

RESEARCH HIGHLIGHTS

Selections from the scientific literature

STATISTICS

Ten thousand Kims of Korea

Kim is the most common surname in Korea, and has probably held pole position for more than a millennium, according to a statistical study.

Petter Minnhagen at Umeå University in Sweden and his colleagues studied ten Korean family trees that traced lineages back through 500 years.

Using a statistical analysis that divides the tree data into family groups and predicts how they mix, the team was able to extrapolate the frequency of the name Kim back to AD 500. The model predicts that at that time 10,000 inhabitants — about one-fifth of the total population — shared the surname.

The results suggest that Korean culture has been stable for hundreds of years, the authors say.

N. J. Phys. 13, 073036 (2011)

ZOOLOGY

Poisonous surprise for predators

By chewing on the bark of a poisonous tree, the African crested rat acquires a toxin that it delivers if bitten by predators — the first placental mammal found to combat predation in this way.

When threatened, the rat (*Lophiomys imhausi*) parts its grey fur to expose a pattern of



specialized black and white hairs on its flanks (pictured), daring its attacker to bite the target. The creature picks up the toxin with its saliva by gnawing on the *Acokanthera schimperi* tree, then drools on the hairs.

Fritz Vollrath at the University of Oxford, UK, and his colleagues examined the structure of these hairs under two types of electron microscope. They found the hairs to be porous cylinders

enclosing many long fibrils — a structure well adapted to absorbing the toxin and to delivering it upon contact with a predator's mouth.

Proc. R. Soc. B <http://dx.doi.org/10.1098/rspb.2011.1169> (2011)

METABOLISM

Hungry cells eat from within

When food is scarce, some brain cells begin to devour themselves, activating an appetite-stimulating

molecule in the process.

A brain region called the hypothalamus contains neurons that regulate feeding in response to nutritional signals. Rajat Singh and his colleagues at the Albert Einstein College of Medicine in the Bronx, New York, found that these neurons cannibalize their own organelles, proteins and lipid stores — a process known as autophagy — when starved of nutrients. This liberates fatty acids that cause the cells to express higher levels of an appetite-stimulating



CONSERVATION

Louisiana marsh restoration has failed

For two decades, fresh water from the Mississippi River has been diverted into Louisiana's shrinking coastal wetlands (pictured) in an attempt to restore them, but three such projects have failed to increase vegetation or marsh area. Moreover, the diversions have raised the marshes' risk of suffering hurricane damage.

Michael Kearney at the University of Maryland in College Park and his team analysed satellite images collected between 1984 and 2009 for three of the longest-running diversion projects. They found that most new plant growth

consisted of floating plants and algae rather than deep-rooted marsh plants that hold soil in place. For one of the diversions, Hurricane Katrina destroyed the most vegetation in zones that received the most direct input of fresh water.

The authors say that an influx of nutrients in the river water, probably from agricultural run-off and industry, has been damaging marsh plants' roots.

Geophys. Res. Lett. <http://dx.doi.org/10.1029/2011gl047847> (2011)

For a longer story on this research, see go.nature.com/qticwp

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