

MALAYSIAN

Naturalist

RM12 VOLUME 67-2 DECEMBER 2013

**Structurally Ecological,
Functionally Green**

A cool way to live

Saving the Snake

Say No! to Python Patterns

**Are elephants
friend or foe?**

*Understanding the
human-elephant conflict*

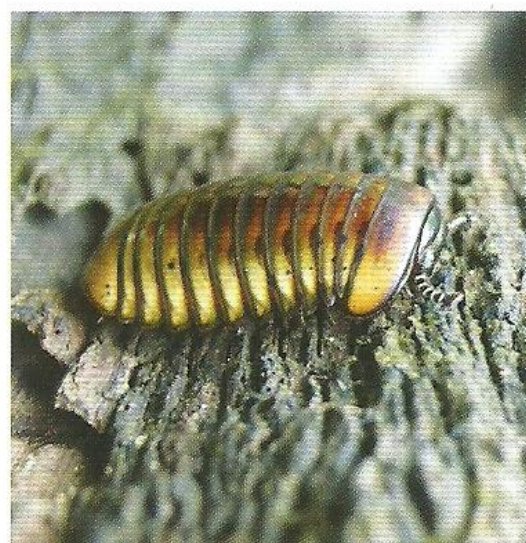
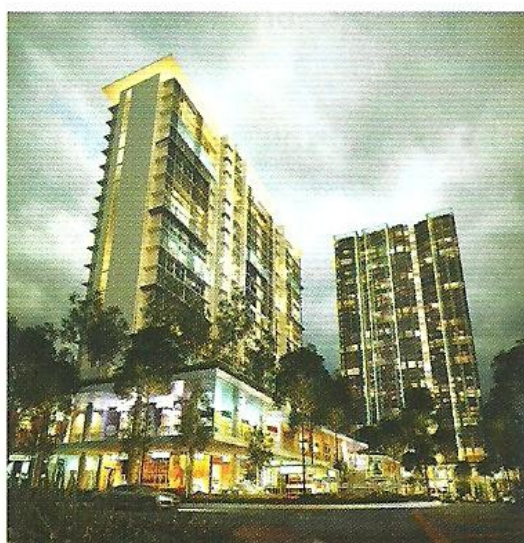
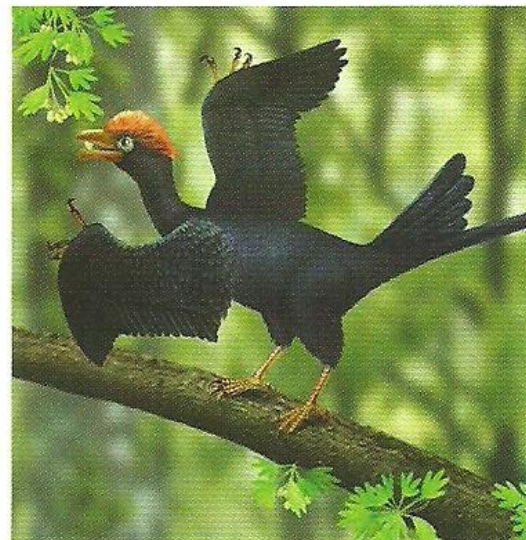
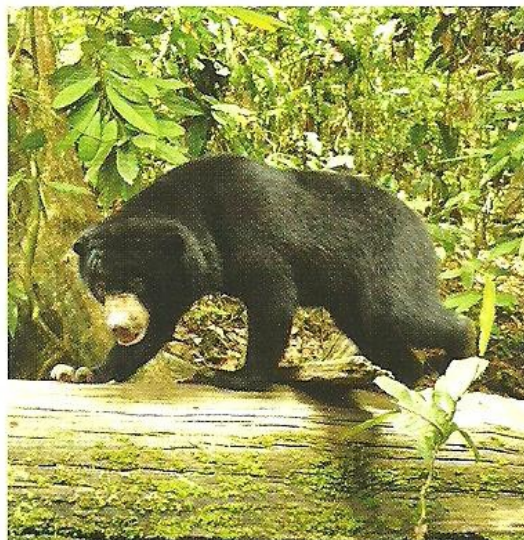


PUBLICATION OF THE
MALAYSIAN NATURE SOCIETY (MNS)
PP5527/09/2012(031178)

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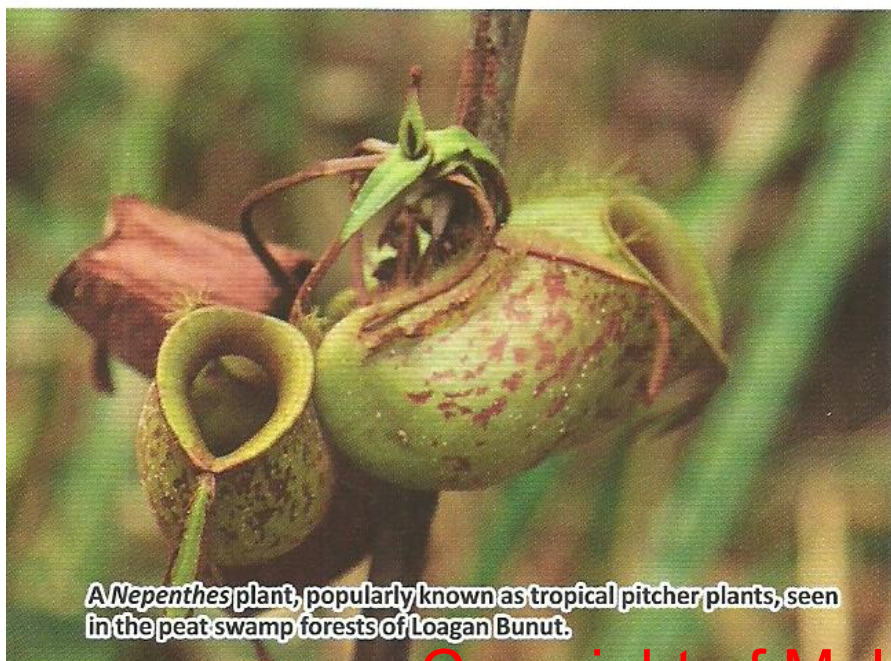
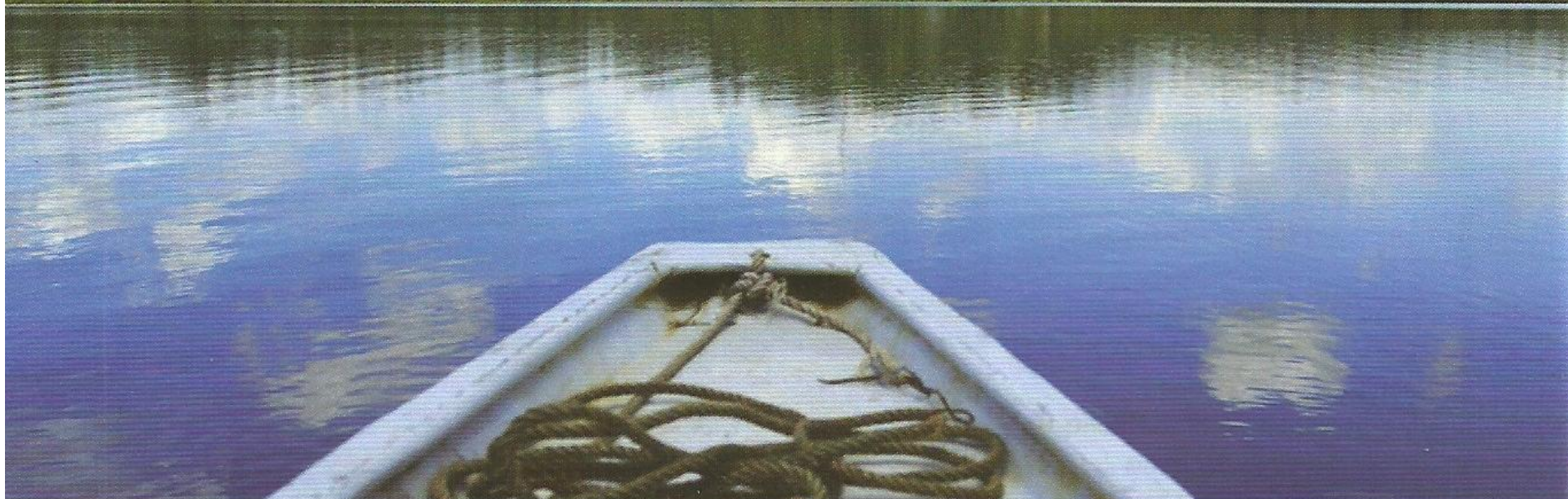
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Such beauty must not be plucked

EXPLORING LOAGAN BUNUT

TEXT AND IMAGES BY KHO CHIK WEI AND HOLED JUBOI



A *Nepenthes* plant, popularly known as tropical pitcher plants, seen in the peat swamp forests of Loagan Bunut.

In May 2013, the Sarawak Biodiversity Centre (SBC) organised a trip to Loagan Bunut National Park with a special purpose – to collect plant, soil and water samples unique to peat swamp environments for research.

The team's goal was to study Loagan Bunut's microbial genetic diversity, with special attention towards actinomycetes and fungi, using metagenomic and transcriptomic studies concomitantly with standard microbial culture methods.

In addition, the team is interested in the unique environment of natural lake water that may nurture interesting algae species for SBC's microbial library.

Loagan Bunut is the only natural lake in Sarawak, fed by the Tinjar and Baram rivers. It is unique as despite being filled for most of the year, the water level fluctuates.

During the dry season (between February and August), Loagan Bunut transforms into a huge expanse of dry, cracked mud.

Peat, a type of soil high in organic content from the decomposing plant litter of a transitioning forest, has developed on top of the alluvium sediment deposited by the floodwaters.

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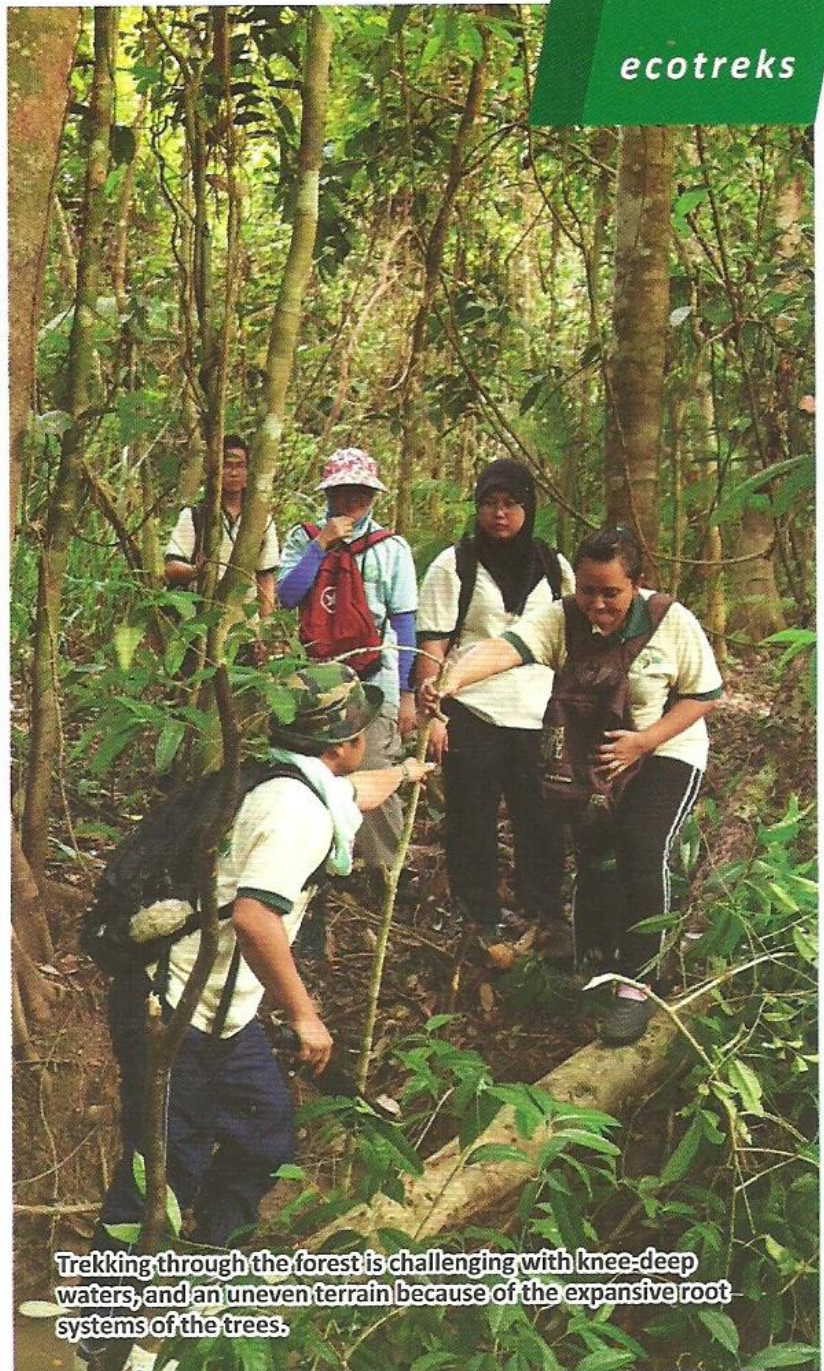
During heavy rain, water is absorbed by the peat and is slowly released during the dry periods, sustaining a constant supply of water. This extraordinary environment supports an ecosystem teeming with limited yet a niche biodiversity. This was evident from the colourful array of birds and insects observed during our journey through the peat swamp forests and across the waters of the lake.

The Hydrology Trail is one of the tracks that passes through the peat swamp forest. It took a 20-minute boat ride from the national park headquarters across the lake to get to the starting point of the trail.

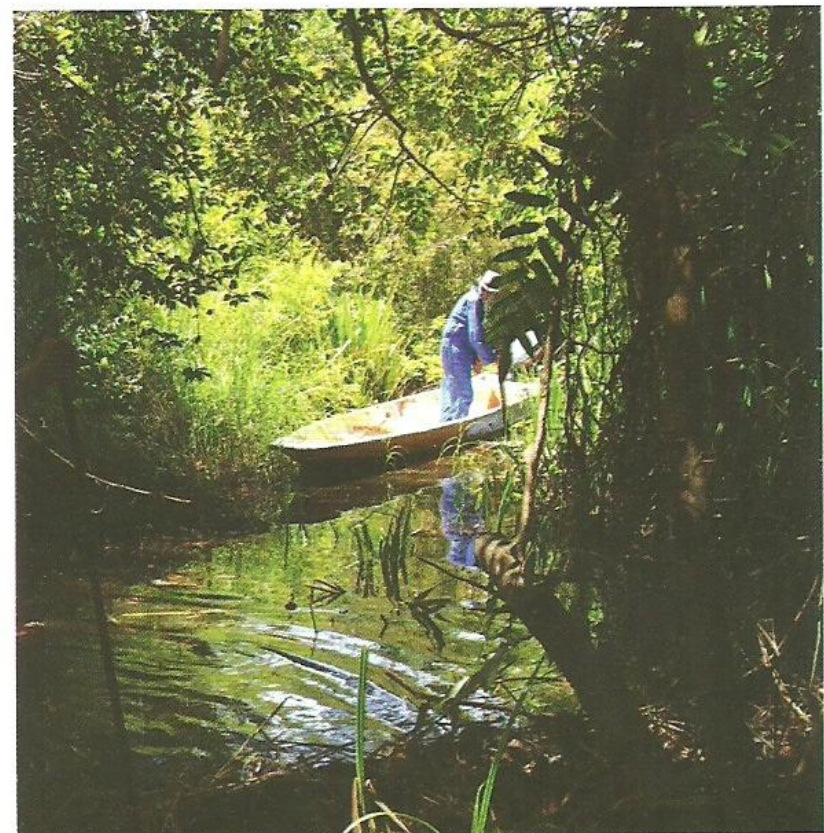
Due to the relatively low water levels, our boat had to stop about 10 meters from dry land. We then had to walk through knee-deep water to reach the forest. The forest floor consists of a network of roots covered in thick organic material. It was definitely a challenge because our legs could easily have slipped between the gaps in the roots. Despite the difficulty, the two-kilometre trail provided a close-up view of the unique ecosystem.

Despite the limited diversity of plants that swamp forests support, the species found are adapted to the ecosystem, and provided valuable additions to our herbarium. The observation of such unique flora and fauna could mean that the microbial diversity would be as interesting.

With our fingers crossed, and a robust isolation process in the lab, we imagine that such a special ecosystem will offer microbes that could potentially produce novel powerful antibiotics. 🐸



Trekking through the forest is challenging with knee-deep waters, and an uneven terrain because of the expansive root systems of the trees.



Note: Kho Chik Wei and Holed Juboi are Research Officers under SBC's Microbiology Programme. For more information on the Sarawak Biodiversity Centre's roles and activities, please check out SBC's website, www.sbc.org.my or send an email to biosar@sb.org.my