RESEARCH HIGHLIGHTS

Selections from the scientific literature

CLIMATE CHANGE

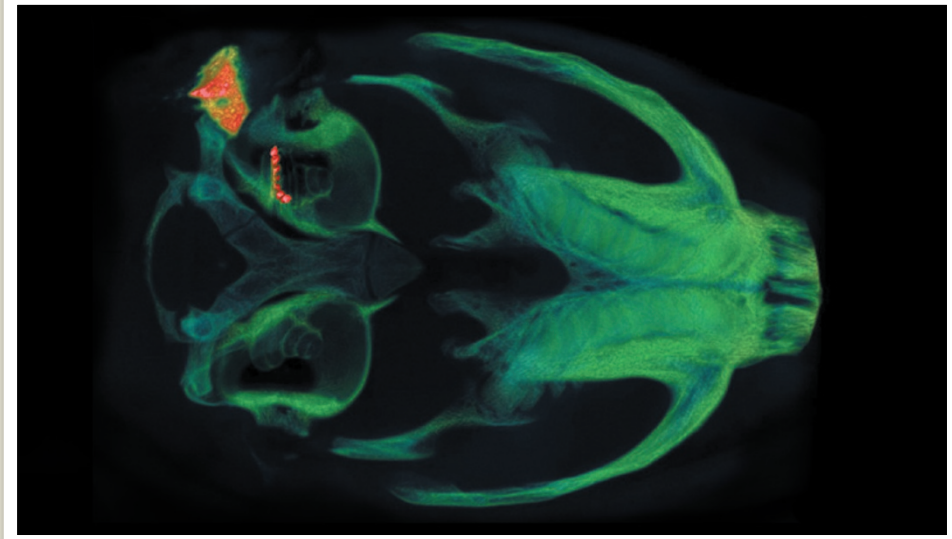
California drought linked to humans

Man-made global warming seems to have contributed to the extreme Californian drought in recent months.

Simon Wang of Utah State University in Logan and his colleagues re-analysed meteorological records and found that the ongoing dry spell is linked to changes in large-scale atmospheric pressure and circulation patterns. These typically occur over North America in the years before El Niño events — the occasional warming of the tropical Pacific Ocean.

Simulations show that atmospheric conditions that tend to cause intense drought in California have become more frequent since 1970 as a result of increased greenhouse-gas concentrations. Projections suggest that future droughts in California will be even more severe, the authors warn.

Geophys. Res. Lett. **http://doi.org/sfs (2014)**



T.-T. HUNG AND A. KWEK/UNSW-BRIL & ANIF; J. PINYON & G. HOUSLEY/UNSW-TNF

GENE THERAPY

Ear implant helps to repair nerves

Researchers have repaired an auditory nerve by introducing a gene into ear cells — after zapping them with electricity from a hearing device.

Electrical impulses from cochlear implants not only stimulate the auditory nerve in people with deafness, but also make cells permeable to DNA.

Gary Housley and his colleagues at the University of New South Wales in Sydney, Australia, used cochlear implants in deaf guinea pigs (pictured; implant in red) to deliver a gene encoding neurotrophin, a protein that stimulates nerve growth, to specific inner-ear cells. They found that the auditory nerve began to regenerate, extended towards the cochlea and showed greater sensitivity than in untreated animals.

A similar method using electrodes implanted in the brain could repair brain cells as a way to treat neurological disorders, the authors say.

Science Transl. Med. 6, **233ra54 (2014)**

For a longer story on this research, see go.nature.com/y3bxzr

PLANT BIOLOGY

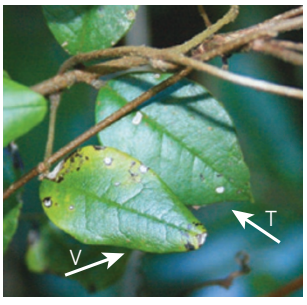
Leafy master of disguise

A climbing vine can mimic the leaves of any of a dozen host trees, possibly helping it to resist predation by herbivores.

Ernesto Gianoli and Fernando Carrasco-Urra of the University of Concepción in Chile looked at 45 samples of the vine *Boquila trifoliolata* (**pictured**, left), which lives in the temperate South American rainforest. The duo found that vines adapt 9 leaf features, including size, shape and colour, to mimic the leaves of any of 12 different host species (pictured, *Rhaphithamnus spinosus*; right).

Other plants are capable of mimicry, but no plant has been described before that can change its appearance to match that of so many different hosts.

Curr. Biol. **http://doi.org/sjg (2014)**



OSCAR GODOY

PALAEONTOLOGY

Flying reptiles were land lovers

Researchers have discovered the oldest fossil of a pterodactyloid, the group that includes the largest-known flying animals. The finding suggests that the ancient reptiles that gave rise to these creatures originated on land, rather than in marine environments.

The pterodactyloids evolved from smaller pterosaurs, the remains of which have been found predominantly in ancient seas. A team led by Brian Andres, at the University of South Florida in Tampa, analysed a roughly 163-million-year-old fossil from northwest China. They conclude that the animal, which had a 1.4-metre wingspan, is the earliest known pterodactyloid, on the basis of features such as an elongated metacarpus wing bone.

By comparing the new species — which the team has provisionally named *Kryptodrakon progenitor* — with its relatives and with modern flying vertebrates,