

Ifa Lemvelo



The Newsletter of the Natural History Museum
of Zimbabwe, Vol. 1 No.7; 2019

Sometimes i am such
a “fly person” literally



Our fascinating Golden orb-web
and Hermit spiders

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Natural History Museum of Zimbabwe

Offices at: Centenary Park, Corner Park Road &
Leopold Takawira Avenue,
Bulawayo

Regional Director's message

Welcome to this issue!

As a nation we are all struggling with endless power cuts and the museum has been no exception. In spite of various pressure groups approaching ZESA we have been unable to get them to exempt us from these cuts so we can light up our galleries. We apologise for all the inconvenience that has been caused to all our visitors. However, it has not stopped the research that continues behind the scenes. Please also follow us on Facebook to find out how you can get involved in some of our research projects.



Entrance fees

Locals: Adults RTGS \$9
Children (5-14yrs) RTGS \$3
SADC Countries: Adults USDS7
Children (5-14yrs) USDS5
International: Adults USDS10
Children (5-14yrs) USDS5

The Museum is open daily from 9am-5pm

Events!!!!

Museum Club August Holiday Camp. More details on the in this issue.

JOIN US AT THE MUSEUM

Experience our planet's natural beauty and examine how climate change impacts all living creatures in this ambitious documentary of spectacular scope.

Museum Club

AUGUST HOLIDAY CAMP

HERITAGE AND SUSTAINABLE
DEVELOPMENT GOALS

SUSTAINABLE
DEVELOPMENT
GOALS



A mirror of RAYS SYMPOSIUM 2020

"Preparing children who will give opening addresses at RAYS symposium 2020."

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OUR PLANET

Sir David Attenborough's award-winning new series.



ONE PLANET
August 14th



FROZEN WORLDS
August 21st



JUNGLES
August 28th



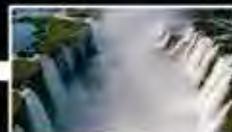
COASTAL SEAS
September 4th



DESERTS TO GRASSLANDS
September 11th



HIGH SEAS
September 18th



FRESH WATER
September 25th



FORESTS
October 2nd

1p.m every Wednesday
at the Lecture Theatre
@ the Natural History
Museum

ENTRANCE IS FREE / DONATIONS ACCEPTED



National Museums and Monuments of Zimbabwe

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Did you know??

..... that all the fine artwork and details in the displays throughout the museum were mostly produced by Terry Donnelly, Artist and Senior Officer 1963-1981



Farewell to Elizabeth



On March 31 2017 we sadly had to bid farewell to one of our long serving members who had reached retirement age. Miss Elizabeth Mnthali, affectionately known to everyone, including the researchers as NaJohn or Sis Lizzy retired at the age of 65 after having served the organisation since the 1st of August 1983.

She joined the organisation as an assistant clerical officer, moved to the ornithology department then later moved to the library where she served until her retirement. With no training in Library & Information Science, Lizzy still managed to work in the library with ease using her typing skills to keep the library records updated. She knew the holdings of the collection and would retrieve information with the blink of an eye. Lizzy had a great sense of humour and would tell stories to make you laugh while you work, especially stories about her height. She was short but her height was no barrier. You would find her climbing the ladder retrieving books from the highest of shelves.

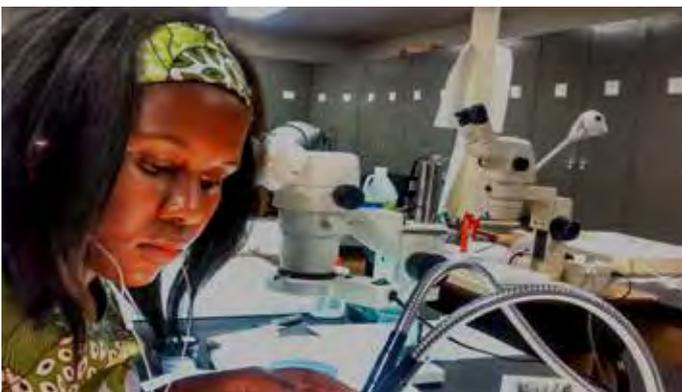
To honour her hardwork, long service and determination, we bid her farewell by celebrating her 65th birthday with a party, gifts and shared stories.

SOMETIMES I AM SUCH A “FLY PERSON”: LITERALLY...

By Dorothy C Madamba



Allow me some “bragging rights” during this International Year of the fly, 2019! I work in the entomology department of the Natural History Museum in Bulawayo and in every social circle where I introduce myself, I have had to explain that entomology is the study of insects, to which the usual response is a quizzical face, probably questioning my mental stability. I always want to imagine they already see me running around some bush somewhere chasing butterflies with a net. That is only the tip of the iceberg compared to what an Entomologist does. Most managerial staff at the Natural History Museum in Bulawayo are called Curators. A curator by definition is a “keeper, custodian or conservator of a collection of any kind” in the museum. Part of what curators do is to document, conserve, interpret exhibit and communicate on the national heritage that we are responsible for, pretty fly right?



Zimbabwe as a nation is very rich in both Natural and Cultural heritage and we have received international

recognition for it through UNESCO world heritage sites. Zimbabwe is by global standards a very small country, for example the entire area fits into the state of Texas in the United States of America, leaving plenty of unoccupied space. But within that small space we have 5 recognised World Heritage Sites and 3 of them are in the Western Region where we also find the Natural History Museum of Bulawayo. From my brief encounter with the world heritage site nomination process, world heritage sites are nominated on the grounds of outstanding universal value in the categories of nature and culture. This is where the documentation and research by curators of both nature and culture is useful in informing these decisions. A fellow curator and I have identified insects that fall right in the middle of nature and culture and produce outstanding value worth preserving a site for. I just had to go off on a tangent to explain why the research work by curators in all fields is phenomenal in impacting global decisions.

One of the pillars of my work as an entomologist is education, being able to interpret research findings and collections into presentations, publications and exhibitions. One of the questions that always pops up after I rant and rave about how insect biodiversity is important, is “What is the importance of Mosquitoes?” The answer I give is more about ecosystem balance and how the rest of biodiversity is suffering because of our impact on the environment and the human population explosion increasing pressure on the environment. In 2012, we displayed an exhibition called, “Malaria, a Challenge for Research” in the entomology gallery and the content of that display showed that infant mortality in Africa is rife and Malaria took credit for 1 million infant deaths per year, meaning that channeling resources into studying the vectors and pathogens of the disease is very important. That is the importance of Mosquitoes. Mosquitoes are in the order Diptera. Insects in this insect Order are true flies with 2 wings (I pair –the forewings) and halteres (reduced hindwings in the shape of clubs) for balance.

Back to using my bragging rights, Class Insecta is much more ubiquitous and diverse at the species level compared to other classes of other animals. For example, there are only a little over 21 000 known described species of mammals in the world, yet globally there are about approximately 1 million insect species and counting....Hyperbole? Not at all. I think only bacteria can compete with insects on the basis of ubiquity. They are everywhere performing many unique ecosystem services and also being a menace in some instances. They are all classified into about 29 Orders which form different broad fields of study. Every fly person, like myself, is called a Dipterist as they study the order Diptera and there are quite a lot of us. In 2018 I attended an International Congress of Dipterology in Namibia, the 9th session, and was

amazed at the various research areas all to do with the fly, in fact the whole year 2019 was designated International Year of the Fly, at this conference. The intention was to celebrate flies and their role in nature and human society. That they are diverse, significant, and beautiful and they affect our lives. This celebration has seen a fly species highlighted for each month.

The featured January Fly in the International Year of the Fly calendar by Steven A Marshall and Asheley Kirk-Spriggs was a nectar feeding *Sylogaster* species (Conopidae) from South Africa, referred to as the Needle tailed, thick headed fly. I'd guess it owes its addition to the calendar to its bizarre morphology as well as the trouble systematists have had placing it taxonomically. February featured a *Helina* species from the Muscidae family. This featured fly represents a very large genus that includes flies that have been recorded to be attracted to cadavers and hence important to forensic entomology. March had a beautiful photograph of two sparring male cactus flies, *Chaetonerius allaudi* (Giglio-Tos) family Neriidae from Mauritius, besides being significant pollinators, I do not dispute that these two flies may have been thrown in there because they just looked unique and beautiful. The "May fly", excuse the pun, was a parasitic fly *Trigonospila* species of the family Tachinidae from South Africa, probably incorporated because they are known to parasitise on Lepidoptera (moths and butterflies), just to mention a few. If you do not appreciate the biodiversity and the significance by now then let me get into a little more detail.

I am such a fly person because they perform a variety of ecosystem services such as pollination, nutrient cycling through their role in decomposition and their relationship with bacteria. Flies are contributors in the field of entomophagy, yes edible flies! There is an emerging industry producing protein supplements for manufacturing food products that are basically crushed black fly maggots. Fly maggots have also been useful in the medical field as disinfected maggots have been used in wound debridement maggot therapy. This is where the maggots are introduced to a wound and held eat up the dead tissue. Contrary to popular belief, flies are very smart, always preening themselves, unfortunately different species of flies happen to be vectors for different disease causing pathogens for example cholera and typhoid are caused by *Vibrio cholerae* and *Salmonella enterica* bacteria respectively, which sometimes the flies help spread around. Other vectors of diseases in both humans and animals are horseflies, tsetse flies and mosquitoes. With this section on epidemiology, I shall speak on behalf of the flies and say, don't blame the messenger. We must learn to separate the vector from the actual pathogen, flies are good.



Fly pest questions and some suggested solutions.

Fruit flies are often rampant in orchards much to the dismay of farmers and so are common houseflies. Most of the time I get questions on how to get rid of pests, well I am not an expert or specialist in pest management but can certainly lend an opinion on the few notes I have picked up along the way with regards to flies as a domestic problem. The housefly, *Musca domestica*, can be a nuisance in the home at times, the first line of defense is keeping clean dry counters and an empty dry trash can. Some even go a step further and wipe those clean surfaces with white vinegar.

If you want to learn more or assist us with collection of flies please feel free to send us your questions and inquiries through our Facebook page @UNBOXING ENTOMOLOGY or our Facebook group "Insects of Zimbabwe".

OUR FASCINATING GOLDEN ORB-WEB AND HERMIT SPIDERS

By Andrew Cowell

It was the very hot summer of 1962, when as a ten year boy, I was in a garden at 17 J.M.M. Nkomo Street belonging to Uncle Bertie, an old family friend. I was fascinated by some large, scary looking web building spiders that inhabited the garden. They looked rather formidable with their gleaming 6mm fangs, quite visible to the naked eye, even from some distance. These spiders did not faze Uncle Bertie at all, he actually welcomed their presence, and called them "The gardener's friend" because of the insects they ate, in many instances taking rather large prey.

So welcome to the world of four species of related spiders – three large Golden orb spiders and one Hermit spider. They belong to the Araneomorphs (spiders with diaxial fangs working 180° to each other like a pair of tongs) found in the family Araneidae (Orb weavers). The Mygalomorphs, large hairy spiders rival the orb-web spiders in size, and they have fangs that strike downwards onto their prey and include the Baboon spiders, Trapdoor spiders, Purse web and Funnel-web spiders. Mygalomorphs are also long lived (up to 25years) compared to the Araneomorphs which only live for a year.

There are 23 Golden orb-web spiders (*Nephila*) and four Hermit spiders (*Nephilingis*) worldwide occurring in the tropical and sub-tropical regions and of the four found in Zimbabwe the largest is The Red-legged Orb-web spider *Nephila inaurata madagascariensis*. The female has a body length of around 35-39mm and a leg-span of around 100mm. Males are really small, about 5mm long with a 15mm leg-span.



The Black-legged Orb-web spider, *Nephila fenestrata*, is the same size as the above but without the vivid colouring as the abdomen of the female is a lighter brown with a single yellow band and small yellow spots. I have seen these occurring in large numbers in the hot dry areas of Mwenezi but are common throughout Zimbabwe.

The Hermit spider, *Nephilingis cruentata* is smaller than the above with females about 20-24mm in length with leg-spans of 65mm. The legs are striped black and yellow but they have no brushes on them and the overall colouring is brown with a yellow cephalothorax. Males are the same size as those of *Nephila*. This species is widespread throughout tropical Africa, but have only been recorded in the Eastern Highlands of Zimbabwe. The three other species in this genus are found in the Islands off the coast of Africa – Reunion, Madagascar, Seychelles and Mauritius. Their webs are white not golden, with a retreat at the top.

In Chipinge in 1996 the building I was working in was being renovated and I had to remove the Hermit spider that had made its web across the front door. I used a pair of garden gloves to do this and placed it on a nearby bush. It made no attempt to bite me, and bites from any of these species are rare and although they are considered harmless they still contain venom and should be treated with caution.

Due to their large to very large size, these spiders are able to tackle rather large prey that gets caught in their webs, including birds, and there has been a report of *Nephila plumipes* killing and eating a 50mm brown tree snake in Australia in 2012. However, their usual prey is normally a variety of flying insects such as flies, beetles and grasshoppers.

Although the females variety of natural enemies are formidable looking including birds and lizards spiders they have a and dragonflies will eat



Next in size, and the most commonly occurring, is the Banded-legged Orb-web spider, *Nephila senegalensis annulata*. Females are 25-29mm in length with a 80mm leg-span, and the legs are banded brown and yellow with black “brushes” on legs 1,2 and 4, and the abdomen is a very attractive black and yellow. Males are 5mm in length and at least 6-8 of them live around the edge of the females web feeding off the smaller insects caught in her web.

the smaller males. There is a certain moth larvae that preys on their eggs, and as their egg sac contains 300-3000 eggs this larvae can do considerable damage. In Papua New Guinea *Nephilia maculate*, the Giant wood spider, is a popular delicacy eaten by the local people, thankfully this is a tradition not likely to happen here.

As these spiders are common and occur in large areas of Africa they are not on the IUCN endangered list, however we should still take care to conserve them and not unwittingly remove their webs as they play an important part of in keeping insects under control. The pet trade in large spiders is growing; however as these spiders live for less than a year they do not make suitable pets like the Baboon spiders and their allies.

And finally a note on their silk – this is incredibly strong, and can even be used for making certain garments. In 2006, in the USA, Simon Peers, a Textile designer, and Nicholas Godfrey, an Entrepreneur, caught a large number of the America species, *Nephilia clavipes*, and made a shawl that was exhibited at the American Museum of Natural History in 2009. In 2012, a cape manufactured from *Nephilia* silk was exhibited at the Victoria and Albert Museum in London. Fisherman in the Indo-Pacific area take *Nephila* webs, make them into a ball which is then thrown in to the water, and as it unfolds is can catch fish.

The golden colour of their webs is due to a chemical carotenous, xanthurenic acid and quinones and the spider is apparently able to adjust pigment intensity relative to the background light levels and colour, the range of special reflectance is specifically adapted to insect vision.

I hope that this article has inspired you to learn about the fascinating world of spiders and that you will watch them rather than destroy their webs and the inhabitants. There is still so much we do not know about the spiders in this country and would like to invite you to visit the Arachnid department at the Natural History Museum for more information on these and others spiders.

Please allow your children 7 to 14 years to join us for the holiday camp from the 28th to the 31st of August. They will receive lessons as listed on the poster. Among the attendees, we will be looking for children to deliver opening speeches on these topics during sessions of our 2020 youth symposium which will be based on the same themes.

6 CLEAR WATER AND SANITATION

2 ZERO HUNGER

DAY 1-28 AUG
6 RECAP ON WATER WEEK AND
2 FOOD SECURITY WITH MICHELLE AND DOROTHY

DAY 2-29 AUG
12 SUSTAINABLE CONSUMPTION
13 CLIMATE CHANGE WITH PANASHE

DAY 3-30 AUG
11 SUSTAINABLE CITIES AND COMMUNITIES + QUIZ WITH TODINI

DAY 4-31 AUG
NATURE WALK KHAMI WORLD HERITAGE SITE

FOR INQUIRIES:
+263772933071
Email: rays.trustizingane@gmail.com
www.raystrust.org.zw

13 CLIMATE ACTION

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

11 SUSTAINABLE CITIES AND COMMUNITIES

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P.O. BOX 1000
HARARE, ZIMBABWE

MUSHROOM ART COMPETITION

We would like to thank all those that participated in the Mushroom Art Competition. The Art work is still on display in the courtyard at the museum and will be there until the end of September. There were eleven schools in total that participated and over 10 adult entries as well. We have included some of the artwork in this newsletter and I am sure you will agree that there are some talented pupils. A special thanks to Ms Cathy Sharp for organising this competition and sponsoring many of the prizes and to Alliance Française for their assistance and sponsorship.

Congratulations to all our winners

9-10 year old Real Life

1 st Place	Takudzwa Mukanya	Whitestone School
2 nd Place	Ellie Rheam	Whitestone School
3 rd Place	Murray Wenham	Malilangwe Home School

9-10 year old Fantasy

1 st Place	Zack Greenland	Carmel Junior School
2 nd Place	Cara Matimbe	Petra Junior School
3 rd Place	Sasha Swanepoel	Carmel Junior School

11-12 year old Real Life

1 st Place	Josh Saunders	Malilangwe Home School
2 nd Place	Tinotenda Mupinga	Masiyephambili Junior School
3 rd Place	Tinotenda Maphosa	Milton Junior School
Highly Commended	Scot Wenham	Malilangwe Home School

11-12 year old Fantasy

1 st Place	Aaliyah Leher	Carmel Junior School
2 nd Place	Kudzai Chapepa	Carmel junior School
3 rd Place	Mbongeni Dube	Milton Junior School
Highly Commenced	Anotidaishe Dube	Masiyephambili Junior School

Senior

1 st Place	Nomatehemba Ncube	Girl's College
2 nd Place	Donnell Marufu	Masiyephambili College
3 rd Place	Gloria Hoffman	Titus College

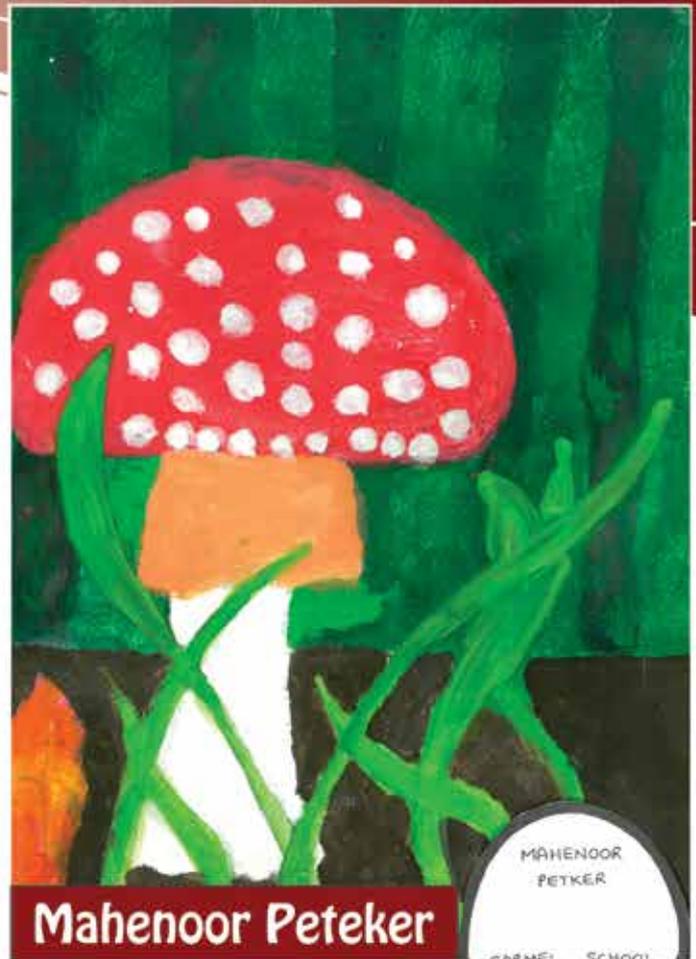
Adult

1 st Place	Natalie Beukes
2 nd Place	Nkosikhona Nkomo
3 rd Place	Di Charsley

MUSHROOM ART COMPETITION IN PICTURES



Anotidaishe Dube



Mahenoor Peteker

MAHENOOR
PETKER

FARMFL SCHOOL



Audrey Nkomo

AUDREY
NKOMO

MASIVEPHAK
JUNIOR



Aliyah Leheer

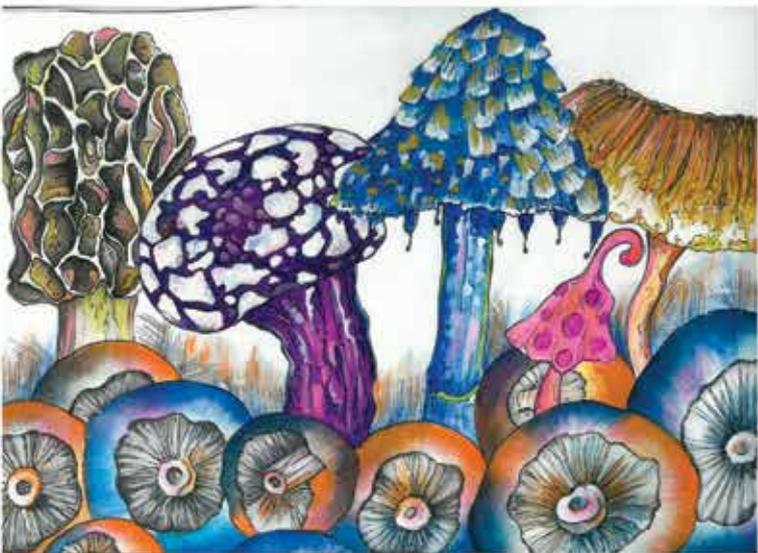
ALIYAH
LEHEER



Nkosikhona Nkomo



Naledi Kufira



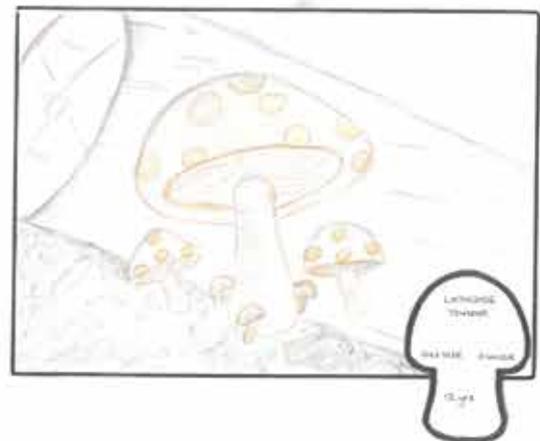
Natalie Buekes



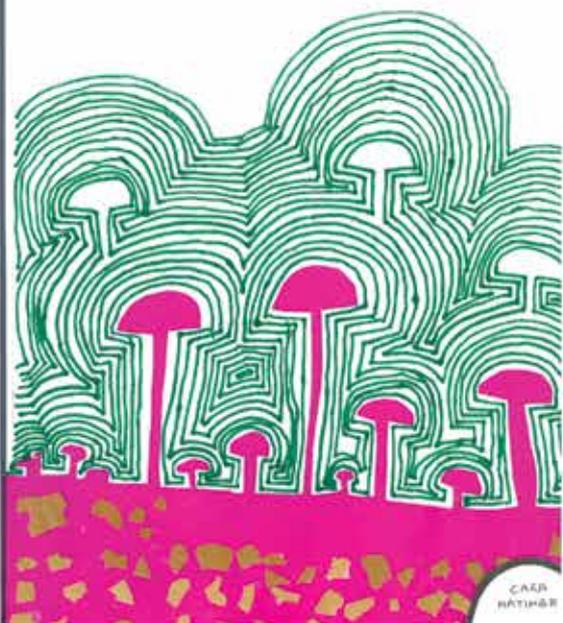
Joanne Mafara



Di Charsley



Lwandise Tshuma



Cara Matimbe



Kudzai Chapera



Gloria Hoffman



Murray Wenham