

RESEARCH HIGHLIGHTS

Selections from the scientific literature

PRIMATOLOGY

Chimps are not averse to alcohol

Chimpanzees at a site in West Africa drink alcohol-containing sap from raffia trees — the first systematic evidence that non-human apes ingest naturally fermented food in the wild.

In Guinea, local people collect this sap by hanging containers under holes tapped near the crowns of raffia palms (*Raphia hookeri*). Kimberley Hockings at the Centre for Research in Anthropology in Lisbon and her colleagues found that the chimps dip crumpled leaves into the containers to sponge out the sweet sap, which contains about 3% ethanol.

The results suggest that the last common ancestor of African apes and humans could tolerate the consumption of ethanol.

R. Soc. Open Sci. 2, 150150 (2015)

ZOOLOGY

Cuckoo finch is a master of mimicry

Some birds use other species' nests to lay eggs that resemble those of the other species, escaping the burdens of parenthood. Now researchers have found a type of finch in Africa that also mimics how another bird looks as an adult.

The female cuckoo finch (*Anomalospiza imberbis*; pictured left) lays its eggs in



the nests of tawny-flanked prinias (*Prinia subflava*) but also strongly resembles the female of a common African species called the southern red bishop (*Euplectes orix*; pictured right). The resemblance, studied by William Feeney at the University of Cambridge, UK, and his colleagues, may have evolved initially to help cuckoo finches to sneak closer to the prinias' nests. But prinias have evolved what seems to be a countermeasure: they attack the finch and the southern red bishop with equal aggression.
Proc. R. Soc. B 282, 20150795 (2015)



HYDROLOGY

Floods used as defensive weapons

One-third of all major floods recorded in the Netherlands over the past 500 years were caused deliberately by humans to defend the territory during wartime.

Adriaan de Kraker of Free University Amsterdam trawled historical maps, land ownership documents and written accounts of flooding events in the low-lying southwest Netherlands, where three rivers flow into the North Sea. The largest floods occurred either during storm surges when sea water breached the

flood defences, or during wartime when people destroyed dikes to deter enemies such as the Spanish in the sixteenth century. The tactic was also used by both sides during the Second World War (pictured are residents of Walcheren being rescued from floods in 1945, after a sea wall was breached). Strategic flooding was not always successful in deterring the enemy, de Kraker says, and caused as much damage to land and property as natural floods did.

Hydrol. Earth Syst. Sci. 19, 2673–2684 (2015)

OPTICS

Graphene shines bright in a vacuum

Physicists have designed a 2D device that can emit bright, visible light, paving the way for ultra-thin light-emitting devices.

One-atom-thick layers of carbon called graphene can withstand the high temperatures at which they emit light. But when graphene is stuck to a surface and electricity is applied, only a small amount of light energy is released because too much energy dissipates as heat.

Young Duck Kim at Seoul National University and his colleagues got around the problem by putting a current through a piece of graphene suspended between two electrodes in a vacuum. By isolating the graphene, they were able to heat it to more than 2,500 °C and increase the level of radiation by 1,000 times compared to graphene on a substrate.

With further improvements, the device could serve as a nanoscale light emitter in ultra-thin displays, say the authors.
Nature Nanotech. <http://dx.doi.org/10.1038/nnano.2015.118> (2015)