

receiving a grant from the Australian Stock Exchange for \$500,000, they put together a teachers pack on CD. Every school in Australia received one.

### **THE NATIONAL ZOO AND AQUARIUM, CANBERRA**

Trent left Taronga Zoo 10 years ago after meeting and marrying his wife, re-establishing himself in her home town of Canberra at the family's National Aquarium. The vision was to transform the National Aquarium into a zoo with many outdoor exhibits of larger animals. His life now revolves around big cats and primates but his interest in reptiles is still there

and nowadays has less to do with the job and more to do with his own interest: that is to get other people who are interested in reptiles and amphibians together in a social atmosphere and also to provide novice herpetologists with support and a link to others sharing the same passion. "The hobby of reptile keeping is really nurturing a curiosity about keeping and breeding these animals and is evolving at a rapid pace. There are a whole range of species in captivity these days with exciting things happening." Trent said as he ended his presentation.  
Stay tuned!

### **TINY SPECIES OF LIZARD IS SO LIGHT THAT IT FALLS TO THE GROUND LIKE A FEATHER, SCIENTISTS HAVE DISCOVERED**

*Matt Walker, Editor, Earth News*

Outwardly, little of the animal's body seems adapted to flying, gliding or moving through the air in any way. But a slow-motion camera has revealed that when the lizard jumps from a height, it can slow the rate of its descent and land gently on the ground.

The lizard's surprising aerial ability might help explain how some animals became true gliders. Details of the little lizard's talents are published in the *Journal of Experimental Biology*.

#### **Controlled descent**

Active flight, powered by the flapping of wings, has evolved in three living lineages of animals: birds, bats and insects. But at least 30 different types of animal have evolved the ability to control their aerial descent, by parachuting or gliding to the ground. For example, gliding frogs use huge webbed feet, flying squirrels use long flaps of skin between their legs and flying fish use their fins to glide.



*Holaspis guentheri, spotted stripes turn from white to a brilliant blue as they stretch over the hips. A slender, flat build helps.*

Other animals have less obvious morphological adaptations. Gliding snakes flatten and undulate their bodies, which helps to slow their fall while some species of ant are so tiny they can jump out of trees and freefall gently to lower trunks without hurting themselves.

**Bieke Vanhooydonck** of the University of Antwerp became extremely interested when she read some old scientific papers reporting anecdotal evidence that a relatively ordinary species of lizard

might also be able to glide from tree to tree.

*Holaspis guentheri* belongs to a group of lizards known as Lacertids, which live in the Old World.

Though colourful, they do not stand out in terms of their behaviour,

morphology or ecology.

"Also, compared to other gliding lizard species, it does not have any conspicuous morphological adaptations to an aerial lifestyle, ie no cutaneous flaps, webbed feet etc," says Vanhooydonck.

"It made me very curious about whether these animals were really able to 'glide' and if so, how they were accomplishing it."

*(Cont'd page 15)*

## CREATING A FROG FRIENDLY HABITAT

Emma Keightley, ACT Waterwatch,  
Ginninderra Landcare Group

Grant funds allocated to this project will be used to update and reprint a booklet developed by ACT Frogwatch in 2006 titled 'Creating a Frog Friendly Habitat in your backyard, school ground or rural property - a resource for communities in the ACT and region'.

The direct outcome of the project is to educate the community about creating frog friendly habitat and thus provide new and/or enhanced habitat areas for frogs in the region. The engagement of the community would provide broader awareness and involvement in catchment health and biodiversity issues in the ACT region and hopefully lead to further participation in the ACT Frogwatch Census.

## CLIMATE CHANGE RESPONSES IN THE EASTERN WATER DRAGON

Nadav Pezaro, School of Biological Sciences,  
University of Sydney

This study aims to understand how climate change may influence nest-site selection and embryonic physiology in the Eastern Water Dragon (*Physignathus lesueurii*) and to determine how

variation in these traits facilitates their adaptation to different environments. ACTHA's funding will assist with the purchase of 40 miniature thermal data loggers which record nest temperatures, and will be used at the Australian National Botanic Gardens (ANBG).

Nadav will compare the nesting behaviour and embryonic responses to temperature in water dragons from populations along their natural distribution, ranging from northern QLD to Kosciusko National Park. The variation between the climatically distinct populations will indicate both the mechanisms and extent of the water dragons capacity to adapt in a changing environment.

The intermediate population at the ANBG provides an excellent point of contact with the public and an opportunity to communicate research outcomes and the unique ecology of these reptiles. Nadav will continue and expand the ongoing research program at the ANBG (where he conducted his honours research) and establish a water dragon research website that will serve as a source of information and provide an opportunity for the public to participate in the research by reporting observations of nesting events through online data sheets.

"lizard is so light that it falls to the ground like a feather" Cont'd from page 7)

### Leaping platform

So Vanhooydonck and colleagues in Belgium and France filmed individual lizards leaping from a platform two metres above ground.

They compared the performance of *H.guentheri* with a rock-dwelling lizard (*Podarcis muralis*) that never takes to the air and a highly specialised leaping gecko (*Ptychozoon kuhli*, pic right) that has a range of skin flaps that it uses to parachute to the ground. For each, they examined the duration of each species' descent, the horizontal distance it covered and at what speed.

Both the rock-dwelling lizard and *H.guentheri* landed 50 cms from the base of the platform, while the gecko landed up to 1m away. But *H.guentheri* fell for longer, and more slowly than its rock-dwelling competitor.

"Much to our surprise, *H. guentheri* is able to slow down its descent and has low impact forces upon landing," says Vanhooydonck.

*H. guentheri* weighs just 1.5g which is one third of the rock-dwelling lizard's weight and one-tenth of the gecko's. X-ray scans of the Lizard's body

revealed its bones are packed full of air spaces.

Once weight was factored in the researchers found that *H.guentheri* landed 20cm further away than it should have done had it fallen like a stone.

Although the Lizard's light weight and ability to fall gently are linked, it is still unclear whether its

air-filled bones are an adaptation for parachuting, or whether they evolved for another reason like escaping predators.

"It could be just how other gliding animals took the first evolutionary steps towards an aerial lifestyle", she says.

