

Ifa Lemvelo



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

In this our 1st issue!!!!

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in the Eastern Highlands of Zimbabwe**

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Natural History Museum of Zimbabwe

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Bulawayo

Regional Director's Welcome

Welcome to our **first newsletter** which was an innovative idea to produce so as to let our stakeholders and other interested parties know what is happening at the museum as well as incorporate the stories behind the work that we have undertaken. This will be a monthly publications and we hope that you will enjoy this innovation and what the staff of the Natural History Museum of Zimbabwe are currently working on.



Entrance fees

- Locals:** Adults \$3
Children (5-14yrs) \$1
- SADC Countries:** Adults USD\$7
Children (5-14yrs) USD\$5
- International:** Adults USD\$10
Children (5-14yrs) USD\$5

Upcoming Events!!!!

- Holiday movies will start on Friday 12th April at 10, \$4/person-details in our next issue
- Join us for **Dynasties!!!!** Sir David Attenborough's new series from BBC Earth every Wednesday at 1 pm for the next 5 weeks, starting 27th March. Follow the true stories of five of the world's most celebrated, yet endangered animals. Each in a heroic struggle against rivals and against the forces of nature. These families fight for their own survival and for the future of their dynasties.
- Chimpanzee** 27th March.
Follow the life of the African Chimpanzee
- Emperor** 3rd April.
The story follows the lives and survival of the Emperor Penguin
- Lion** 10th April. A two year journey of a Pride of Lions in the Maasai Mara
- An outing in Sauerstown to discover the early history of Bulawayo coupled with the Friends of the Museum AGM on Saturday 4th of May 2019
- Museum club is back. More details in the poster on the last page
- Mushroom Art Competition (see poster)



NATURAL HISTORY MUSEUM OF ZIMBABWE

Alliance Française
Bulawayo - Zimbabwe

MUSHROOM ART COMPETITION

Visit the MUSEUM FUNGI DISPLAY for inspiration

Any Fungus or Mushroom

Original work in any Medium

ONLY on A3 or A4 paper

AGE GROUPS
9 & 10 years
11 & 12
13 - 15
16 - 18
Adult

Fantasy or Real

All entries submitted by the end of May 2019 to:
The Secretary,
Natural History Museum
L Takawira & Park Road
Bulawayo

Enquiries: Contact Ms C Sharp +263 772 347 135

Dr Donald G. Broadley Award



Dr Broadley spent his life time at the Museum, firstly at Mutare and then in Bulawayo and is considered as the “Godfather” of African Herpetology due to his phenomenal contribution to the understanding of the herpetofauna of Africa (approximately 500 publications). He travelled much of the Zambesiaca region collecting specimens in research that spanned five decades and built up the museum collections to the most comprehensive on the continent. Don was also a wealth of knowledge on many subjects and always willing to part with this information should anyone be interested and collaborated with colleagues throughout the world. He was a quiet unassuming man with a ready laugh and tireless energy. His unexpected death on 10th March 2016 left the museum staff without a mentor but our fond memories of him will always be with us. To honour his legacy “The Friends of Natural History Museum Association” provided a floating trophy, decorated with a Gaboon Viper to be awarded annually to the Curator that most emanates the values and scientific integrity that Don upheld.

The first time this award was presented was during the Friends AGM in June 2017 and was awarded to Ms Kudzai Mafuwe, Assistant Curator of Entomology for all her efforts to teach us all how to database our collections, how to clean the data and to publish them online which resulted in €60 000 being granted to the museum from the Global Biodiversity Information Facility (GBIF) and the European Union for a number of projects. Ms Mafuwe also received a grant from Critical Ecosystem Partnership Fund (CEPF) to research the dragonflies of the Eastern Highlands.



Congratulations

Kudzai Mafuwe
on this
well-deserved
award.

Threats to the dragonfly fauna in the Eastern Highlands of Zimbabwe

By Kudzai Mafuwe

Dragonflies (Anisoptera) are aquatic insects which belong to the insect Order Odonata which also encompasses the damselflies (Zygoptera). The term Dragonfly is used here in its wider sense to include all species of Odonata. Dragonflies are used as key indicator of water quality. They have their very own Dragonfly Biotic Index (DBI) that was developed by world experts, used to prioritise and assess the condition of wetlands and aquatic habitats for conservation action in many countries. Dragonflies are also very valuable natural predator of mosquitoes and midges and can save millions of dollars when included in integrated pest management strategies.

The dragonfly fauna of the Eastern Highlands biodiversity hotspot of Zimbabwe comprises of over 120 African species, including four endemics, recorded from more than 170 localities. Like many other dragonfly species around the world, the loss of wetland habitats from human related activities such as water extraction for domestic use, alien invasive species and water pollution from illegal gold panning activities in the mountainous water sites is having a massive impact on the long-term survival prospects for many dragonfly species in this region. Three species, endemic to the eastern highlands of Zimbabwe (The Inyanga jewel, Vumba sprite and Chimanimani bluet) are already listed under the threatened categories in the IUCN Red-List due to habitat destruction. In some other countries, some species have already become extinct, e.g. in Britain three species disappeared in the 1960s. This highlights the need to continuously collect data to get an accurate picture of dragonfly and wetland health across the globe so that healthy ecosystems can be maintained.

After learning about the plight of dragonflies and given their biological importance, our very own Entomologist and dragonfly expert in the making, Ms Kudzai Mafuwe who was trained by world authorities like Viola Clausnitzer and Klaas-Douwe ‘KD’ Dijkstra, embarked on a journey to explore the distribution of freshwater Odonata in the Chimanimani–Inyanga corridor and to provide baseline information on threats which are affecting these wonderful creatures. With a generous grant from the Critical Ecosystem Partnership Fund - BirdLife International, fieldwork was undertaken for a period of 1 year between June 2016 and July 2017, at 30

freshwater habitats areas including 11 sites within the protected areas of Chimanimani National Park, Vumba Botanical Gardens, and Inyanga, and 19 sites within the adjacent communal areas.

A total of 81 spp. (27 damselflies and 54 dragonflies) from 10 families were identified from a total of 2679 individual adults recorded within the 30 sites. Only two endemic species were found (*Pseudagrion vumbaense* - Vumba sprite and *Platycypha inyangae* - Inyanga jewel) during these surveys. The other two endemic species, *Africallagma cuneistigma* (Chimanimani bluet) and *Elatoneura lapidaria* (Rock threadtail) may be present in the region but they were not found, we hope that this was due to the limited time that was given for this survey period.



The assessments showed that most Anisoptera species in this region are wide spread and do not have a specific biotope that they require. This could be explained by the fact that a majority of Anisoptera species particularly those within the Libellulidae and Aeshnidae contain a great number of species, e.g. *Pantala flavescens*, that are widespread and generalist species which have adapted to a wide spectrum of habitats and microhabitats. On the other hand, a majority of the Zygoptera species were found to be mostly associated with the artificial dams and ponds. This is perhaps due to the fact that they are smaller than their dragonfly relatives and do not travel long distances, therefore they would prefer perennial habitats that have a long-term supply of water and more sites for perching characterised by artificial ponds and dams.

The project was also identified many human activities to have an impact on the diversity of Odonata species in this biodiversity hotspot in Zimbabwe. These include the presence of:- commercial exotic tree plantations; mining activities; vegetation clearing and land scape modification for ecotourism; as well as

communal settlements characterised by the presence of stream bank cultivation and over extraction of water for domestic use. The impact appears to be greatest in areas that have been recently harvested and cleared, with some degree of recovery in second-growth forest habitats. These anthropogenic factors can potentially threaten the existence of freshwater species including the endemic species the Inyanga jewel, that was recorded at a site that fell outside the protected area along the Haroni River.

The results from these surveys illustrated how the diversity and distribution of Odonata species differs among habitats with varying land use activities. Taken together, the results from these surveys indicate that several human activities (human population increases and human encroachment onto riverine habitats) potentially threaten the existence of freshwater species in this biodiversity hotspot and Southern Africa as a whole. The findings have direct importance for our understanding of the environmental pressures on freshwater diversity, and broader implications for this area that is considered the source of endemism in Southern Africa.

The project also managed to help leverage more funding from the Global Biodiversity Information Facility (GBIF) and the European Union through the Biodiversity Information for Development (BID) program for a project titled “Freshwater biodiversity of the Eastern Highlands of Zimbabwe: Assessing conservation priorities using primary species-occurrence data.” This will help the project to achieve the long-term goals of identifying the important sites for conservation for freshwater biodiversity in the Eastern Highlands of Zimbabwe.

We recommend the inclusion of several diversity studies in different landscape characteristics to unravel some of the other land use change that can affect freshwater animals. An additional challenge is to determine how future perturbations (e.g. Climate change) will affect some of the endangered species in this biodiversity hotspot; and other biodiversity hotspots in Africa.





One such trip was to Lake Kariba to the area where *Vulcanodon* was first discovered during the construction of the dam. The trip was led by Prof. Jonah Choiniere of the University of the Witwatersrand, South Africa with members from the U.S.A, U.K, as well as a team from Zimbabwe. As the water levels of the Lake were low we were hoping to find additional *Vulcanodon* fossil bones but unfortunately we only found a few fragments. We then moved to other places along the shores of the lake.



We were very thrilled to discover some *Phytosaur* material. This taxon is an important find and the first in Sub-Saharan Africa. This find will help us understand how the Mid-Zambezi Basin correlates locally with the main Karroo Basin, and globally with other upper Triassic and lower Jurassic strata. We also discovered another aquatic species in the Lower Pebbly Arkose unit, this included a Lungfish of which we collected some skull and teeth fragments

Uncovering the creatures of the Mesozoic

By Mike Zondo

It is always fascinating to report on the discoveries of the bizarre animals that walked our planet many millions of years ago. To uncover the mysteries of the past life in Zimbabwe, the Department of Palaeontology undertook some research field trips in collaboration with some renowned international Palaeontologists.



The department also went with some local scientists and together with Chris Griffin, a PHD student from the Virginia Tech, USA, to the Zambezi Valley where a lot of *Rhynchosaur* material was recovered. This included pieces of jaws and other bones and of these 377 specimens have been cleaned. As we continued to search the Karroo sediments, more taxa were found including *Dicynodonts* represented by skull fragments and other pieces. A full skeleton of a species was also recovered and this will be published at a later stage.

of electronic documentation of its collections and so far 3253 fossil specimens have been entered into the electronic inventory, 240 mineral and rock specimens have also been electronically documented.

Please make sure you have renewed your Friends Membership



The last trip was to Sentinel Ranch in the Tuli Basin where we carried out some conservation work on the insitu *Massospondylus* skeleton, to keep it in a good state of conservation since it is exposed to the weather. There are plans to have the site roofed. As we searched for more fossil sites, more fossil bones were collected and these included a small femoral head. It could belong to a juvenile *Massospondylus* or another small species.



The Palaeontology department enjoys good relationships with both local and the outside world and to assist these researchers we are in the process

ENROLMENT !!!

Museum Club

Is back. Enroll your 7 to 14 year old.

Highlights!!!

- ◆ Monthly nature walks every last Saturday of the month at 9am starting March 30th
- ◆ Club meetings over the holidays.

Inquire and subscribe from:

1. The museum: natmuse@netconnect.co.zw
2. Rays: rays.trustizingane@gmail.com

In our next issue!!

- What to look out for in the Dynasties series
- From Tacos to Cavaders!!!
- International Museums Day.