

TADD TRUSCOTT

under much weaker gravitational fields. This was the first direct test of Einstein's theory of general relativity under such extreme space-time warping and fast-moving conditions.

With planned boosts to the LIGO detectors' sensitivity, future observations could be used to test other theories of gravity and hypothesized alternatives to black holes, say the authors.

Phys. Rev. Lett. 116, 221101 (2016)

MARINE SCIENCE

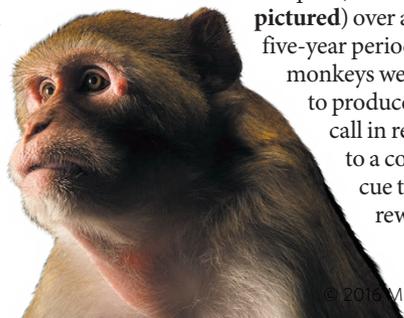
Plastic pollution hurts perch

Tiny fragments of plastic in the ocean could change fish behaviour and decrease their survival.

Research indicates that the world's oceans are polluted with many thousands of tonnes of 'microplastic' debris — particles measuring less than 5 millimetres in diameter. Oona Lönnstedt and Peter Eklöv at Uppsala University in Sweden exposed European perch (*Perca fluviatilis*) to levels of microplastic similar to those found in the environment. Although 96% of fertilized eggs not exposed to plastic hatched, only 81% of those placed in water with high levels did so. Moreover, 46% of fish larvae that had been raised in a tank containing plastic-free water were still alive after 24 hours in a tank with a predatory pike, whereas 100% of those raised with high levels of plastic were eaten within 16 hours.

Larvae reared with high concentrations of plastic did not show anti-predator responses such as freezing or reduced movement when exposed to alarm signals from other animals.

Science 352, 1213–1216 (2016)



GENOMICS

Ancient dog DNA shows dual origins

The first complete genome sequence of an ancient dog suggests that dogs were independently domesticated twice, in two different regions.

Researchers have debated whether domestic dogs originated in Asia or Europe about 15,000 to 12,500 years ago. Laurent Frantz of the University of Oxford, UK, and his team sequenced the mitochondrial DNA of 59 ancient dogs and the complete genome of a 4,800-year-old dog from Ireland. They also analysed DNA from hundreds of modern dogs and wolves, and found that populations of Western European and East Asian canines diverged several millennia after the first appearance of the animals.

Owing to a lack of archaeological evidence of ancient dogs between these regions, the authors propose that the animals were domesticated separately in Western Europe and East Asia from distinct wolf populations. *Science* 352, 1228–1231 (2016) For more on this research, see go.nature.com/1pzqqwr

EVOLUTION

Age robs monkeys of vocal control

Monkeys lose the ability to consciously control their calls as they age, which may have limited the evolution of language in non-human primates.

Steffen Hage and his colleagues at the University of Tübingen in Germany studied the vocalizations of two male captive rhesus macaques (*Macaca mulatta*; pictured) over a roughly five-year period. The monkeys were trained to produce a specific call in response to a coloured cue to receive a reward. At five



years old, the macaques scored highly, but by eight years of age neither monkey could perform the task. Adult macaques still produced spontaneous, instinctive calls in their enclosure, indicating that they maintained vocal ability.

Language may have evolved in humans by first extending the vocal flexibility of juveniles into adulthood.

J. Exp. Biol. 219, 1744–1749 (2016)

BOTANY

How desert moss drinks from air

Researchers have revealed minuscule features on the leaves of a common desert plant that allow it to collect water from moist air.

Syntrichia caninervis (pictured) is a small moss that lacks roots. To understand how it uses its leaves to capture moisture, Tadd Truscott of Utah State University in Logan and his co-workers altered the relative humidity in their lab and used high-speed cameras and electron microscopy to study the plant's response. They found that a hair-like structure called an awn at the tip of each leaf has grooves and barbs that collect and transport water. Nanogrooves about 200 nanometres wide allow water from humid air to nucleate on the awn's surface, and larger microgrooves collect bigger water droplets from fog.

Small barbs along the cone-shaped awn provide places for

droplets to collect before being transported down the awn to the leaf.

Nature Plants <http://dx.doi.org/10.1038/nplants.2016.76> (2016)

INFECTION

Bacterium could curb malaria

West African mosquitoes infected with the bacterium *Wolbachia* are less likely than uninfected ones to carry the malaria parasite *Plasmodium*.

Wolbachia infection has long been proposed as a way to reduce the spread of mosquito-borne diseases such as malaria. To study natural *Wolbachia* infection, Flaminia Catteruccia at the Harvard T. H. Chan School of Public Health in Boston, Massachusetts, and her colleagues collected and studied 221 *Anopheles coluzzii* mosquitos from a village in Burkina Faso. They found that about half of the insects carried a *Wolbachia* strain. Only one infected mosquito (less than 1%) was also infected with *Plasmodium*, whereas roughly 10% of the 105 mosquitos free of *Wolbachia* tested positive for the malaria parasite.

Mathematical modelling suggested that even at this rate of *Wolbachia* infection, the bacterium could decrease the prevalence of malaria in humans.

Nature Commun. 7, 11772 (2016)

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