alternate between pentagons (**pictured**) and stars.

Jean Rajchenbach and his colleagues at the University of Nice Sophia Antipolis in France produced the patterns by shaking a 7-millimetre column of silicon oil up and down by up to 2 mm, between 7 and 11 times per second. The authors calculated that three separate surface waves passing through the oil interact to produce the shapes. The patterns created had triangular, pentagonal and hexagonal symmetries, depending on the frequency and amplitude of the vibration, but not the shape of the container holding the oil.

Phys. Rev. Lett. 110, **094502 (2013)**

NEUROSCIENCE

Human cells boost mouse brains

Mice performed better on learning tasks, such as navigating mazes, after receiving injections of human brain cells, whereas mice that received either no transplants or mouse brain cells showed no such improvement.

Steven Goldman and Maiken Nedergaard at the University of Rochester Medical Center in New York and their colleagues injected the brains of newborn mice with glial precursor cells, which go on to provide metabolic support to neurons and are thought to influence neuronal function.

When injected into the mice, the human precursor cells matured and integrated into mouse neural networks. Human glia strengthened neuronal signalling in mouse brains by secreting the cell-signalling protein TNF-α, which is thought to increase the number of receptors for the neurotransmitter glutamate. Such experiments, the authors suggest, can be used to explore the role of glia in human cognition and brain disease.

Cell Stem Cell 12, **342–353 (2013)**

HUMAN BEHAVIOUR

Victims punish but witnesses envy

Humans may be less inclined to punish bad behaviour than previous studies have suggested.

Michael McCullough of the University of Miami in Florida and his colleagues used computer-controlled games to look for evidence of altruistic punishment, in which an individual receives no clear benefit for inflicting punishment but does so anyway.

Although those who were treated unfairly in one game did punish transgressors in the next, the witnesses of the unfairness did not. In fact, witnesses were more likely to display envy of gains by others than outrage at victims' losses. The authors suggest that experiments to identify altruistic punishment are vulnerable to multiple artefacts, such as errors made by humans in predicting how they would react to hypothetical situations.

Proc. R. Soc. B 280, **20122723 (2013)**

METABOLISM

Ageing gene linked to diabetes

A gene called *SIRT1* is associated with age-related diseases and longevity in some model systems, but it seems that a mutation in this gene may also cause type 1 diabetes.

This form of diabetes is a result of the immune system destroying insulin-secreting cells in the pancreas. Marc Donath at the University Hospital Basel in Switzerland and his colleagues sequenced targeted regions of the genomes of a family in which four members have type 1 diabetes and another has ulcerative colitis, also an autoimmune disorder. The researchers found the *SIRT1* mutation only in family members with autoimmune diseases. Lab-grown cells that expressed the mutant gene boosted their production of the immune system components nitric oxide, chemokines and cytokines — all known to have a role in the development of diabetes.

Cell Metab. 17, **448–455 (2013)**

COMMUNITY CHOICE

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MOLECULAR BIOLOGY

Regenerative proteins revealed

HIGHLY READ on genomebiology.com 20 Feb-13 Mar

Large-scale tissue profiling in the red-spotted newt (*Notophthalmus viridescens*, pictured) has revealed hundreds of new proteins, some of which could contribute to the newt's regenerative ability.

Newts can regrow severed limbs and some damaged organs, but the molecular processes driving this renewal have been hard to pin down — in part because the newt's enormous genome has not yet been sequenced.

Thomas Braun at the Max Planck Institute for Heart and Lung Research in Bad Nauheim, Germany, and his colleagues sequenced RNA transcripts from undamaged newt tissues, as well as tissue at different stages of regeneration, and hunted down the protein counterparts using mass spectrometry. Of the around 15,000 transcripts that the authors verified as protein coding, 826 coded proteins that are specific to newts. Some of those may represent new families of proteins.

Genome Biol. 14, **R16 (2013)**

For a longer story on this research, see go.nature.com/73sfqa

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PALAEONTOLOGY

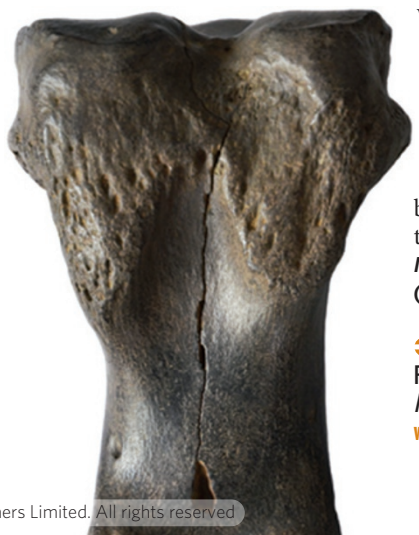
Ancient camels in the Arctic

Whereas modern camels (*Camelus* spp.) live in hot, dry regions, their predecessors may have occupied polar forests.

Natalia Rybczynski at the Canadian Museum of Nature in Ottawa and her colleagues found fossilized fragments of a large leg bone (**pictured**) in the Canadian Arctic. Analysis of preserved protein showed that the bone belonged to an extinct giant camel. The remains dated to about 3.5 million years ago, a time when the region was densely forested and considerably warmer than today.

The fossil fragments, which are the northernmost evidence of camels, suggest that camel traits such as wide flat feet and even the iconic hump might have evolved as specializations for living not in the desert, but in the Arctic forest, say the authors.

Nature Commun. 4, **1550 (2013)**



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