

# RESEARCH HIGHLIGHTS

Selections from the scientific literature

## EVOLUTIONARY BIOLOGY

### Chimp brains don't shrink

The human brain shrinks with age in what seems to be an evolutionarily new phenomenon, report Chet Sherwood of the George Washington University in Washington DC and his colleagues. They found that no parallel reduction in brain size seems to occur in our closest relative, the chimpanzee.

The researchers used magnetic resonance imaging to measure the volumes of whole brains, as well as regions of the frontal lobe and hippocampus, in 87 humans aged 22–88 and 99 chimpanzees aged 10–51. These volumes all fell with age in humans, but maintained a stable size in chimps. The team speculates that the shrinkage occurs because, compared with chimps, humans have evolved an extended lifespan, which amplifies normal cellular ageing processes.

*Proc. Natl Acad. Sci. USA*  
<http://dx.doi.org/10.1073/pnas.1016709108> (2011)

## PALAEONTOLOGY

### A trilobite's footprint

A 500-million-year-old trilobite fossil shows the marine arthropod literally caught in its tracks.

Palaeontologists scouring a Middle Cambrian-era outcrop west of Prague in the Czech Republic have discovered a rock bearing a 3-centimetre-long path that leads to the fossil of a small trilobite, *Agraulos*



*ceticephalus* (pictured). Oldřich Fatka of Charles University in Prague and his colleague Michal Szabad say the tracks may represent debris left over from a systematic excavation of the sea floor by the creature, and show this trilobite's final meal. If so, the fossil indicates that these animals were low on the food chain, sifting through small particles at the bottom of the sea.  
*Paläontol. Z.* <http://dx.doi.org/10.1007/s12542-011-0102-4> (2011)



## PLANT SCIENCE

### A leaf that's loud and proud

Many plants lure pollinators to their flowers with diverse colours and patterns, but *Marcgravia evenia* (pictured) has evolved to attract pollinators that rely on sound rather than sight. The Cuban rainforest vine grows a deep cup-shaped leaf above its flowers that creates a distinct echo for nectar-feeding bats.

Ralph Simon at the University of Ulm in Germany and his colleagues analysed the leaf's acoustic properties and found that its unique shape produces a strong, constant echo across a

range of sound-source angles. They then trained bats to seek a feeder hidden in artificial foliage. The animals found feeders topped with the cup shape in an average of 12 seconds — around half the time it took them to locate unadorned feeders or those under other leaf shapes.

The team concludes that dish-shaped leaves help this rare plant to attract a key pollinator, as well as reducing bats' energy expenditure.

*Science* 333, 631–633 (2011)

See [go.nature.com/cdqcja](http://go.nature.com/cdqcja) for more on this story.

## MEDICINE

### Rapid HIV test for remote areas

A microfluidic device could assist with the challenge of detecting infectious agents such as HIV in remote areas of the world.

Samuel Sia at Columbia University in New York and his colleagues developed a low-cost assay that can identify HIV and syphilis using just 1 microlitre of blood. They tested their 'mChip' assay in Rwanda on more than 200 samples and found that the test was faster than its lab-based counterpart, but offered

equivalent sensitivity and specificity.

The chip could enable rapid diagnosis of life-threatening infectious diseases in isolated locations, and provide important pre-screening of blood donations, the team says.

*Nature Med.* <http://dx.doi.org/10.1038/nm.2408> (2011)

## GENOMICS

### Breast-cancer weaknesses found

The blockade of highly active gene variants associated with breast cancer, such as *HER2*, is a standard approach to combating the disease. But