

the **BIG** news



Editor: Trevor Morgan
Issue #67 – March 2017

Newsletter of the Gauteng and
Northern Regions Bat Interest Group

Chairman's Report for 2015 to 2016

GNOR BIG was established in 1994 and is now **twenty two years** old.

The year reviewed

The first events of the year took part in August and were arguably the most significant in terms of bat conservation. I twice gave a talk at the company which I work for (Sasol), to a total of about one hundred and twenty people. Not only was this a respectable number of attendees, but unlike our typical audience these were not people with a particular interest in nature but rather 'the man on the street' that would not usually be at such a talk. Even better, most of the people were not white – a sector we are seldom able to reach.

In September a bat walk at the **Johannesburg Zoo** enlightened about sixty people.

While a hot October found us at **Makwekwe** in Limpopo Province, the site of the notorious "Kamp Staalraad" where the national rugby team was subject to humiliation in order to perform better...as I understood it. We had a much better time than they, with a good variety of bats and without having to run around naked amongst thorn trees.



GNoR BIG has continued to assist the local conservation authority (GDARD) with bat surveys of their reserves. In early November we visited **Suikerbosrand Nature Reserve** which harbors a wide range of fauna and flora, but not many flying mammal species – it is simply not very good bat habitat. Nevertheless, it was a pleasure to spend a weekend there encountering all of its wildlife.



A much richer region for bats is the **Der Brochen Project** area near Steelpoort, and is owned by Anglo Platinum. A productive late November trip yielded an interesting batch of bats including the relatively range restricted Cohen's horseshoe bat.

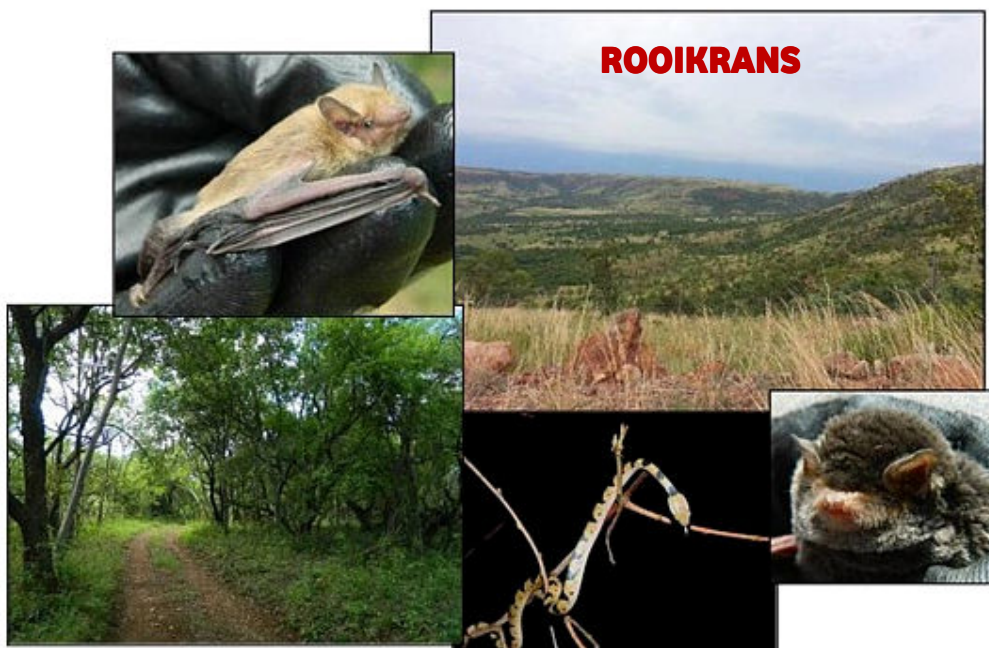


The same month we held yet another outing: a night at the **Modderfontein Reserve**. Survey findings were better than at the much larger and wilder Suikerbosrand with three species including many Rusty pipistrelles. We occasionally find one or two of these bats at several sites in the Johannesburg area, but here they were the dominant species and have clearly become established.



We rounded the year off with a bat walk at **Kloofendal Nature Reserve** in December to about thirty people.

In January 2016 we discovered the charming **Rooikrans** Hiking Camp bordering the Loskop Dam Game Reserve. Only about two hours out of Johannesburg, it allowed for a very relaxing weekend with a delight of bats and other beasts.



Another venue that kept us busy with admiration of its many denizens, nice bats among them, was **Wathaba** near Machadodorp. We spent a weekend there in February.



WATHABA



The same month we gave a successful talk to about fifty pig farmers. It appears to me that pig farming must be profitable – they gave us a donation of R3000, our biggest ever.

Finally we rounded the year of with another bat walk at **Kloofendal** in March (about twenty five people), and one at the **Pretoria Botanical Gardens** in April (a good turnout of about one hundred and thirty people).

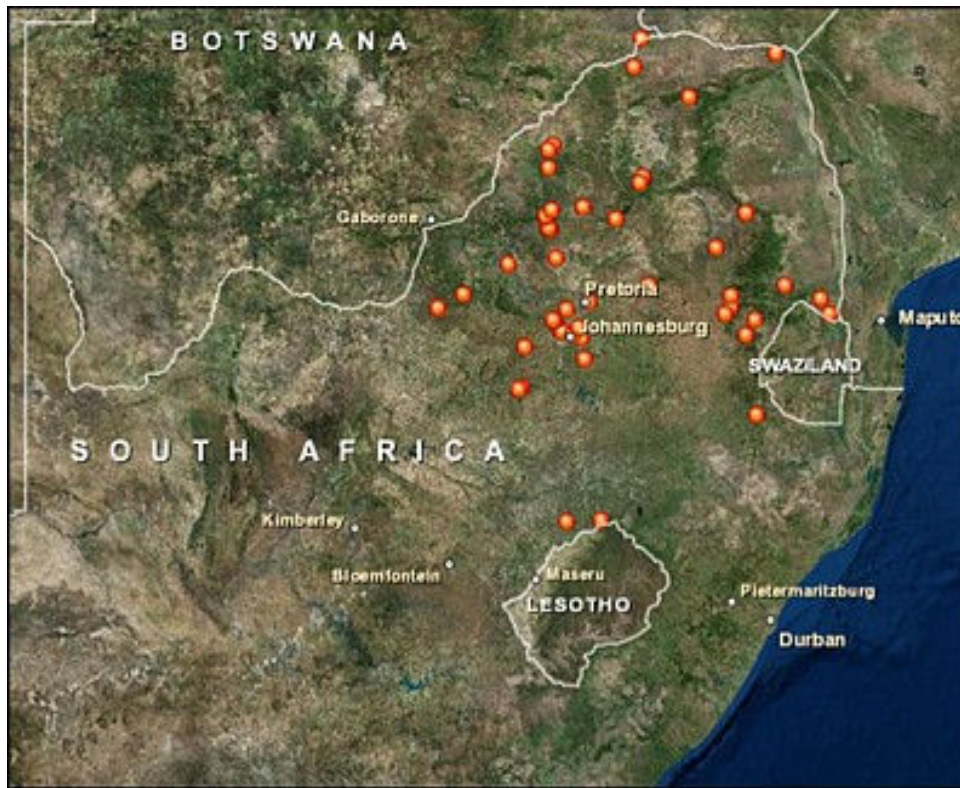
The activities for the year July 2015 to July 2016 are summarised below:

Activities for 2015/2016	
Aug 15	: Talks  (125)
Sep 15	: Bat Walk JHS Zoo (61)
Oct 15	: Makwekwe 
Nov 15	: Suikerbosrand Nature Reserve Der Brochen Modderfontein Nature Reserve
Dec 15	: Bat Walk Kloofendal Nature Reserve (38)
Jan 16	: Rooikrans
Feb 16	: Wathaba Talk  Farmers (50)
Mar 16	: Bat Walk Kloofendal Nature Reserve (24)
Apr 16	: Bat Walk Pretoria Botanical Gardens (130)



Once again a productive year, where we have averaged at least one event per month and educated many people. I'm happy with our performance.

On the subject of productivity I'd like to share the map below which shows the forty five sites which we have surveyed in the last ten years:

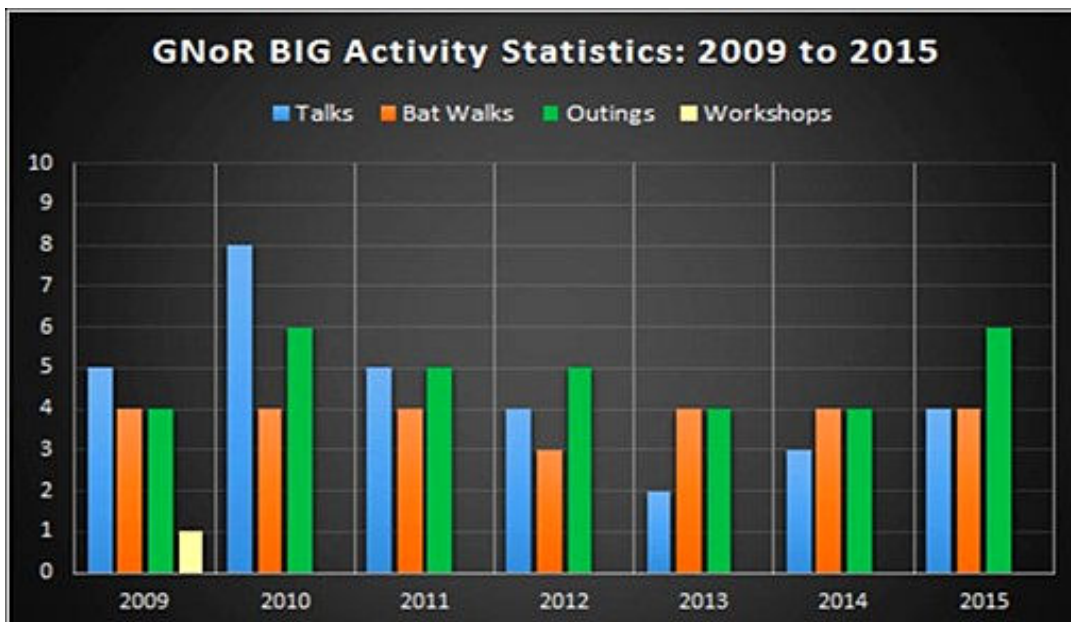


Most of the sites were surveyed over a weekend (two nights and a day), a few over three to five days, a few for a single night. And some were visited more than once, sometimes on three occasions.

The map therefore demonstrates well the scale of the effort that GNoR BIG has put into learning about and enjoying our bat life.

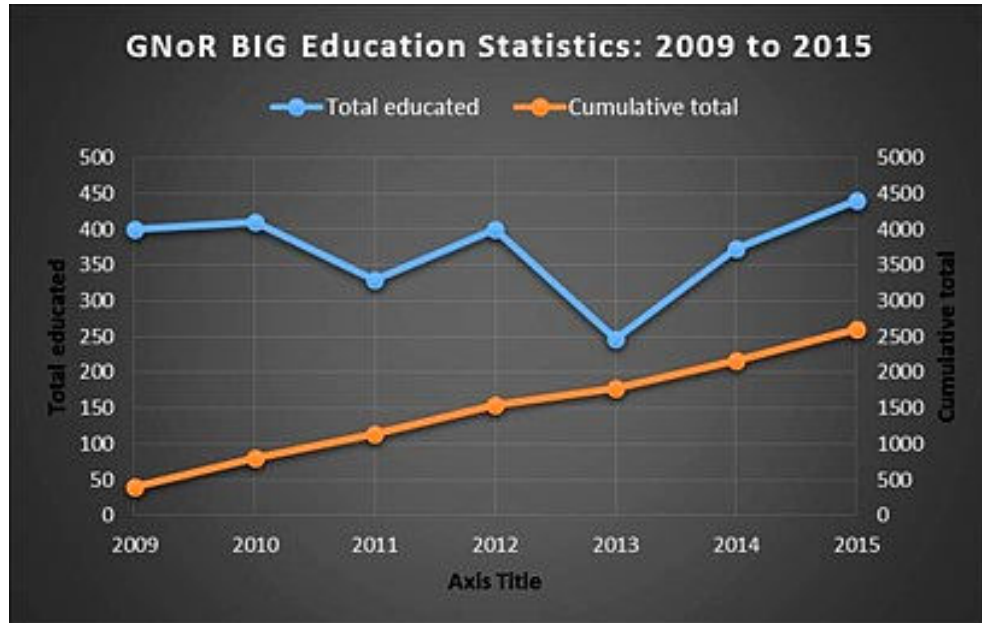
(Incidentally I originally created this map for a display for the International Bat Research Conference that was held in Durban recently, but it was not used).

Our activities for the year are summarised quantitatively in the graph below:



A comparison with previous years shows that the latest was on par and quite satisfactory.

And in terms of our primary objective of educating people, the estimated audience numbers are indicated as:



I'm pleased to note that at nearly 450 people educated we have actually achieved a new record for the period going back to 2009.

For interest I have also included cumulative totals for each year which show that we have had an estimated total of 2500 people in our audiences over the last seven years. When one considers that Jesus started with twelve disciples, it is a promising number...

Another important number is our **membership** which remains at around fifty.

With regard to a specific member, I'm sad to report the passing of Andre Barkhuizen earlier this year. As some of you will know, Andre was a pleasant person that kept to himself but got the job done, whether it was starting up a braai fire with a blowtorch (very effective) or catching bats. Usually I would give him and his wife Annatjie a mistnet, poles and bat bags in the afternoon and at the end of the night they would return the equipment, bat bags full.

I remember a particular incident at Kloofendal where I was testing a technique for launching ropes into trees for hoisting mistnets. It consisted of using a fishing rod to cast into the tree tops by attaching baby potatoes to the line to act as non-hazardous sinkers. Unfortunately one of the potatoes detached and landed right in the middle of a bunch of ladies exercising on the lawn, splattering upon impact to their bewilderment. This amused Andre so much that he was literally rolling on the floor with laughter. I was rather embarrassed but nevertheless really enjoyed Andre's obvious enjoyment of this event.

May he rest in peace.



Andre, as I remember him, calmly enjoying a cigarette (Ottooshoop Cave. Dec 2013).

www.batsgauteng.org.za

Next, looking at our communication media:

Our website continues to function well but renovations are long overdue (I've been saying this for about three years but don't seem to get to it...).

The Facebook site also needs more regular maintenance and Erna Balona has been putting in some effort there so that it hasn't stagnated completely.

We only published two instead of the four newsletters we had hoped. But they remain of a good standard thanks especially to the skills of Editor Trevor Morgan.

Finally, reviewing some of our ongoing challenges:

Outing attendance is reasonably good although it tends to consist of the same core group. I'm not entirely sure why this is so. One reason is that the outings can seem a bit exclusive to new members, and my bad habit of launching into batting mode without explaining what is being done contributes to this. I will try to avoid this in future and we will also be focused on involving newbie's more directly. In addition we will continue to make an effort to find cheaper venues where possible.

An aspect that has greatly improved is the sharing of our acquired knowledge with the objective of informing bat conservation. In the past year I published GNoR BIG's accumulated findings regarding the Short-eared trident bat in the online journal African Bat Conservation News (ABCN). The paper not only details new distribution locations but also summarises current estimates and population sizes at all known colonies. It is therefore an important conservation document.

Following this I also published a number of interesting records of scarce bat species in the same journal.

The collage consists of five overlapping pages from the journal *African Bat Conservation News*. The pages are:

- Page 1 (top left):** "Scientific contributions" section, featuring "New distribution records of the Short-eared Trident Bat, *Clootis percivali* Thomas, 1904 (Chiroptera: Rhinonycteridae) in South Africa." It includes a map of South Africa and a list of authors: Balona, Balona, and Morgan.
- Page 2 (middle left):** "Observations, Discussions and Updates" section, featuring "Observation # 25: *Myotis welwitschii* record from GAUTENG." It includes a photograph of a bat and a list of authors: Balona, Balona, and Morgan.
- Page 3 (middle right):** "Observations, Discussions and Updates" section, featuring "Observation # 26: *Mops midas* (Sundevall, 1843) record from Lephahale, Limpopo Province, Republic of South Africa." It includes a photograph of a bat and a list of authors: Balona, Balona, and Morgan.
- Page 4 (bottom right):** "Observations, Discussions and Updates" section, featuring "Observation # 27: *Mops midas* (Sundevall, 1843) record from Beta, Limpopo Province, Republic of South Africa." It includes a photograph of a bat and a list of authors: Balona, Balona, and Morgan.
- Page 5 (bottom left):** "Observations, Discussions and Updates" section, featuring "Observation # 28: *Mops midas* (Sundevall, 1843) record from Beta, Limpopo Province, Republic of South Africa." It includes a photograph of a bat and a list of authors: Balona, Balona, and Morgan.

I'd like to also draw your attention to another paper recently published in ABCN that was written by committee member Kate MacEwan. It documents fatalities of Old World fruit bats at certain South African wind farms. This confirms, probably for the first time, that these bats are vulnerable to turbines and that wind energy will take its toll on them. Although published in her name and not related to any GNoR BIG activities, I'm proud of the work of someone on our team. She is also the chairperson of the South African Bat Assessment Association and played a major role in its creation. Well done Kate.



To read the all published work mentioned above see:

<http://www.africanbats.org/index.php/publications/african-bat-conservation-news>

Volumes 41 to 43].

The coming year

The calendar for the next year will look much the same as the last: several bat walks (Kloofendal, Pretoria Botanical Gardens, Johannesburg Zoo), a few talks and four or five outings (venues still to be decided). At this point I would like to point out that as long as I am Chairman we will tend to follow this formula. This is mainly due to the lack of time to do anything beyond this since all of us have day jobs. We also do not get involved in certain activities that an interest group might enlist in, namely lobbying or taking on developers. This is because I, and probably most of the committee, do not enjoy the energy-sapping confrontational approach and prefer that of David Attenborough in which a bat appreciation is induced in the public.

People

As always I must acknowledge the most critical people in GNoR BIG, the Executive Committee. They are the not only the central nervous system of the group but its carbohydrates as well – it take a lot of enthusiastic energy to accomplish what we do.

Usually I'm happy to report that I can use the same slide showing the committee that I have been using for several years since it shows stability and implies good functioning of the team.

This year there though, has been two changes: We lose John Kinghorn and Werner Marais.

Fortunately it is for a good reason in that both gentleman are embarking on new ways forward in their lives.

John has contributed by starting up our Facebook site, helping a lot with younger audiences at bat walks and was a great promoter of the group.

Although Werner has played the role of entertaining clown at outings, he has made more serious contributions by suggesting the use of a camera microscope when processing bats (now a standard and crucial tool we use for identifications) and giving popular talks on cave ecology.

I thank John and Werner for their good work and wish them well. They are granted an Honourable Discharge for their service ☺



Other people who must be thanked for their often extensive contributions:
Mimi Neumann for maintaining and managing our very important website free of charge.

Representatives of provincial nature conservation departments - Lihle Dumalisile (Gauteng), and Lientjie Cohen (Mpumalanga), both very supportive and a pleasure to work with.

Staff at Pretoria Botanical Gardens and Johannesburg Zoo.

Karin & Steve Spottiswoode and the Friends of Kloofendal.

Pat van Nierop for the opportunities at Modderfontein Reserve.

The non-committee GNoR BIG members that are always so helpful and pleasant to be with at events: Andre and Annatjie Barkhuizen, Yolandi du Toit, Nadia and other helpers from Tukkies, and Reinhard with his kids.

Also to Dawn Cory-Toussaint who through the years has helped our group find great new batting sites.

Thanks to Brian Whiting for once again allowing us to use Winchester Marketing as an excellent AGM venue.

Finally, thank you again to the paying members of GNoR BIG themselves without which our great group would not exist.

Julio Balona
Aug 2016

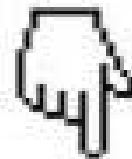


Did you know..?

GNoR BIG is on

facebook

click below



<http://www.facebook.com/#!/pages/Gauteng-And-Northern-Regions-Bat-Interest-Group-GNoR BIG/154020804614765?ref=ts>

Bat News Updates

by Julio Balona

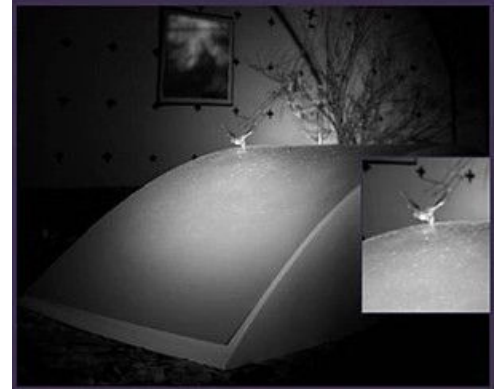
Interesting new research

Lured to their death by watery surfaces

Why bats appear to be sometimes attracted to high speed wind turbine blades, is a question that has so far not been answered satisfactorily. Some postulate that the tall structures in open areas are perceived as a place to perch (artificial trees), or that bats are pursuing insects that are themselves attracted to the blades for unknown reasons. Another possible explanation that has been put forward is that the smooth reflective surfaces of the blades are acoustically akin to a water body. Thus the bats are perhaps attempting to drink... with fatal consequences.

Biologists at a Texas university tested the theory with captive bats in an old barn using structures with different surfaces and found that they did indeed appear to be attempting to drink on smooth ones. The next step is now to apply rough coatings on turbine blades at a wind farm to see if there is any reduction in fatalities.

<http://keranews.org/post/tcu-lab-tries-save-bats-death-wind-turbine>



Too much of a good thing

The life of a harem male may appear to be genetically profitable, seeing that he has a number of females to himself. But research by a team from Switzerland on one species, Seba's short-tailed fruit bat (*Carollia perspicillata*), has shown that in fact all of that sex leads to a decline in sperm quality. And that lone non-harem males which sneak in sometimes to mate with the harem females, have faster, long-lived sperm. This they proved by removing both harem and sneaker males from females for a few days, finding that the formers sperm quality improved significantly, while that of the latter remained much the same.



<http://thescienceexplorer.com/nature/too-much-sex-lowers-sperm-quality-bats>

While they were sleeping

To the long list of bat predators, we can add monkey: In Tanzania and Kenya, *Cercopithecus* monkeys (a genus which includes our Vervet and Samango monkeys), have been observed eating fruit bats. These were captured while sleeping in trees during the day. This is not that surprising seeing that this roosting habit would surely make them very vulnerable and you'd expect to see them getting eaten a lot more often. I also know of one case where one was killed and eaten by a genet. Presumably their tendency to sleep in groups keeps the colony alert to danger.

http://www.eurekalert.org/pub_releases/2016-05/fau-sda052316.php

Species from faeces: signatures based on waste

Bat guano has always been valued as fertilizer and has also been used as a source of nitrates for explosive manufacture. A new way to appreciate this substance is as a reservoir of bat DNA and a tool for the non-invasive identification of species. Identifying a type of bat from its guano is challenging since the material contains the relevant DNA but amongst that of all sorts of organisms that the bat has eaten. Distinguishing between them is tricky but techniques are getting better. Recent work in the U.S. that targeted a specific segment of a mitochondrial gene which distinguishes well between bats, identified 54 species successfully from their guano. Crucial to this technique however, is that there is a known sequence available for each bat, something that we are still a long way from achieving for all the African species.

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0162342>

Faster than we thought

The wings of molossid (free-tailed) bats are quite similar to those of swallows and swifts in that they are long and narrow (high aspect ratio). They also tend to forage in a similar zone of open space above the tree line and away from other objects. However it has been generally assumed that bats could not achieve the same speeds of greater than 100 km/h measured in swifts, because they are less aerodynamically shaped due to their large ears amongst other factors.

Now this has been disproven by measuring flight speeds of Mexican free-tailed bats (*Tadarida brasiliensis*) using transmitters attached to individual bats and a small aeroplane. And in fact these bats have been found to fly at equal or greater speeds than swifts.



Effect of LED lighting on urban bats

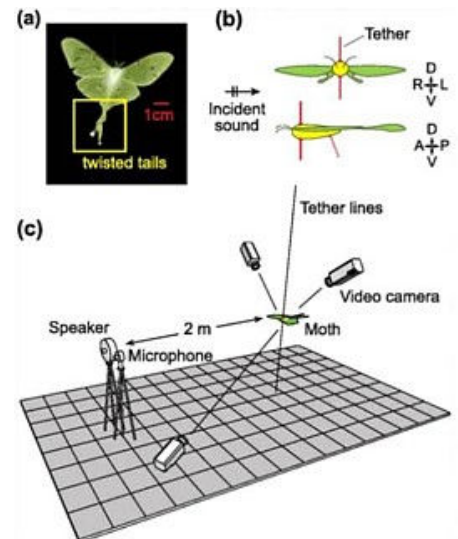
The move from conventional bulbs to the more efficient lighting of LEDs may have an effect on urban bats: research in Germany using acoustic monitoring found that the light tolerant Common pipistrelle foraged significantly less at LEDs, while the more light sensitive Myotis species actually increased foraging activity notably. Other species such as Nathusius pipistrelle appeared unaffected by the type of light. The composition of bat assemblages is therefore likely to slowly change in urban environments.

<https://www.sciencedaily.com/releases/2016/09/160901093006.htm>

Beauty evades the beast

Previously I reported that experiments had shown that the tails of the exquisite North American Luna Moth reduced the likelihood of capture by bats. It was suggested that the tails somehow served as acoustic camouflage but how exactly this is achieved is unclear.

A new, more detailed study has tried to answer this question by using video cameras and a microphone to record reflected ultrasonic sound pulses aimed at a tethered moth. Results seemed to suggest that the twisted tails would tend to mislead the bat's echolocation, focusing on the back end of the moth rather than the centre.



<http://www.washington.edu/news/2016/08/15/luna-moths-long-tail-could-confuse-bat-sonar-through-its-twist/>

<https://www.sciencedaily.com/releases/2016/08/160815190146.htm>

The war in Mozambique between bats and moths

The interaction between bats and their moth prey will keep scientists busy for a long time to come with its many strategies and intricacies. Moths that fly erratically when a foraging bat is heard, those that drop to ground, those that jam the bat's sonar with their own clicks and those that emit warning clicks indicating that they are toxic. And then those that have not invested the resources to make themselves toxic but falsely advertise unpalatability with clicks.

Very interesting work on some of the various tactics was done recently by U.S. scientist Dr. Jesse Barber at Mozambique's Gorongosa National Park. Watch the award winning documentary as he investigates the phenomena with his team:



<http://www.news24.com/Africa/News/moths-in-mozambique-tell-ultrasound-fibs-to-avoid-hungry-bats-study-20161005>

https://www.youtube.com/watch?v=NeCmSL_N65A

Other stuff

No bats, no tequila



As most of you should know, tequila is made from a single species of succulent: the Blue Agave (*Agave tequilana*). And that it has a single pollinator: the Lesser long-nosed bat (*Leptonycteris yerbabuena*).

A problem with agave farms is that the plants are harvested just before flowering when their sugar content is highest. New ones are then planted from clones that sprout from the parent. This method not only leaves no flowers for bats but is a recipe for disease due to the lack of genetic variation and major losses were suffered in 1990s through this.

Well known bat scientist, Rodrigo Medellín who was recently in S.A. for the International Bat Conference, has been working with the agave industry to make it more supportive of bats and less prone to its own destruction. Now some farmers set aside 5% of their plants and allow them to flower and die without harvesting, supplying food for the bats and producing more disease resistant agave. Eventually the idea is promote certain tequila brands as 'Bat friendly'.

<http://news.nationalgeographic.com/2016/09/rodrigo-medellin-explorer-moments-bat-agave/>

<https://www.nrdc.org/onearth/help-bats-save-environment-drink-mezcal>



17th International Bat Research Conference

Durban
Aug 2016

By Julio Balona

Many of you will know that this year the International Bat Research Conference was held in Durban. I was originally not going to attend due to the cost and the five days of leave from work that would be required. 'Fortunately' GNoR BIG committee member Stewart McCullough encountered a serious knee problem and I was able to go in his place for four of the days.



It was not possible to be at every single talk since there were several dozen in total and usually three held simultaneously so you had to select one. I felt spoiled, like a first time satellite TV user with many channels to choose from and a promises of hours of entertainment.

There was quite a lot to absorb, some beyond my familiarity with the specific subject, but most interesting and some inspiring. My intention was to review some of the talks and share highlights and insights, but being inherently lazy I found another way: it turns out that the African Bats team have summarised much more comprehensively than I would, a large number of the abstracts in the latest issue of African Bat Conservation News (ABCN #44):

http://africanbats.org/Documents/ABCN/ABCN_44.pdf

Actually, if you're not already doing so, it is worth visiting their website and downloading other issues of ABCN and also subscribing – anyone who has an interest in African bats cannot ignore this resource: <http://africanbats.org/index.php/publications/african-bat-conservation-news>.



Treasurers Report

For the period July 2015 to June 2016

Income

There was a marginal increase in income of R202

Description	2016	2015
AGM Income	290	610
Bat Talks / Bat Walks	8057	7742
Donations	605	815
Equipment Hire		500
Interest Income	277	232
Membership	3161	3484
Merchandise	8824	7890
TOTAL	21,214	21,272

Expenses

Profit for the year R3,119

Description	2016	2015
AGM Costs	1420	3218
Bank Service Fee	874	735
Costs – Bat Walks	609	1018
Depreciation	4799	3259
Equipment Purchases	3167	-
Gifts & Donations	608	280
Permits	0	120
Postage	56	-
Repairs & Maintenance – Equipment	4663	204
Stock Purchases & Adjustments	712	3810
Website	1188	1188
Total	18,096	14,032

Balance Sheet as of June 2016

ASSETS		
Total Fixed Assets after Depreciation	13821	9120
Current Assets (Stock)	25121	12853
Cash On Hand	9726	23704
Total Current Assets	34847	35783
Accounts Payable	600	1222
Life Membership	2952	1683
Total Current Liabilities	3552	2905
Net Current Assets	31295	32878
NET ASSETS	45117	41998
Capital & Reserves		
Retained Earning	41998	34759
Profit for the year	3119	7239
Club Funds	45117	41998

Summary

- The Club acquired a new laptop during the year under review at a cost of R9500 along with software and a new microscope
- Additional shirts were purchased and added to our impressive stock list
- The bulk of the club income is derived from bat walks and the merchandise sold at these event

Thanks

- Special thanks once again to Mimi for the website
- Without the commitment from the committee and several dedicated and active members these income generating opportunities for the club would not be possible – THANKS
- As treasure I am a little concerned that our cash reserves are low. However we are not expecting any additional purchases during the next fiscal.



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 relictus*), 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. 10



The shy beast in the photo is trying its utmost to hide its face which would give away its identity. However it has forgotten to cover a less conspicuous but quite distinct characteristic of its genus, the slightly indented T-shaped tail. This is a feature of the slit-faced bats and can be more clearly seen in a photo of another individual below, along with the incredible ears and slit-face:



There are several southern African species of which the only one easily identified from a photograph is Wood's slit-faced bat (*Nycteris woodi*), due to its white underside. But even this aspect is hidden in the photograph. So which species is it?

This would be rather challenging to determine without a critical piece of information that was unfortunately and accidentally left out in the last newsletter, which is that our beast was photographed in Gauteng. The only species ever recorded in this region is the **Egyptian slit-faced bat (*Nycteris thebaica*)**, by far the most common and widespread member of the genus.

Mystery bat No. 11

Can you deduce the name of the beast below?



The peak frequency of its call when released was about 68 kHz.

<p>Julio Balona Chairman Cell: 082 359 1295 africanbat@gmail.com</p>	<p>Erna Balona Membership Secretary and Merchandise Cell: 082 927 9532 erna.balona@gmail.com</p>
<p>Sharron Reynolds Treasurer Tel: 011 447 7740 (w) 011 974 0798 (H) Cell: 082 821 6588 accounts@themediaco.za</p>	<p>Trevor Morgan Newsletter Editor trevorem@mweb.co.za</p>
<p>Kate MacEwan School bat box coordinator kate@iws-sa.co.za</p>	<p>Wanda Markotter Tel: 012 420 4602 Cell: 082 824 6356 wanda.markotter@up.ac.za</p>
<p>Terence Scott: Sponsorship TPScott1987@yahoo.co.uk</p>	<p>Stewart McCulloch: Sponsorship Stewart.McCulloch@fab.up.ac.za</p>
<p>Jan Myburgh: Pest control liaison jan.myburgh@up.ac.za</p>	<p>Anton Schultz: School talks antonschultzphotography@gmail.com</p>
<p>Gertrud Ebner: No specific portfolio gebner@fnb.co.za</p>	

GNoR BIG committee would like to welcome the following new members to the Gauteng and Northern Regions Bat Interest Group:

Dominique Morisse: is interested in promoting bat conservation and might contribute to the newsletter. Hope to hear from you soon!

Muriel Dietrich is doing bat research, fieldwork and collection of biological samples with the University of Pretoria. She is interested in bat ecology and has worked on bats for several years. Welcome to GNoR BIG!

Erika Brück is studying a MSc in medical virology at University of Pretoria and is interested in getting more experience in bat handling. Welcome to GNoR BIG!

Hlengiwe Zinhle Nkambule is doing bat research at centre of viral zoonoses at University of Pretoria. She would love to be able to inform people about bats and bat conservation. We would love it too if you continue bat conservation.

Legogan Sibiya is studying at the centre of viral zoonoses at University of Pretoria and is interested in bats. Hope you will enjoy it with us!

Andrew Lewis is into programming and networks and would love to learn about bats in his area. We recommend that you join us on an outing for the best bat - learning experience!

Jordan Ralph has a strong interest in bats and conservation and after learning about GNoR BIG from one of our members, he decided to join. He is also serving on the committee of Youth Africa Birding and is excited to get involved with bats. Welcome Jordan!

GNoR BIG committee would also like to welcome Annatjie Barkhuizen as the newest **life member**. She has been with GNoR BIG for 11 years and has always been involved in our activities. Hope that we will have at least another 11 more great years together!