

RESEARCH HIGHLIGHTS

POPULATION GENETICS

Celtic mutations

Nature Genet. doi:10.1038/ng1742 (2006)

Symptoms of the motor neuron disease amyotrophic lateral sclerosis (ALS) occur in mice whose gene for the neuroprotective protein VEGF is damaged. But mutations in this gene have never been found in human ALS patients.

A surprising link between ALS and VEGF, which also promotes the growth of new blood vessels during hypoxia, has now been made in a multi-population study. It included more than 1,600 ALS patients, and was run by Dublin-based scientists Matthew Greenway and Orla Hardiman of the Royal College of Surgeons in Ireland and their colleagues.

In 15 individuals — nearly all of Irish or Scottish descent — the study identifies mutations in the gene for angiogenin, a protein that seems to be required for normal VEGF activity in blood vessels.

CONSERVATION

Mix it up

Proc. R. Soc. Lond. B doi:10.1098/rspb.2006.3477 (2006)

Isolated small populations are prone to reduced fitness because they are forced to inbreed — a phenomenon that threatens to become more widespread as natural habitats are destroyed. Conservationists, however, have avoided strategies that link adjacent isolated populations because of the risk of spreading disease.

Researchers led by John Hogg of the Montana Conservation Science Institute in Missoula now provide some evidence to inform the debate. Their data, spanning 25 years, document fitness improvements in a flock of bighorn sheep (*Ovis canadensis*;



J. HOGG

Under pressure

Geophys. Res. Lett. **33**, L03312 (2006)

When a lava dome collapsed at Soufrière Hills Volcano in 2003 — the biggest such collapse on record — it triggered a sudden and dramatic increase in pressure in the underlying magma chamber.

During the event, researchers led by Barry Voight of Pennsylvania State University in University Park measured strain around the volcano (pictured), which has been erupting on the Caribbean island of Montserrat since 1995. The magma chamber pressurized within ten minutes of the lava dome's collapse, much faster than would be expected for the normal rate of magma flow.

The scientists suggest that bubbles within the magma may have expanded suddenly, causing the pressure rise.



S. OMEARA & D. OMEARA/SPL

pictured below) consisting of a few dozen animals, and isolated since 1922. Since the introduction of outsiders in 1985, fitness measures such as birth weight and male and female reproductive success have improved — gains that, the authors argue, offset the risks.

CHEMISTRY

Metal tools

J. Am. Chem. Soc. **128**, 2540–2541 (2006)

Organometallic chemists can often 'tweak' the reactivity of a transition-metal catalyst by adding ligands that bind to the metal — an approach that researchers have now used to expand the synthetic chemist's tool box.

Barry Trost and his co-workers at Stanford University, California, report that a palladium catalyst with a phosphorus-containing ligand can catalyse the oxidation, by a nitronate, of an ester group adjacent to a carbon-carbon double bond. If the ligand was a single enantiomer — a molecule that is not superimposable on its mirror-image — the product of the reaction was also a single enantiomer. This was true even when the starting material was a mixture of enantiomers. The products of this reaction could be used to synthesize various natural products, such as prostaglandins.

ANATOMY

Unexpected organ

Science doi:10.1126/science.1123497 (2006)

After years of study, the laboratory mouse can still surprise.

Hans-Reimer Rodewald at the University of Ulm, Germany, and his colleagues say they have discovered a new organ — a thymus the size of a pin-head — in the necks of mice. Previously, the mouse was thought to have just one thymus, situated near the heart.

The thymus helps to supply the immune system with T cells, and this unexpected finding raises questions about studies that have used mice with the main thymus removed to investigate, for example, T-cell production in other organs, such as the gut and skin.

MATERIALS SCIENCE

Pretty cool

Science **311**, 1270–1271 (2006)

A material that can be cooled by applying an electric field might help to prevent microchips from overheating, say Alex Mischenko of Cambridge University, UK, and his colleagues.

The researchers find that applying 25 volts