

allows babies to put things in their mouth accurately, even at a time when they have generally poor motor control. *Proc. Natl Acad. Sci. USA* <http://dx.doi.org/10.1073/pnas.1321909111> (2014)

ANIMAL BEHAVIOUR

Whale dives into record books

A Cuvier's beaked whale has set a new record for the deepest known dive by a mammal, reaching 2,992 metres.

Gregory Schorr at the Cascadia Research Collective in Olympia, Washington, and his colleagues attached satellite tags to eight Cuvier's beaked whales (*Ziphius cavirostris*) and collected more than 3,700 hours of data on the whales' movements off the California coast. One individual was in a dive for 137.5 minutes, nearly 18 minutes longer than the previous deep-diving record-holder, the southern elephant seal (*Mirounga leonina*). Another whale beat the seal's record depth by more than 600 metres.

This behaviour could be atypical, and might be a result of heavy naval sonar use in part of the study region, the authors say.

PLoS ONE 9, e92633 (2014)

CANCER GENETICS

Cancer survives by silencing a gene

Breast cancer can become resistant to treatment by co-opting a gene-silencing mechanism, reports a team led by Steffi Oesterreich at the University of Pittsburgh in Pennsylvania.

The hormone oestrogen, which drives many breast cancers, dampens the activity of the tumour-fighting gene *HOXC10*, and drugs called aromatase inhibitors free the gene from this repression. But in a genome-wide screen of human breast-cancer cells, the team found that these drugs can also lead to a type of

epigenetic modification called methylation — the addition of methyl groups to DNA without changing its sequence — across the genome. This ultimately silences *HOXC10*, rendering breast-cancer cells resistant to aromatase inhibitors.

Blocking the methylation activity associated with aromatase-inhibitor treatment might delay or prevent resistance to therapy, the authors say.

Sci. Transl. Med. 6, 229ra41 (2014)

NEUROSCIENCE

A broken channel in Huntington's

In Huntington's disease, neurons become more excitable and die. Researchers have now found a faulty ion channel in astrocytes, another type of brain cell, that could be contributing to this.

Baljit Khakh and Michael Sofroniew at the University of California, Los Angeles, and their colleagues studied two mouse models of Huntington's disease, and show that channels that allow potassium ions to cross the cell membrane were dysfunctional in astrocytes containing the Huntington's disease proteins. This caused potassium levels outside the cells to rise, making the membranes of nearby neurons more excitable.

The authors reversed these defects by replacing the faulty channels with functional ones. In one of the mouse models, channel replacement allowed the animals to walk more normally and live longer than mice with defective channels. *Nature Neurosci.* <http://dx.doi.org/10.1038/nn.3691> (2014)

AGRICULTURE

Cattle tamed by moving and mixing

Cattle were domesticated in the Middle East before being brought to Africa by migrating humans some 10,000 years ago.

Researchers previously thought that African cattle were domesticated there. To

COMMUNITY CHOICE

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ECOLOGY

City birds and plants in decline

HIGHLY READ
on *Proc. R. Soc. B*
online in February

Most bird and plant species in cities are native to those areas, but their numbers are rapidly decreasing around the world.

Myla Aronson at Rutgers University in New Brunswick, New Jersey, and her colleagues compiled and analysed data for birds in 54 cities and for plants in 110 cities, mainly in North America and Europe — the largest collection of urban biodiversity data so far.

The authors found that cities support just 8% of bird species and 25% of plant species that are found in non-urban areas. Human-related factors, such as land use and city age, seem to have a greater effect on bird and plant populations than do natural factors such as climate and geography.

Urban planning that emphasizes native habitats could better support biodiversity, the authors say.

Proc. R. Soc. B 281, 20133330 (2014)

better understand this history, Jared Decker and Jeremy Taylor at the University of Missouri in Columbia and their colleagues analysed the DNA of 134 breeds of domesticated cattle to establish the relationships between them. The authors found that cattle imported from the Middle East bred with wild species to produce the African animals seen today.

Mixing of native cattle with imported breeds occurred extensively worldwide. For example, American feral breeds are descended from cattle that were brought in from Spain and India.

PLoS Genet. 10, e1004254 (2014)

ECOLOGY

Crabs ready for climate change

Cold-blooded animals are especially at risk as the climate warms, but the remarkable temperature tolerance of the European green crab (*Carcinus maenas*; pictured) bodes well for the animal.

Carolyn Tepolt and George Somero at Stanford University's Hopkins Marine Station in Pacific Grove, California, studied the temperature

tolerance of crabs by measuring the cardiac function of animals at seven sites in Europe and eastern North America with widely varying temperatures. They found that the crabs could withstand warmer waters before their cardiac function was compromised, compared to native crustaceans in many places. Crabs also thrived in colder habitats, and acclimatized quickly to temperature shifts.

Temperature tolerance has probably allowed this crab to spread rapidly along the coasts of North America, say the authors.

J. Exp. Biol. 217, 1129–1138 (2014)



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