

## **In This Issue**

In This Issue.....	1
What is it?.....	1
Crossword – focus on soils.....	2
World Clock.....	3
The Blue Tick.....	3
Elusive Chinese cat photographed for first time in the wild .....	5
Rare Japanese wildcat edging closer to extinction.....	5
Interesting Stuff.....	5
Taurine in the diet makes for bolder birds .....	5
Extinct dolphin surfaces again.....	6
Parks 'failing Africa's wildlife' .....	6
What is it – Answer .....	6
Crossword – last month’s solution .....	7

[Subscribe](#)

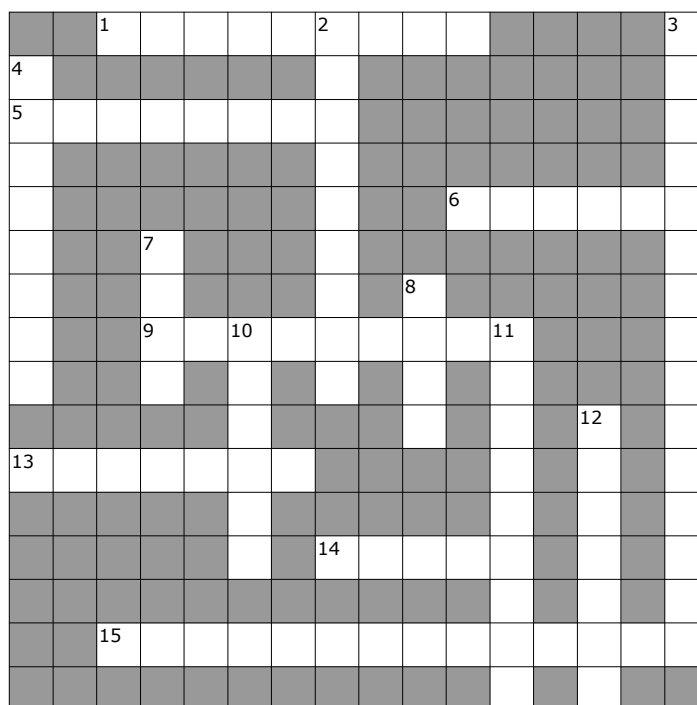
## **What is it?**



Figure 1. I found these tracks in and around puddles near the banks of a well-wooded stream in the southern Sabi Sand Wildtuin. What do you think made them?

**Opinions expressed in this newsletter are not necessarily those of Enviroskills or of the editor. Enviroskills is not liable for any errors or any actions in reliance thereon.**

## Crossword – focus on soils



Created with EclipseCrossword — www.eclipsecrossword.com

### Across

1. A property of soils, which allows liquid to pervade it by osmosis or diffusion. (9)
5. Process whereby substances are removed from soil by percolating water. (8)
6. A soil forming process that influences soils by subtraction of minerals or other properties. (6)
9. Soil forming process in which soil is changed by inclusion of new materials. (9)
13. Term used to described soils that are easily broken into small fragments or reduced to powder. (7)
14. Partially decomposed organic matter; the organic component of soil. (5)
15. A soil forming process that alters soils by movement of soil properties from one area to the next. (14)

### Down

2. The combination of clay, silt and sand particles in a soil is known as an ..... (9)
3. A soil forming process in which soil properties are altered over time into having new characteristics. (15)
4. Clay or silt or gravel carried by rushing streams and deposited where the stream slows down (8)
7. A very fine-grained soil that is plastic when moist but hard when dried or burned. (4)
8. A rich soil consisting of a mixture of sand and clay and decaying organic materials. (4)
10. A soil having only two primary layers and one that is usually sensitive to erosion. (6)
11. Soils formed as a result of evaporation of "perched vleis" into alkaline patches. (9)
12. A specific layer or stratum of soil or subsoil in a vertical cross section of land. (7)

[Contents](#)

***There is nothing in which the birds differ more from man  
than the way in which they can build and yet leave a landscape  
as it was before.***

***Robert Lynd, The Blue Lion and Other Essays***

## World Clock

Visit this site for a terrifying look at some of the data affecting us on planet earth today.  
<http://www.poodwaddle.com/worldclock.htm>



[Contents](#)

## The Blue Tick



The blue tick (*Boophilus decoloratus*) is one of the most widespread ticks in the world, being found in India, the near east and sub-Saharan Africa where it is the vector for diseases such as redwater fever, gall fever, Theileriosis, Pseudomonas, Babesiosis, Rickettsias and even Crimean Congo haemorrhagic fever. (Baker, 1999)

Ticks fall into two main families, viz. Ixodidae (hard ticks) and Argasidae (soft ticks or tampsans). The blue tick falls into the hard tick family, which are characterised by the hard scutum or dorsal shield covering the back.

Anatomically, hard ticks differ from other arachnids in that their bodies are not segmented in the typical fashion, but consist of a highly expandable sac called the idiosoma. As a female tick ingests blood, her body expands tremendously until it may reach 200 to 600 times its original body weight (Sonenshine, 1991). Male ticks have a relatively bigger scutum and do not expand to nearly the same extent as females.

The mouthparts are easily visible from above and consist of two highly mobile palps on the outer edges, a pair of chelicerae between them, which protect the rod like hypostome in the centre. When feeding, the palps move sideways, exposing the chelicerae, which cut through the skin of the host, allowing the hypostome to pierce the tissue. The hypostome is covered with rearward pointing barbs that make it difficult to be dislodged. In addition, most hard ticks produce a cement-like substance in their saliva, which literally glues them into place. After feeding is

complete, the tick is able to dissolve the “glue” and release itself from the host. The saliva also keeps the host's blood from clotting while the tick eats, but unlike a flea's saliva, it does not usually include compounds that cause itching and swelling.

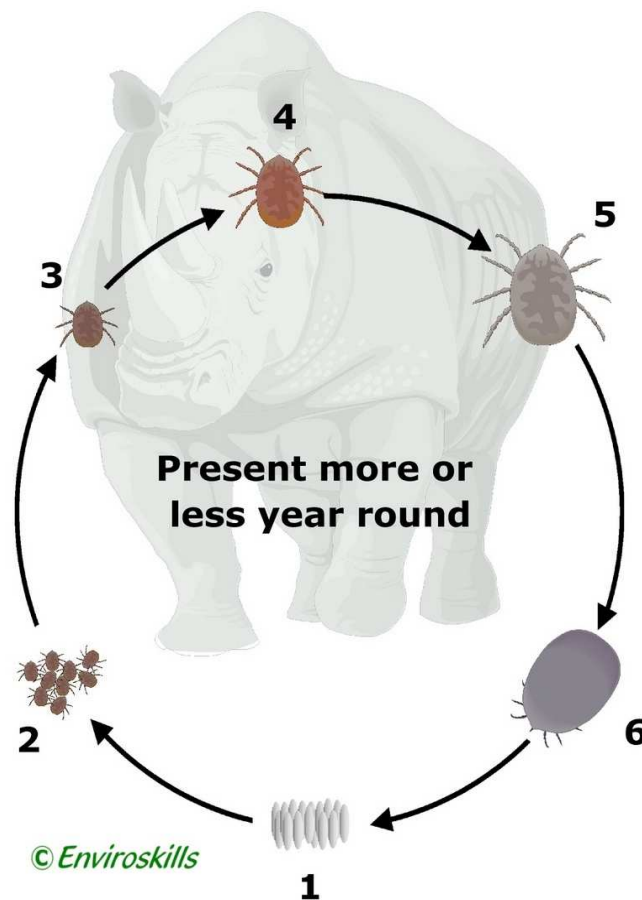


Figure 2. Illustration showing typical lifecycle of a Blue Tick (*Boophilus decoloratus*)

Hard ticks have one of three different life histories with respect to optimizing their chance of contact with an appropriate host to ensure survival. Some ticks feed on only one host throughout the three life stages and are hence called one-host ticks. The blue tick falls into this category.

In Fig 2. the cycle starts with up to 2500 eggs being laid by a single female on the ground (1). After laying, the female dies. The eggs hatch (2) and the larvae (which only have six legs) climb up into vegetation and begin “questing” for a suitable host. Blue tick larvae need to find the correct host right from the start otherwise their chances of survival are small. This is because the tick needs to spend its entire life on the same host. As an animal passes nearby, signals such as carbon dioxide, heat and movement serve as stimuli for the larvae that then respond by either attaching to the host, or letting it be. Only if the animal is larger than the size of a wildebeest, will the larvae usually clamber onto the host and begin their life of parasitism (3). The larvae (and nymphs) are usually found around the dewlap, neck and external ear areas. After it has its first blood meal, the larva detaches and moults into a nymph (4). It reattaches and feeds again, detaches and moults into an adult (5). It then reattaches (usually on the flanks and undersides) and takes its final massive blood meal if it is a female or clambers around looking for females if it is a male. The impregnated female then drops off the host to lay her eggs (6) and the male continues to live on the host until it dies of “old age”.

Fire is a major factor in controlling tick burdens in the bush, particularly since larval loads (on grass stems) are predominant in autumn and winter when fires are more common.

[Contents](#)

## Elusive Chinese cat photographed for first time in the wild

Triggered by body heat, a remote camera recently captured an image of the elusive Chinese mountain cat at about 3,750 meters on the edge of the Tibetan Plateau in China's Sichuan Province. A total of eight images of the cat species represent the first time the mountain cat has been photographed in the wild, said Jim Sanderson, a cat specialist with the Wildlife Conservation Network who led the team that snapped the rare shots. A paper about the cat will appear in an upcoming issue of the journal *Science*.

<http://news.nationalgeographic.com/news/2007/08/photogalleries/cat-pictures/index.html>

[Contents](#)

---

## Rare Japanese wildcat edging closer to extinction

The Iriomote wildcat was first discovered in 1967 on Iriomote Jima, a tiny, tropical, mountainous island on the southern end of the Ryukyu archipelago, which stretches from Japan to Taiwan. It is still the only known location for the species and estimates are that only around a hundred of the animals remain. The main cause of the decline is a highway that runs through the centre of their preferred habitat. 41 road kills have been recorded since 1978.

<http://news.nationalgeographic.com/news/2007/08/070829-rarest-cat.html>

[Contents](#)

---

## Interesting Stuff

- ***New Zone Inside the Earth Proposed***

A first-time experimental recreation of the crushing, searing conditions within the Earth's lower mantle has led geophysicists to a surprising proposal that there is a new zone of rock within the planet.

[http://www.livescience.com/history/070920\\_new\\_earth\\_zone.html](http://www.livescience.com/history/070920_new_earth_zone.html)

- ***'Jurassic Park' Villain Had Feathers***

Tiny bumps on the fossilized arm bone of a *Velociraptor* specimen show that the carnivorous dinosaur—made infamous in the movie "Jurassic Park"—had feathers.

[http://www.livescience.com/animals/070920\\_velociraptor\\_feathers.html](http://www.livescience.com/animals/070920_velociraptor_feathers.html)

[Contents](#)

---

## Taurine in the diet makes for bolder birds

According to a study done in Scotland, and published in the *Proceedings of the Royal Society B*, birds can manipulate the personality and learning ability of their young by feeding them on spiders. Taurine is an amino acid that is also found in breast milk and energy drinks. The beneficial qualities of taurine include aiding the development of premature babies and reducing blood pressure in human adults, but it has not previously been known how taurine influences the development of birds.

By comparing the behaviour of wild blue tits that were fed a taurine supplement, mimicking a diet rich in spiders, with blue tits that were not, researchers were able to observe the long term impacts of this vital nutrient.

Lead researcher Dr Kate Arnold said: "We found that taurine has a significant impact on the personality and memory of the birds. Those who were fed taurine as chicks were on average much bolder and better at learning in adulthood, than their counterparts who were not fed the extra taurine. This is the first time that we have been able to fully explain why birds feed their young spiders at a particular stage in their development and how parents can permanently alter the behaviour of their offspring via the food that they select."

---

---

<http://www.sciencedaily.com/releases/2007/08/070824220328.htm>

[Contents](#)

---

## Extinct dolphin surfaces again

A confirmed sighting of a baiji dolphin just months after it was declared "extinct" has prompted scientists to launch an against-all-odds plan to save the last of the rare Chinese river dwellers.

A team of marine-life scholars led by Wang Ding, a scientist at China's Institute of Hydrobiology, examined digital video footage recently taken along the eastern section of the Yangtze River. The video provides evidence of the survival of the baiji, or whitefin dolphin, the team confirmed.

<http://news.nationalgeographic.com/news/2007/08/070831-baiji-dolphin.html>

[Contents](#)

---

***We could have saved the Earth but we were too damned cheap.***

***Kurt Vonnegut, Jr.***

[Contents](#)

---

## Parks 'failing Africa's wildlife'

A study published in the African Journal of Ecology has claimed that African wildlife parks faced an uncertain future as a greater number of people increased the demand for resources. "For years, wildlife managers and biologists in Africa have known that large mammals were disappearing outside reserves," ecologists Tim Caro and Paul Scholte wrote. "But now a raft of studies is showing that we have moved beyond this to the next step - we are losing species from many of Africa's national parks. What the new data show is even relatively well-organised protected areas cannot be relied on as long-lasting conservation tools," they added.

The researchers, from the University of California, Davis, US, and Leiden University, Netherlands, examined a number of studies tracking the decline of antelopes. "Bushmeat hunting is often the most common factor pressing upon antelope populations. In the old days, this was for local consumption, now it includes tables in far-off cities that, incredibly, extend to London and Paris. The old idea of setting aside large tracts of land in remote areas far from human populations is still a viable option in some parts of the continent, but it is a conservation approach increasingly outmoded by land-use change, demographics and policy reform," they wrote.

<http://news.bbc.co.uk/2/hi/science/nature/6972416.stm>

[Contents](#)

---

## What is it – Answer

The tracks shown are in my opinion those of a water mongoose (*Atilax paludinosus*). Although this species has not been recorded in the area for more than twenty years, there is no reason why it should not be found there, especially given the high rainfall over the last six years and the abundance of surface water (throughout the winter) where there was none before. The tracks are consistent for size, and characteristic is the fact that the fifth digit shows behind the intermediate pad. The toes are widely splayed and are joined in the track to the intermediate pad. The claws are stout and long.

[Contents](#)

**Crossword – last month’s solution**

	<sup>1</sup> T	Y	<sup>2</sup> N	D	A	L	L	E	F	<sup>3</sup> F	E	C	T		
			I							O					
			C			<sup>4</sup> L	A	C	E	R	T	I	D	S	
			T							C					
			I			<sup>5</sup> C	<sup>6</sup> A	L	C	I	U	<sup>7</sup> M			
			T				U			P		O			
			A				T			A		N			
	<sup>8</sup> G		T		<sup>9</sup> P		O			T		I			
	E		I		I		T			E		T			
	C		N		N		O						O		
	<sup>10</sup> K	O	G	G	E	L	M	A	N	D	E	R			
	O				A		Y						S		
	S				L										
				<sup>11</sup> P	R	E	H	E	N	S	I	L	E		
				Y											
	<sup>12</sup> C	H	A	M	A	E	L	E	O	N					

Created with EclipseCrossword — www.eclipsecrossword.com

[Contents](#)