ECOLOGY

Predators attract

Proc. Natl Acad. Sci. USA doi:10.1073/pnas.1004519107 (2010)

Some fish species may be threatened by climate change because they become more attracted to the smell of predators in water acidified by high concentrations of dissolved carbon dioxide.

Eight-day-old clownfish (*Amphiprion percula*) reared in water with a concentration of 850 parts per million (p.p.m.) of CO_2 — the level expected by 2100 — spent more than 94% of their time in a stream of water spiked with a predator's chemical cue. Control clownfish in water containing present-day CO_2 concentrations of 390 p.p.m. avoided the dangerous stream altogether.

And when put back into their natural coral-reef setting, wild-caught damselfish (*Pomacentrus wardi*) larvae exposed to acidified water in the lab were up to nine times more likely to be killed by predators than were control larvae.

The study by Philip Munday at James Cook University in Townsville, Australia, and his colleagues warns that if other species react in the same way, fish populations could be devastated if atmospheric CO_2 levels continue to rise. **N.G.**

STEM CELLS

Blood source

Cell Stem Cell **7,** 11–14; 15–19; 20–24 (2010)

Obtaining human cells to reprogram into stem cells could one day be as easy as visiting a blood bank.

Adult cells can be reprogrammed in culture to become stem cells that can develop into any tissue. A goal of stem-cell research has been to develop such cells using a patient's own tissues. Specialized immune cells from the blood had previously been reprogrammed, but these are costly and cumbersome to isolate.

Now, three groups — led by George Daley at Harvard Medical School in Boston, Massachusetts, Rudolf Jaenisch at the Whitehead Institute for Biomedical Research in Cambridge, Massachusetts, and Keiichi Fukuda at Keio University in Tokyo, Japan — report the production of reprogrammed cells, known as induced pluripotent stem (iPS) cells, using white blood cells that are easily obtained from blood samples.

The teams used a virus to insert four genes needed to convert cells to iPS cells. They also boosted the efficiency with which the virus infects blood cells. Although the efficiency was still relatively low, the stem cells generated from blood looked and behaved like iPS cells derived from other sources. **H.L.**

CELL BIOLOGY

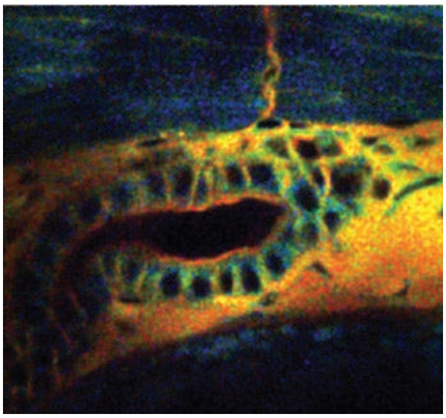
Live-action lipids

Biophys. J. **99,** L7–L9 (2010)

Imaging has revealed differences in the molecular organization of cell membranes in a living vertebrate embryo.

Arindam Majumdar at Uppsala University in Sweden, Katharina Gaus at the University of New South Wales in Sydney, Australia, and their colleagues stained zebrafish embryos with a dye and used multi-photon microscopy to observe the cell membranes in various tissues.

In cells lining the gut (pictured) and kidney tubules, the lipid molecules in the membranes facing the lumen were more ordered than those in the membranes on the opposite face of the cell. This organization is consistent with earlier observations in model membranes and cells in culture. **A.K.**



BIOPHYSICAL SOC.

NEUROSCIENCE

Memories preserved

Cell **142,** 39–51 (2010)

Researchers have found a small molecule that can help to keep newborn neurons alive in a memory region of rodent brains, suggesting that it might one day be developed into a treatment to avert memory loss.

Andrew Pieper and Steven McKnight at the University of Texas Southwestern Medical Center in Dallas and their colleagues identified the molecule, an aminopropyl carbazole dubbed P7C3, by screening 1,000 small-molecule compounds in adult mice.

The molecule was one of eight found that stimulated the growth of new neurons. P7C3 restored structure and function in the hippocampus of mice genetically unable to make new neurons. It also enhanced learning and memory in aged rats. **A.K.**

JOURNAL CLUB

Jean Braun
Joseph Fourier University, Grenoble, France

A geoscientist ponders possible links between erosion and Earth's climate.

Mountain ranges have been eroding at an increasing rate over the past 60 million years — seemingly in response to a cooling climate. Some researchers have proposed that this higher rate of erosion has increased the rate at which tectonic plates move at Earth's surface, suggesting that there is a link between Earth's climate and its tectonics.

As a member of the Earth science community who studies the relationship between these factors, I was interested in findings by Anthony Dosseto of Macquarie University in Sydney, Australia, and his co-authors. They measured the change in the sediment erosion rate over the past 100,000 years, a period that includes the last glacial cycle (A. Dosseto *et al. Geology* **38,** 395–398; 2010). By dating sediments from several locations in the Murrumbidgee River catchment of southeastern Australia, they discovered that the residence time — the length of time for which sediments remain on the landscape before they are eroded away — varied over geological time. The residence time was longer during warmer periods (such as around 100,000 years ago and today) and shorter during colder periods (such as around 15,000 years ago).

The authors interpret this change in residence time as a consequence of variations in vegetation type. The absence of trees in the higher parts of the catchment during cold periods resulted in an increased erosion rate, whereas the eucalyptus forest that was present during the warm periods slowed the erosion rate.

These results provide a rare quantitative estimate of the influence of vegetation and climate on erosion. This link might also be relevant to estimating how the current anthropogenic changes to Earth's climate and vegetation affect soil erosion.

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