

RESEARCH HIGHLIGHTS

Selections from the scientific literature

BIOCHEMISTRY

EPO made from scratch

The hormone that triggers red blood cell production, erythropoietin (EPO), is often given to patients undergoing treatment for kidney failure or cancer. A team at the Sloan-Kettering Institute for Cancer Research in New York city has devised a method to synthesize a pure form of this complex protein from scratch.

Samuel Danishefsky and his colleagues built the protein, which until now could be made only in cell culture, by piecing together four glycopeptides that they had assembled in the lab. The researchers then folded the amino-acid chain into the final protein and used mass spectroscopy to verify the structure. Umbilical-cord blood-progenitor cells that were cultured with the synthetic molecule formed red blood cells.

Angew. Chem. Int. Edn.
<http://dx.doi.org/10.1002/anie.201206090> (2012)

ECOLOGY

Protecting prey with their odours

Exposing wild black rats to the smell of bird prey seems to put them off prey that is introduced later on — a strategy that could prove useful in species conservation.

To simulate bird nesting odours, Catherine Price and Peter Banks at the University of Sydney, Australia, placed feathers and faeces from

quail (*Coturnix coturnix japonica*) in the habitat of the wild black rat (*Rattus rattus*;



pictured). Seven days later, the researchers introduced artificial nests containing quail eggs. In areas where rats had been pre-exposed to the nesting odours, quail-egg survival was 62% greater than in areas where rats and eggs were introduced simultaneously.

The authors suggest that, during the pre-exposure period, the rats learned to ignore the odour cues because they were not associated with an egg reward.

Proc. Natl Acad. Sci. USA
<http://dx.doi.org/10.1073/pnas.12109811109> (2012)

ARCHAEOLOGY

How to move a 4-tonne statue

The Polynesian settlers of Easter Island may have transported their gigantic statues by slowly rocking them from side to side to make them 'walk'.

Nearly 1,000 statues litter the island, with the largest weighing about 74 tonnes and standing more than 10 metres tall. Some archaeologists propose that the statues, or moai, were transported from the quarry in a horizontal position on top of logs. However, Carl Lipo at California State University, Long Beach, and his team say that evidence points instead to an upright mode of transportation. Broken moai that were found along roads sloping upwards

mostly lay on their backs, whereas those discovered on downwards sloping roads tended to be lying face down.

The researchers built a 3-metre-high concrete scale model, which they say has the same physical properties as a moai. Using three hemp ropes, a team of 18 people was able to move the statue 100 metres in 40 minutes (pictured). However, others are sceptical of the findings, saying that the shape of the model is inaccurate.

J. Archaeol. Sci. <http://dx.doi.org/10.1016/j.jas.2012.09.029> (2012)
For a longer story on this research, see go.nature.com/1qoups



T. L. HUNT

PLANETARY SCIENCE

Moon spun off from Earth

A catastrophic collision between Earth and another body probably created the Moon. Computer models predict that the Moon was derived from the impacting body, and yet Earth and the Moon are chemically almost identical. Two new models show how this scenario could arise if Earth was spinning faster at the point of impact than it does today.

One model, by Robin

Canup of the Southwest Research Institute in Boulder, Colorado, suggests that if the impactor was larger than previous models have allowed — perhaps even Earth-sized — a collision could create a planet and a disk of Moon-forming material, both with the same composition and made from the impactor and its target.

Meanwhile, Matija Ćuk and Sarah Stewart at Harvard University in Cambridge, Massachusetts, show that if Earth used to spin faster than it does today, even a small, fast impactor could cause Earth