

a concentration found in nectar. The caffeine-fuelled bees revisited the feeders more frequently than did the control bees, and they at least tripled the number of waggle dances they performed to recruit bees from the hive.

Because caffeine disguises a reduced sugar concentration, the nectar the bees take back to the hive might be sub-standard. That could mean that the colony would produce less honey, the authors predict.

*Curr. Biol.* <http://dx.doi.org/10.1016/j.cub.2015.08.052> (2015)

## ANIMAL BEHAVIOUR

## Electric eels use shocks to sense

Electric eels send out strong zaps to track moving prey by their electrical conductivity, enabling the eels to strike with remarkable precision.

Electric eels (*Electrophorus electricus*; **pictured**) are known to use electricity to stun their prey, and have electrical sensors (pictured in pink). To see whether the high-voltage zaps have a sensory role, Kenneth Catania at Vanderbilt University in Nashville, Tennessee, presented the eels with a twitching fish in an insulated plastic bag and a conductive rod.

The eels reacted to the mechanical signals from the moving prey, producing a strong shock and striking in the direction of the fish. But they repositioned mid-strike, capturing and attempting to feed on the rod instead, even when it moved around quickly.

This sensory system is

similar to how some bats use echolocation, says Catania. *Nature Commun.* 6, 8661 (2015)

## AGROECOLOGY

## Wild flowers are a pesticide source

Commonly used insecticides have been found on wild flowers as well as on crops.

Neonicotinoid pesticides applied to the seeds of some crops end up in the nectar and pollen of adult plants, so the chemicals are a suspected cause of the global decline in bee populations. Because most crops flower only briefly, it was unclear how bees could be exposed to enough pesticide to feel toxic effects. Now Cristina Botías and her colleagues at the University of Sussex in Brighton, UK, show that these chemicals are present in the pollen of wild flowers growing near fields where neonicotinoids were used.

The team measured neonicotinoid levels in pollen sampled from fields of oilseed rape (*Brassica napus*), nearby wild flowers and local beehives, and estimated that 97% of these compounds that were brought back to beehives originate from wild flowers.

The wild flowers had higher levels of insecticide in their pollen than crop plants did, and they bloom for much longer.

*Environ. Sci. Technol.* <http://doi.org/8bk> (2015)

## MEDICAL TECHNOLOGY

## Cheap MRI uses small magnets

A technique for magnetic resonance imaging (MRI) could provide fast brain scans at a fraction of the cost of conventional machines.

Most MRI scanners require large magnets to generate a strong enough magnetic field to penetrate soft tissue. A team led by Matthew Rosen at Harvard Medical School in Boston, Massachusetts, has demonstrated a way to capture an image

## SOCIAL SELECTION

Popular topics on social media

## A call for preprints at meetings

In what has been called “gaygenegate” in some corners of the Internet, a conference presentation on 8 October about the genetics of homosexuality in men has come under intense scrutiny. The talk also prompted questions about whether scientists working on controversial topics should post

unreviewed preprints of their findings before presenting them at a meeting. Statistician Andrew Gelman of Columbia University in New York, who criticized the homosexuality study’s statistical analysis, wrote in a blog post that the lack

of a peer-reviewed paper or preprint made it difficult for people to evaluate the work. Other researchers countered that conferences are meant to be forums for early, unpublished work.

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using magnetic fields that are 450 times weaker than those used by current machines, and at one-twentieth of the cost.

The team engineered a radio-frequency coil that could pick up the faint radio signals generated as a result of the weak magnet and used data-collection techniques that speed up image reconstructions.

Although the resulting images have a lower resolution than do those from large MRI scanners, they can still reveal major abnormalities such as signs of traumatic brain injury or stroke, Rosen says.

*Sci. Rep.* 5, 15177 (2015)

## EVOLUTION

## Village-dog DNA hints at origins

DNA from free-roaming ‘village dogs’ shows greater genetic diversity than that of pure-bred dogs, and could help to settle debates about where dogs were domesticated.

Humans domesticated dogs from wolves more than 15,000 years ago, but researchers disagree about whether that happened in Europe, East Asia, the Middle East or elsewhere. A team led by Adam Boyko at Cornell University in Ithaca, New York, analysed the genomes

of 549 free-breeding village dogs from around the world, as well as 4,676 pure-bred dogs belonging to 161 breeds. Genome-wide patterns of ancestry in the village dogs hint at a central Asian origin for domestic dogs, followed by population expansions in East Asia.

The researchers say, however, that more-extensive studies of DNA from diverse dogs are needed to pinpoint the origins of man’s best friend.

*Proc. Natl Acad. Sci. USA* <http://dx.doi.org/10.1073/pnas.1516215112> (2015)

## CORRECTION

The print version of the Research Highlight ‘Corals cope with acidified waters’ (*Nature* 526, 296–297; 2015) incorrectly stated that ocean water is being acidified when in fact it is becoming less alkaline; the online title was changed to reflect that. It also said coral-made fluid was less acidic than reef waters; in fact, the fluid had a higher pH. And it said that some corals can control the pH of surroundings, whereas they control their internal pH.

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