

may need to be tailored to the age of the infected person, the authors say.

PLoS Pathog. 12, e1005368 (2016)

ORGANIC CHEMISTRY

Spring-loaded bond adds variety

Chemists have designed a simple way to attach small, strained-ring-shaped chemical groups to potential drug compounds — previously a difficult process.

The structures can change a drug's properties, for example to improve how it is absorbed in the body. Phil Baran at the Scripps Research Institute in La Jolla, California, and his colleagues attached a few such groups — including propellane, which looks like a propeller — to drug molecules by first breaking a high-energy carbon-carbon bond in the ring structure. The team used the energy released from this 'spring-loaded' bond to add another nitrogen-containing molecular group, creating a molecule called an amine. Using their method in a high-throughput synthesis, the team added strained molecules to a range of pharmaceutical compounds.

The team says that scientists in the drug industry have started using the method. *Science* 351, 241–246 (2016)

NEUROSCIENCE

Chemical revives neuron function

Treating regenerated nerve fibres with a chemical can restore vision in mice.

After injury, adult neurons regrow their long, signal-conducting axons to form connections called synapses with other neurons. But the regrown cells cannot conduct electrical signals properly. Michela Fagiolini and Zhigang He of Children's Hospital Boston in Massachusetts and their team studied mice with injured optic nerves. Deleting two genes that

regulate neuronal growth, or boosting the production of two protein-growth factors, regenerated retinal axons that formed synapses in the brain, but did not improve vision. Treating the neurons with a compound that improves their conductivity helped them to work properly. This restored vision in six of the eight experimental animals.

The results could help to improve nerve-cell function after an injury, the authors say. *Cell* 164, 219–232 (2016)

PALAEOLOGY

Extinct giraffe was a huge beast

An extinct relative of the giraffe that lived more than 1 million years ago weighed up to 1,800 kilograms, making it one of the largest cloven-hoofed mammals ever to have existed.

Remains of the relatively short-necked giraffid *Sivatherium giganteum* were first uncovered in the 1800s, but until now, nobody had accurately estimated its body mass. Christopher Basu at the Royal Veterinary College in Hatfield, UK, and his colleagues created a 3D model of this giraffid's skeleton (pictured), which indicated that it weighed between 850 and 1,800 kilograms, with males carrying heavy horns.

The team concludes that the creature was not as large as modern African elephants, as was previously suggested, but it may still have been the largest-ever four-stomached mammal, or ruminant.

Biol. Lett. 12, 20150940 (2016)



SOCIAL SELECTION

Popular topics on social media

Insider view of faculty search

Scientists hunting for academic jobs got a rare glimpse into the mysterious tenure-track hiring process. A blog post written by computational genomicist Sean Eddy at Harvard University in Cambridge, Massachusetts, outlined the steps that he and his colleagues have taken since November to evaluate nearly 200 applicants for a Harvard faculty position. Interviews for six candidates begin this week. A tweet by Eddy on 9 January attracted fresh attention to the blog post, with commenters applauding his efforts to lift the veil on the selection process. Holly Bik, a genomics and bioinformatics researcher at New York University who is applying for jobs, tweeted: "Your blog post is a step in the right direction though; demystifying the black box process is always good."

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ASTRONOMY

Brightest-ever supernova

A supernova has been spotted that is twice as luminous as the previous record holder — at its peak it blazed brighter than 570 billion Suns.

Subo Dong at Peking University in Beijing and his colleagues spotted the exploding star, called ASASSN-15lh, in June last year using an automated telescope survey of the sky. The object belongs to a class of 'superluminous' supernovae that are low in hydrogen. Whereas other hydrogen-poor supernovae reside in dim dwarf galaxies, this one seems to originate near the centre of a massive galaxy that is brighter than the Milky Way.

ASASSN-15lh challenges previous theories of explosion mechanisms and how supernovae are powered, the authors say.

Science 351, 257–260 (2016)

CONSERVATION

Protected areas miss key corals

Only a tiny percentage of the world's corals and tropical fish is safeguarded by current



marine protected areas.

David Mouillot at the University of Montpellier in France and his colleagues compared the geographical range of 805 species of reef-forming hard corals (pictured) and 452 tropical reef fish with a database of more than 3,600 marine protected areas. They then analysed the trees of life of these organisms and found that just 1.7% of the tree's 'branches' for the corals and 17.6% for the fishes had 10% or more of their ranges within the marine protected areas.

Improved conservation strategies are needed to better secure the biodiversity of these animals, the authors say. *Nature Commun.* 7, 10359 (2016)

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