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WORKSHOP:

How to get a DNA
barcode and what to do
with it?

Date: 18th August 2014
Venue: University of
Nottingham Malaysia

See page 4 for details

Malaysia
Barcode of Life

BOLD
SYSTEMS

BULLETIN OF THE MUSEUM OF ZOOLOGY



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EDITORIAL:

The last few weeks at Museum Zoology UM have been quite busy as we've seen an increase in family visits during the school holidays. It is great to see the next generation of zoologists appreciating the specimens on display in the exhibition hall. The research assistants have also been busy training ushers as part of plans to extend our visitor program as well as involving in various outreach events.

Besides this our research projects are continuing full steam and two of our latest publications are highlighted below. Following the success of the DNA barcoding workshop at UM last year, the Biodiversity Genomics Lab will be hosting another workshop as part of the pre-conference schedule of the Society of Conservation Biologists meeting in Malaysia in August.

Please check our facebook page for more information on Museum Zoology UM events and activities and don't hesitate to get in touch for more information. We look forward to welcoming you at the Museum soon!

—John Wilson

RECENT PUBLICATIONS:



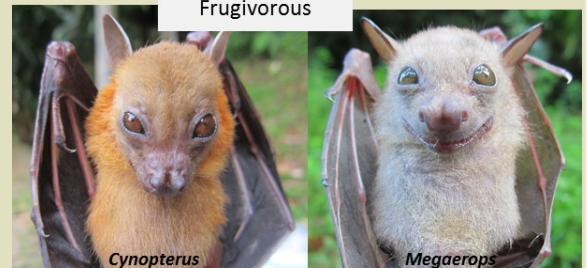
Wilson JJ, Karen-Chia HM, Sing KW, Sofian-Azirun M. Towards resolving the identities of the *Graphium* butterflies (Lepidoptera: Papilionidae) of Peninsular Malaysia. *Journal of Asia-Pacific Entomology*. 17(3): 333-338 (2014)

Also see: Page & Treadway (2014) Revisional notes on the *Arisbe eurypylus* species group (Lepidoptera: Papilionoidea: Papilionidae). *Stuttgarter Beiträge zur Naturkunde A, Neue Serie*

Left: Graphium butterflies are famous in Peninsular Malaysia for their colourful wings and puddling behaviour, yet their taxonomy remains unresolved.

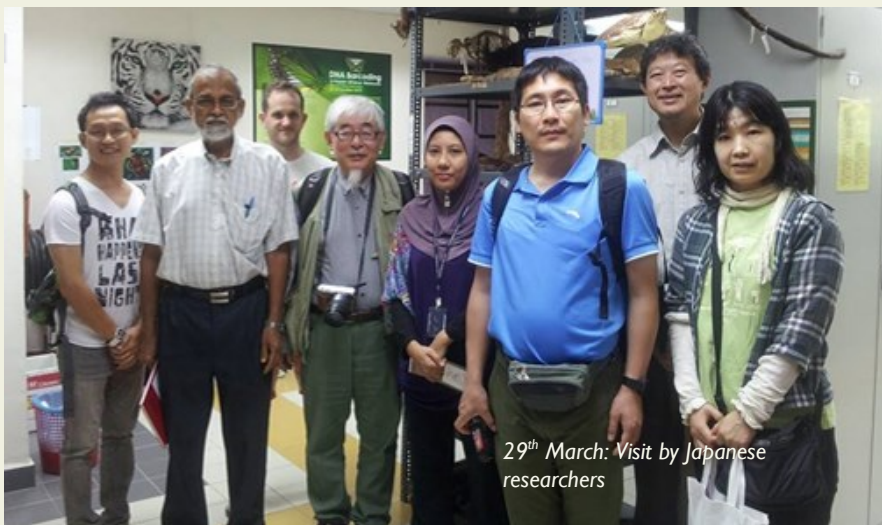
Syaripuddin K, Kumar A, Sing KW, Halim MRA, Nursyreen MN, Wilson JJ. Mercury accumulation in bats near hydroelectric reservoirs in Peninsular Malaysia. *Ecotoxicology*: In Press (2014)

In large man-made reservoirs such as those resulting from hydroelectric dam construction, bacteria transform the relatively harmless inorganic mercury naturally present in soil and the submerged plant matter into toxic methylmercury. Methylmercury then enters food webs and can accumulate in organisms at higher trophic levels. Bats feeding on insects emerging from aquatic systems can show accumulation of mercury consumed through their insect prey. In this study, we investigated whether the concentration of mercury in the fur of insectivorous bat species was significantly higher than that in the fur of frugivorous bat species, sampled near hydroelectric reservoirs in Peninsular Malaysia.



Above: Some of the bats that were captured and released for this study.

VISITS TO THE MUSEUM:



29th March: Visit by Japanese researchers



1st April: Visit by UM Vice Chancellor



18th March: Visit by students from University of Nottingham Malaysia Campus

The past few months have been quite busy for the Museum, as our efforts to promote the Museum have paid off and we are experiencing an increased number of visits, both from academic and non-academic backgrounds.

Other museums, both local and international, have shown interest in visiting our collections and exhibitions. We were one of the Museums in UM that was visited by the Malaysian University Network (MyUMnet) during their inaugural meeting. This was followed by a visit by a group from the Kyoto University Museum.

The Vice Chancellor of UM, Prof Dato' Dr. Mohd Amin Jalaludin, made a visit to the museum on the 1st of April to view the state of the Museum and discuss the funding for the next couple of years. He gave several helpful comments and ideas to improve the exhibition hall and thankfully funding has been approved following the visit.

Aside from the usual visits from classes within UM, we also hosted a visit from the University of Nottingham Malaysia Campus that coincided with a talk by Dr. Ahimsa Campos.

Several family groups have visited us as a way to spend their school holidays. It is refreshing to have younger visitors, they ask some very interesting questions.

The website has been very successful in informing and attracting visits from these groups and schools in the surrounding Petaling Jaya area. We hope to see more visits in the future.

—Thary Gazi



13th June: Some of the younger visitors from a family group.

>>>See page 4 for Gary Sing's first hand account of handling younger visitors during the June school holidays.

RECENT MUSEUM COLLABORATIONS:

Following our collaboration with Petrosains, we explored the possibility of working with other groups within and outside of the University of Malaya.

After the recent Malaysia University Museums Network (MyUMnet) meeting, University of Malaya's Museum of Asian Art invited us to participate in a joint UM Museums booth at the International Museum Day Carnival that was held at the Shah Alam Museum from 15-18 May 2014. It was a hectic weekend with large crowds that allowed us to display natural history collections to the masses



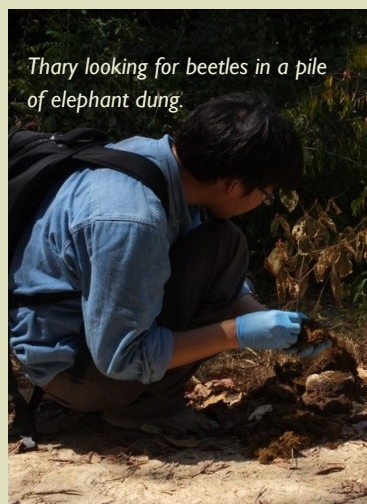
Part of the UM Museums booth at the International Museum Day Carnival



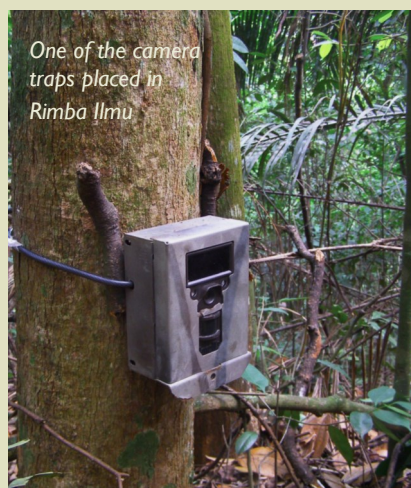
A Spotted Dove (*Streptopelia chinensis*), one of the many bird species found on campus.

The Museum also contributed its expertise to RIMBA, the environmental outreach arm of UMCARES during their Earth Day activities. With the Museum's expertise in outreach and our extensive collection of reference material, we aided them in organizing and conducting a successful birdwatching session at the Varsity Lake.

We also helped out with the collection and identification of Elephant associated Dung Beetles with the Management and Ecology of Malaysian Elephants (MEME) research group and the Netherland's Naturalis Biodiversity Centre. This involved a couple of trips to Grik, Perak, one of the conservation hotspots in Malaysia. With some beginners luck we managed to collect some very interesting beetles.



Thary looking for beetles in a pile of elephant dung.



One of the camera traps placed in Rimba Ilmu

It all ties back when I casually mentioned that RIMBA was interested in conducting an inventory of the mammals in the Rimba Ilmu Botanical Gardens to MEME's resident camera trapper, Jamie Wadey. He was quite happy to contribute his expertise and equipment for a short camera trapping program in UM's forests. The traps were deployed on the 15th of June 2014, and we will see the results by the next Bulletin!

—Thary Gazi

18th March: Dr. John gives a briefing of the museums during the visit by attendees of the Malaysia University Museums Network inaugural meeting (MyUMnet)



18th March: Visit by attendees of the Malaysia University Museums Network inaugural meeting (MyUMnet)



6th June: Visit by family group



YOUNG VISITORS

During the school holiday (June), museum has received some enquiries from parents to bring their children to visit our museum. Most of the parents wanted to expose their children to the fauna of Malaysia. Personally, I think these parents have made the right choice to come to us since our museum of zoology has one of the best documented zoology collections in Malaysia.

I was lucky to have chance to toured 1 of the groups that came from Seremban. There are 4 families with 8 children in the group. I was nervous during the day because this is my first time touring a group that consisted of various ages.

The group was arrived on time except one family still finding their way to museum. One of the parents (Mr. Ben) explained that the map that

shows in our website is not clear enough to lead them to the destination (Thanks Mr. Ben, we will look into this and improve the map).

I welcomed the group and introduced them to our curator and assistant curator who are also present on the day. We normally start the tour by introducing the history of the Museum, University of Malaya and the importance of Museums. However, I decided to skip the history part as children are not interested in this matter. Before entering to exhibition hall, I lead the children to the beautiful mural in our seminar room about the Geological Time Scale to explain the bizarre forms of prehistoric animals. Guess what, one of the child told me that he know life is start from Big Bang theory! He was awesome!

During the tour in exhibition hall, I found the children were very well behaved! They always answered my questions and did not hesitate to ask question when they do not understand my explanation. The children are easy tired when they had to stand for a long time. So I invited them to sit on floor right opposite with the huge King Cobra specimen! Then, we continued to talk about snake and their behavior. The kids seem to know a lot about snakes.

Since the Museum Facebook page and Website was created we have witnessed an increase of enquiries by public. We are very happy to see the increase interest of parent to bring their children to visit our museum!
— Gary Sing

Visit the Museum Facebook page and website at:
<https://www.facebook.com/museumzoologyum>
<http://museumzoology.um.edu.my>

UPCOMING EVENTS



The 3rd Regional Conference of the Society for Conservation Biology - Asia Section

19-22nd August 2014, Melaka, Peninsular Malaysia

Malaysia
Barcode of Life

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Pre-Conference Workshop:

How to get a DNA barcode and what to do with it?

Date: 18th August 2014 **Venue:** University of Nottingham Malaysia Campus

§ Over the past 50 years, Southeast Asia has suffered the greatest losses of biodiversity of any tropical region in the world. DNA barcoding, the use of short standardized DNA sequences for species identification and discovery, offers great promise as a solution to overcome the challenges of biodiversity monitoring and documenting the incredible diversity of the region before it is potentially lost forever.

§ This workshop will provide an opportunity for those new to molecular techniques to learn how generate DNA barcodes, to edit and analyze their barcodes, and avoid some of the common pitfalls of new users.

§ The first part of the workshop will cover the basic molecular methods required to generate a DNA barcode > sample preparation > DNA extraction > PCR > DNA sequencing. This will be covered through lecture, videos and demonstration.

§ The second part will cover the steps needed to be taken after sequences are returned from the sequencer > sequence editing > sequence alignment > upload of sequence to BOLD > submission of sequence to GenBank > Identification of the sequence > biodiversity assessment using a group of sequences. This will be hands on session.

A nominal fee of RM30/ 10USD will be charged for the workshop to cover refreshment and handouts. Payment will be collected upon registration at the workshop venue in cash.

Please contact johnwilson@um.edu.my for more information