

MATERIALS

Warm carbon coat reduces friction

A coating material made of carbon reduces friction not just by providing a slippery surface, but also by keeping the points of contact warm.

Marcus Björling of Luleå University of Technology in Sweden and his team coated steel balls with 'diamond-like carbon' — a material in which the carbon atoms have a bonding pattern similar to that of diamond. They rolled the balls against a metal disk with an oil lubricant in between, and showed that the carbon coating acts as an insulator, lowering the viscosity of the lubricant and thus reducing the friction between the ball and the disk.

The findings could encourage the development of lubricant coatings made from insulating materials.

Tribol. Lett. <http://doi.org/qtm> (2014)

ZOOLOGY

Starfish eyes see the light

Starfish can use eyes at the tips of their arms to find their way home.

Most sea-star species have compound eyes on their arms, but there has been no direct evidence that the eyes enable vision. In field experiments, Anders Garm at the University of Copenhagen and Dan-Eric Nilsson at Lund University in



RAVELL CALL/DESERET NEWS/AP

GEOLOGY

Landslide triggered earthquakes

Large earthquakes often cause landslides, but in an unusual reversal, a massive landslide in a US copper mine in April 2013 might have resulted in a series of small earthquakes.

Kristine Pankow and her colleagues at the University of Utah in Salt Lake City describe two sequential rock avalanches at the Bingham Canyon mine (pictured) near Salt Lake City. Together, these events comprise probably

the largest non-volcanic landslide to have occurred in North America in modern times. The proximity of the landslide to a seismic monitoring network produced extensive data, which showed that the avalanches had an estimated magnitude of about 2.5. In the days following the landslide, the sensors detected 16 more seismic events.

GSA Today 24, 4–9 (2014)

Sweden displaced blue starfish (*Linckia laevigata*) from the coral reefs they inhabit off the coast of Japan. The starfish were able to navigate their way back to the reef from distances of up to two metres, an ability that was lost when the researchers surgically removed the animals' eyes.

The distribution and shape of the eyes (pictured) and the arrangement of their light-sensing cells suggest that the starfish can recognize the reef from only relatively short distances. This might help the creatures to stay close to home, the researchers say. *Proc. R. Soc. B* 281, 20133011 (2014)

MOLECULAR BIOLOGY

RNA retrieved from intact tissue

A technique can snatch RNA out of a single cell in live, intact tissue, revealing the genes being expressed by that cell.

Other methods of single-cell RNA retrieval tend to disrupt the surrounding tissue before the RNA is captured. James Eberwine of the University of Pennsylvania in Philadelphia and his colleagues created a molecule called a TIVA tag that penetrates cells.

When hit with a beam of light, the tag binds to RNA that is being made from its DNA

template. By adding the tag to human and mouse brain tissue and shining a laser on individual cells, the researchers could activate the tag, retrieve the RNA and sequence it.

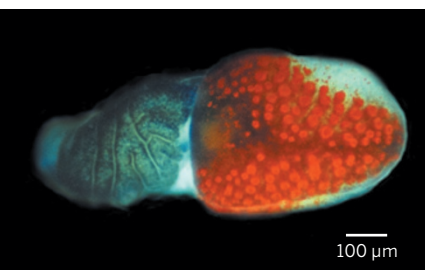
The approach could reveal how a cell's natural micro-environment affects its activity. *Nature Meth.* <http://dx.doi.org/10.1038/nmeth.2804> (2014)

PALAEONTOLOGY

Trilobites ventured beyond the ocean

Contrary to their reputation as denizens of the open ocean, the extinct creatures known

DAN-ERIC NILSSON



100 µm