



Livestock, such as cattle, cause strife among the Nyangatom people of East Africa

## ANTHROPOLOGY

### The evolutionary benefits of warfare

**M**any human societies engage in warfare, but given the mortal risks involved, many evolutionary anthropologists have wondered why. Is there an evolutionary benefit to warfare? Glowacki and Wrangham tackled this question by studying the Nyangatom, a nomadic society in East Africa. Nyangatom men carry out livestock raids to pay for the right to marry. Men who were active cattle raiders had more wives and children than men who were not. But they had to wait for this benefit. Young raiders give stolen livestock as gifts to paternal relatives. They only benefitted later in life by inheriting the larger herds they helped to build. — GR

*Proc. Natl. Acad. Sci. U.S.A.* 10.1073/pnas.1412287112 (2014).

## MINERAL PHYSICS

### A lower-mantle water cycle component

Water has a dramatic impact on mantle dynamics and chemistry. Despite speculation about water in Earth's lower mantle, a mechanism for supplying water to this remote region has been elusive. Pamato *et al.* suggest that a hydrous mineral called "phase D" may fill that role. Aluminum-rich hydrous phase D was found to be stable at the right temperature-pressure conditions and should be present in rocks with compositions that make up subducted ocean crust. Subducted slabs could therefore introduce water-rich patches into an otherwise dry lower mantle, providing an alternative explanation for some seismic and geochemical anomalies. — BG  
*Nat. Geosci.* 10.1038/ngeo2306 (2015).

## ENVIRONMENTAL SCIENCE

### Droughts and dead zones on the rise

Nutrient-rich agricultural runoff or wastewater discharge can lead to the formation of harmful

algal blooms or oxygen-depleted (hypoxic) "dead zones" in surface waters. But now, Zhou *et al.* show that low tributary river discharge was the largest contributor to a record-breaking hypoxic event in Lake Erie in 2012. Drought conditions across much of North America that year decreased water flow into the lake, exacerbating the effects of persistent nutrient runoff. Because drought and other extreme climate events are expected to increase with climate change, management strategies need to consider all factors that may degrade future water quality. — NW

*Environ. Sci. Technol.* 10.1021/es503981n (2014).



Lake Erie as seen from space

## PLANT GENOMICS

### Probing plant evolution by GC content

Scientists use GC content (that is, the percentage of guanine or cytosine residues in a genome) as a proxy to measure many elements relating to gene evolution. Within the major group of flowering plants called monocots, which includes many agriculturally important species, the GC content of the genomes of grasses decreases from the 5' to 3' end of the gene. In order to better understand how the distribution of GC content evolved in monocots, Clément *et al.* examined orthologous genes across 10 monocot species.

They found that the specific pattern of GC distribution seen in grasses is in fact not grass-specific—it is ancestral to the monocots. — LMZ

*Genome Biol. Evol.* 10.1093/gbe/evu278 (2014).

## HIV ERADICATION

### A cure from which there is no escape

One way to cure HIV-1 would be to pharmacologically drive virus production in latently infected cells and then to get CD8<sup>+</sup> T cells to kill these virus-spewing cells. But HIV-1 mutates to escape CD8<sup>+</sup> T cell responses, so is this strategy even possible? To find out, Deng *et al.* tested whether people chronically infected with HIV-1 harbor CD8<sup>+</sup> T cells that can recognize unmutated portions of latent HIV-1. They found that indeed, they do, and that stimulating these cells led them to kill cells infected with HIV-1 derived from latently infected cells, both in culture and in mice engineered to have a human immune system. — KLM

*Nature* 10.1038/nature14053 (2015).