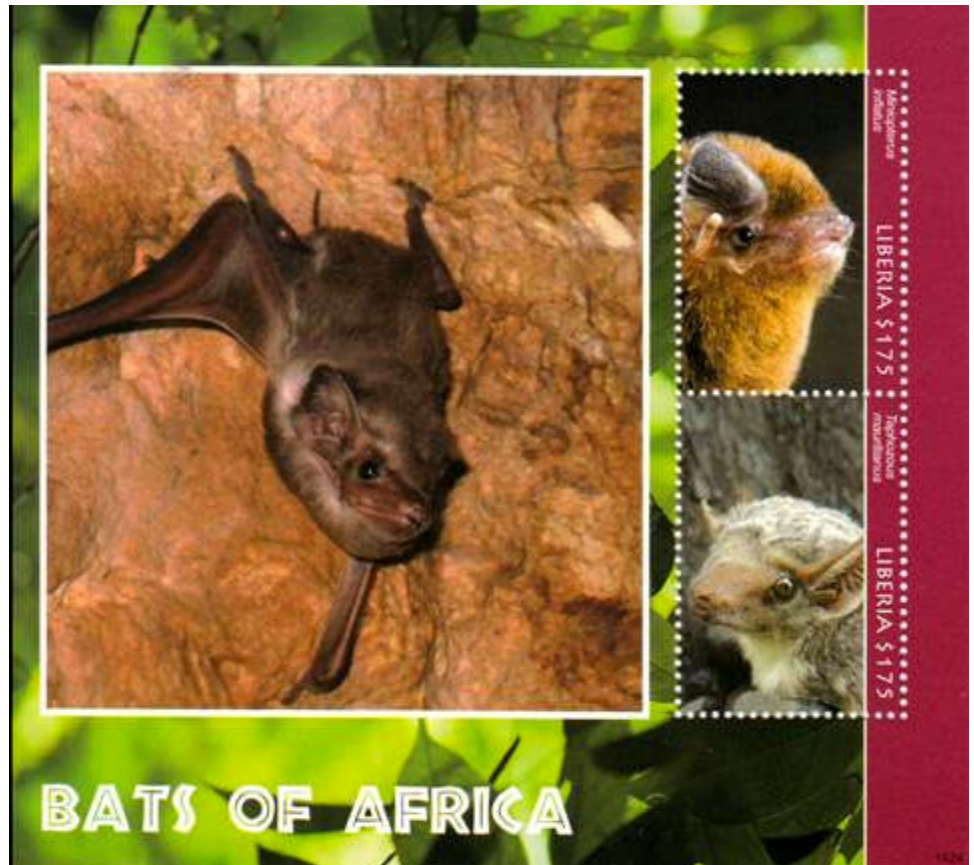
Landscape of Abe Bailey Nature Reserve. The relatively flat grasslands above give no indication of the numerous caverns that riddle the ground below...Photo: Julio Balona

By Leon de Kock

GNoR BIG photo makes it onto Liberian postage stamp

Our membership secretary Erna Balona, was surprised some months ago when she was sent the photo above. It showed a new postage stamp for Liberia based on bats (well done Liberians!).

In particular, it included one of her photos (bottom right) of a Mauritian tomb bat taken at Bateleur Nature Reserve, Limpopo.



Bat News updates

Interesting new research

by Julio Balona



American Luna moth (*Actias luna*)

Luna moths drive tailing bats

The exquisite Luna moth of North America has unusual wing tails which now appear to actually have a surprising purpose: dodging death.

Experiments conducted by biologists in the U.S. produced results strongly suggesting that the moths' wing tails which spin during flight, somehow create a confusing sonic signal or diversion for pursuing echolocating bats, allowing beauty to evade the beast...

Note that Luna moths are not restricted to North America – here in southern Africa we have a very similar and equally spectacular relative (*Argema mimosae*), and presumably its tails perform the same function.

<http://www.smithsonianmag.com/science-nature/luna-moths-gorgeous-wings-throw-bat-attacks-180954281/?no-ist>



Vampire bats: Pigs 1, Chickens 2, Humans 0.

By extracting and amplifying DNA from the droppings of Vampire bats in the Brazilian Amazon, scientists found an interesting dietary preference: about 60% chicken blood, 30% pig blood.

So it would seem that chicken was a favourite. However there are far fewer pigs present in these villages and when corrected for the ratio of availability of each animal, it was calculated that vampire bats strongly favour pig blood.

Interestingly, no traces of human DNA or wild animals were found.

<http://news.sciencemag.org/biology/2015/04/vampire-bats-have-taste-bacon>



Cloeotis and Triaenops break away from Hipposideridae family

With their fleshy noseleaf projections, the representatives of the genus *Cloeotis* with its single species *C. percivali*, and the genera *Triaenops* and *Paratriaenops*, have always been the odd ones out in the family Hipposideridae.

Now we know why: they were imposters all along.

Genetic analysis by a research group in Dublin has shown that they diverged from the Hipposiderids about 40 million years ago. The new group shall henceforth be known as the Rhinonycteridae family.

<http://www.pubfacts.com/detail/2543336/How-and-Why-Overcome-the-Impediments-to-Resolution:-Lessons-from-rhinolphid-and-hipposiderid-Bats>

High temperature hibernation

Hibernation is traditionally considered a low temperature activity, or more appropriately, inactivity. The idea being that the cold which drastically reduces food supplies, also serves to drop metabolic rates of hibernating bats since they can allow their body temperature to follow that of the surroundings without negative effect, thereby consuming much less energy.

So it was a surprise for Israeli researchers to discover colonies of two species of mouse-tailed bats, *Rhinopoma microphyllum* and *R. cystops*, hibernating in humid caves at a balmy 20°C.



<http://phys.org/news/2015-03-species-mammal-hibernating-constant-temperatures.html>

Video:

<http://www.themalaymailonline.com/features/article/israeli-research-on-bats-alters-concept-of-mammal-hibernation-video>

GNoR BIG Chairman interview on Classic FM

CLASSIC^{FM} 102.7

In early February, Tamara LePine-Williams interviewed GNoR BIG Chairman Julio Balona for her Lifestyle show. The discussion covered various aspects of bats and conservation concerns, particularly the growing threat of wind farms.

To listen to the podcast of the interview go here:

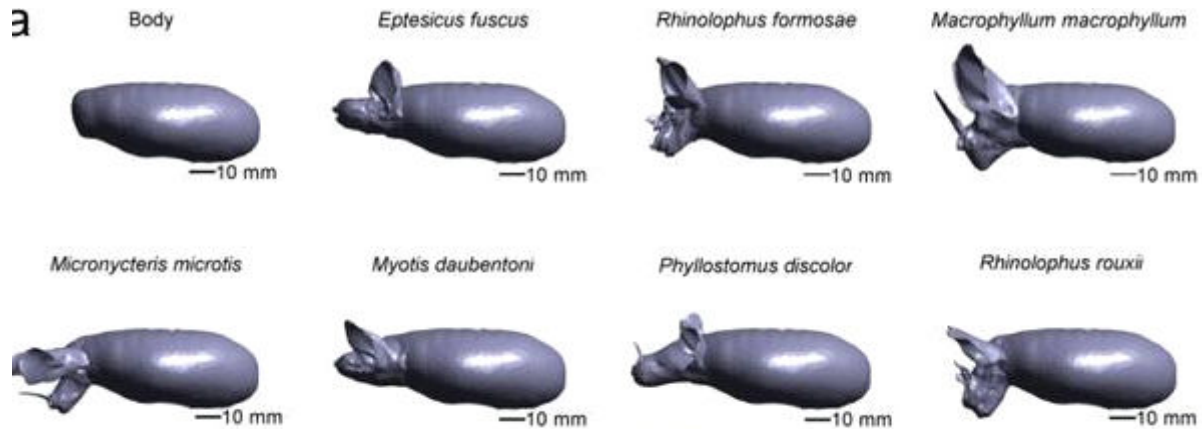
<http://www.classicfm.co.za/classic-lifestyle/podcasts/2015/february/3-february/african-bats/view>



Better understanding of bat flight through 3D printing

Although the often elaborate facial adornments of bats are a necessity for echolocation, they are clearly not aerodynamically streamlined and so have been assumed to come at a cost to efficient flight. But now research using 3D printed models of bats in wind tunnels has shown that although the drag is increased by their funny shaped faces as one would expect, it does have the benefit of increasing lift. It therefore seems that there is no net negative effect on flight performance.

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0118545>



Short-tailed bat

The Lesser short-tailed bat (*Mystacina tuberculata*) from New Zealand is an odd creature: Not only does it eat anything from insects such as large crickets, to flowers, nectar and fern spores, but it spends a large amount of time obtaining this food *by crawling around on the ground*.

Recently, scientists discovered another set of unusual behaviours. It turns out that the male bats are lek-breeders. That is, they gather in groups, each performing in a competitive effort to attract the attention of females. Apparently this mating system is only known from one other bat species (the delightful Hammer headed bat *Hypsignathus monstrosus* from central Africa). Interesting touches are that they may smear themselves with urine, and that the use of a display site is shared with only one male at a time using it.

http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11461419



www.batsgauteng.org.za

South Korea's Golden bats

A colony of Golden bats was recently discovered by scientists in the Chiaksan National Park, the first time this species has been seen in nearly twenty years. In the video report of this story the scientific name for the bat is not given but based on the long thin tragus just visible, and the shape of the ears, it is clearly a *Myotis*. In fact it appears identical to our Temminck's hairy bat (*M. tricolor*) apart from the only visible and minor difference, the dark edging around its ears. Another intriguing feature is that this bat also has unusually long thumbs, the exact adaptive purpose of which I still ponder...

https://www.arirang.co.kr/News/News_View.asp?nseq=176894



New threat to bats in roofs



Dead bats trapped in breathable roof membrane

As if the growing wind turbine industry and habitat loss are not enough to contend with, in the UK and probably Europe, a new unexpected bat killer: Breathable Roof Membranes.

This is a modern type of insulation made of polypropylene fibres which allows moisture dissipation while reducing condensation ingress, and is being increasingly used in roofs. Unfortunately they are the equivalent of mistnets in your ceiling and the result is shocking, with entire colonies of bats getting entangled and dying.

A campaign to raise awareness has now been launched by a company called Ploughcroft Eco-roof (<https://bdaily.co.uk/hospitality/25-03-2015/brighthouse-based-eco-roofers-front-bat-campaign/>), and research is being conducted by Stacey Waring of the University of Reading/Bat Conservation Trust into the issue with the aim of producing guidelines for the use of these membranes and perhaps solutions to the problem (<http://www.batsandbrms.co.uk/>).

Projects to mitigate bat fatalities at wind farms

In a positive development in the sad saga of bat versus wind turbine, several new projects have been announced by the US Energy Department.

Three projects are in the proof of concept phase:

- Surface coatings on turbine blades that somehow deter bats from approaching them
- Ultrasonic transmitters mounted along the length of the turbine blade as an acoustic deterrent
- Ultrasonic, wind driven whistles mounted on turbine blades as acoustic deterrents

And two have shown promise and are being taken further:

- An ultrasonic acoustic deterrent developed by BCI to be tested on a full scale wind farm
- An air driven ultrasonic acoustic deterrent to be tested on a full scale wind farm

http://world.einnews.com/pr_news/260055605/energy-department-announces-new-projects-to-help-protect-wildlife-at-wind-energy-plants

Test bats successfully treated for White Nose Syndrome

There has been ongoing work on naturally occurring microbes that can possibly suppress the fungus that leads to WNS in bats and some promising results have been obtained so far (e.g. bacteria from the bat's skin <http://news.ucsc.edu/2015/04/bat-disease-treatment.html>).

Now one group of scientists have taken one step further: by keeping WNS infected bats in an enclosure for 48 hours with a boosted common soil bacterium *Rhodococcus rhodochrous*, they were able to successfully kill the fungus ☺. The bats have now been released

The next step is further trials in other areas and larger population sizes.

<https://bangordailynews.com/2015/05/27/outdoors/cure-for-white-nose-syndrome-in-bats-may-be-imminent/>

Bats invade Sun City. . .

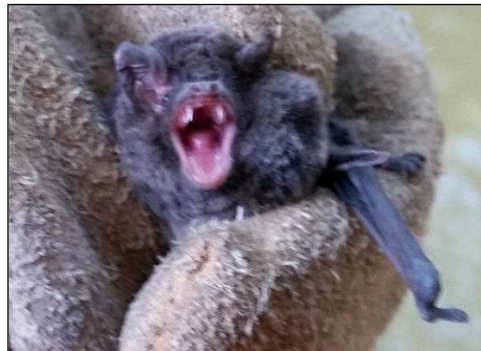
In mid-March I was contacted by Iwan Bronkhorst who is some sort of groundskeeper/landscape manager at Sun City. His request was a common one; he wanted bats removed from the premises, but his situation rather unusual.

He explained that a few hundred bats had suddenly taken residence inside the artificial cave through which one of the fun rides passes, of the waterpark I presume.

To me this was serendipitous and a wonderfully authentic touch to an adventurous fun ride, but to Sun City management, a cause for concern. This was understandable due to the angst it would induce if noticed by the frolicking public and their spawn.

It was an intriguing story and to me the most likely cave roosting culprit that would arrive out of nowhere in such numbers, was the Natal long-fingered bat (*Miniopterus natalensis*). Colonies of this species are known to move from caves in the Thabazimbi area to hibernate in caves on the Highveld for the winter. I wondered if the Sun City bats was such a migrating group and were 'bivouaced' in the artificial cave. Or maybe they are always on the lookout and investigating new caves, or they were chased out of their usual roost.

I asked Iwan to send me photos as soon as he could get any, and a day or two later he did, including a close up of one of the bats:



And indeed, it was clearly *Miniopterus*, which is obvious even from just the photo of the cluster of bats on the cave roof. I suggested to Iwan that he install a spot light on the bats, expecting that they would then leave since a well lit cave is not what bats prefer. But that it was possible that they would leave

of their own accord anyway after a day or two.

Unfortunately, he never got back to me and I never did find out the outcome.

Julio Balona



#8

The quiz to test your skills on the identification of southern African bats.
The rules are:

- The mystery bat will be from the southern African region as defined by the countries South Africa, Swaziland, Lesotho, Mozambique, Zimbabwe and Namibia.
- It will not be a species that is a rare vagrant to the region (e.g. Bergman's collared fruit bat, *Myonycteris relicta*), although it could be one that is relatively scarce (e.g. Rüppell's pipistrelle, *Pipistrellus rueppellii*).
- There may or may not be supplemental information provided (e.g. frequency of bat call, geographical location, forearm size, etc.)

Identification of mystery bat No. 7

There is only one southern African family of bats that has such long broad ears, all from the genus *Nycteris*. Since the upper incisors are 'bifid', i.e. each tooth is split into two lobes, this rules out *N. grandis* and *N. hispida*, which have 'trifid' upper incisors (each tooth split into three lobes). Those species can also be excluded because the mystery bat's ears are too long.

Of the remaining known species, our bat is too large for *N. woodi* (forearm ~ 39mm), and too small for *N. macrotis* (forearm ~ 51mm), leaving the **Egyptian slit-faced bat (*Nycteris thebaica*)**.



Ear length = 31.8mm
Forearm length = 46.3mm



close up of
upper incisors

Mystery bat No. 8

Can you deduce the name of the beast below?



This beast was found in an old mine tunnel, outside Parys, Free State.

Forearm length = 50mm

GNoRBIG Committee

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<p>Stewart McCulloch: Sponsorship Stewart.McCulloch@fabi.up.ac.za</p>	

Merchandise

 <p>Baseball caps R60 each</p>	  <p>'Bats' T-shirt with 'Bat Food' on back Black or Navy Blue R90</p>
   <p>Various 'Bat' T-shirts R80</p>	
 <p>Sticker R8</p>	 <p>Bat jewelry R20</p>
	 <p>Echoes of the night CD R50</p>
 <p>'Be kind to bats', Kids T-shirt Black or Navy R55</p>	 <p>'Fruit Bat' T-shirt R75</p>
	 <p>'Gentle Friends' T-shirt Blue or Green R65</p>

New Members

A Big Batty welcome to the following new members:

Animalia as a new corporate member. Welcome to GNoR BIG and thank you for your support.

Karin van der Walt has a Btech Degree in Nature Conservation and is a Registered Ecologist. She is involved with bat surveys as part of specialist studies for impact assessments and would like to learn more about bats. Welcome to GNoR BIG. The best way to learn is to join us on outings.

Marian Sonnekus is interested in conservation of bats. Sounds like you have a lot in common with the group! Welcome!

Koekie de Preez has taken care of the orphaned / injured bats until they could be set free. She would like to return the love / compassion that her bat shared with her. Welcome Koekie, hope you enjoy it here with us!

GNoR BIG AGM 2015

Speaker: Dr. Leigh Richards
Curator of Mammals, Durban Natural Science Museum

Saturday 25 July 2015

16:30 for 17:00

Venue: Winchester Marketing

Booking essential

RSVP 17 July 2015

gautengbats@gmail.com

Legendary soup
and bread
will be served

Please bring own drinks
R25 members,
R60 non-members.



**“Winging-it” for science: bridging the gap
between museum collections, research, and
conservation planning**