

Evolution in action at valley

TS 11.09.2006 P. 14

KOTA KINABALU: The Kinabatangan valley is not just a haven for wildlife but is also a valuable natural laboratory of evolution, a team of Universiti Malaysia Sabah scientists found.

"If Charles Darwin had not gone to the Galápagos Islands, his theory on the origin of the species could have been born in the Kinabatangan valley itself," said Dr Menno Schilthuizen, an associate professor at UMS Institute for Tropical Biology and Conservation.

The Lower Kinabatangan region has long been known as one of the few remaining places in Sabah teeming with wildlife such as pygmy elephants, proboscis monkeys and orang utans.

The UMS researchers have now dubbed the valley as a "veritable evolution workshop" after observing various species

of land snails and the adaptations made by these creatures, as well as their predators.

Dr Schilthuizen had led the team to the *Opisthostoma* snails at the valley's limestone outcrops.

The *Opisthostoma* snails are known for their twisted shells adorned with ribs and spines.

In the September issue of the journal *Evolution*, the UMS scientists reported that each hill had an *Opisthostoma* population with a different-looking shell.

When the researchers studied the snails' DNA, they found that the differences in shell shape were not just determined by the populations' genetic relatedness.

The mystery was solved when Dr Schilthuizen and field worker Berjaya Elahan of the Sukau-based Kinabatangan Orangutan Conservation Pro-

ject started observing the snails at night.

They discovered that the *Opisthostoma*'s worst nightmare was a nocturnal slug, a new species of a genus called *Atopos* that uses its tongue to bore holes in the shells and suck the occupant out.

When they compared the predator's behaviour on different hills, they found that in each place it had different table manners.

On the hill of Tandu Batu, for example, the predator likes to attack the bottom of the shell, whereas on Gomantong, it prefers to enter its prey from the tip of the shell.

"Analysis of the arrangement of the spines, ribs, and flanges on the snail's shell showed that each population adapts its shell to defend against the local predator's behaviour," Dr Schilthuizen explained.



INTERESTING STUDY: The *Opisthostoma* snail was found to have evolved differently at different limestone hills dotting the Kinabatangan region in Sabah.