

increase both the magnitude and frequency of natural population declines.

Proc. Natl Acad. Sci. USA
<http://doi.org/3hk> (2015)

SEISMOLOGY

San Francisco's quake hazard rises

Two geological faults in northern California are linked, meaning that the risk of a large earthquake in the eastern San Francisco Bay Area is greater than was thought.

A team led by Estelle Chaussard of the University of California, Berkeley, used satellite radar to study ground deformation along the Hayward fault, east of San Francisco. The scientists found that it connected with the Calaveras fault. Both are part of the San Andreas system and were considered to be separate.

The combined fault system could unleash an earthquake greater than magnitude 7, bigger than had been expected. *Geophys. Res. Lett.* <http://doi.org/3hh> (2015)

ATMOSPHERIC SCIENCE

Asian pollution hitchhikes south

Pollution from East Asia affects air quality in the distant tropics.

A team led by Matthew Ashfold at the University of Cambridge, UK, detected elevated levels of a chlorine-containing gas at two remote sites in tropical Borneo during the Northern Hemisphere winter of 2008–09. The team used an atmospheric transport model to show that the chemical — an indicator of a range of industrial pollutants — was transported southward

from east Asia by rapidly moving cold air masses.

During cold surges, east Asian air pollution (pictured) can reach the equator in a few days. If ozone-degrading chlorine pollutants are lifted by convection into the tropical atmosphere, even short-lived compounds might have a negative effect on stratospheric ozone, the authors say.

Atmos. Chem. Phys. 15, 3565–3573 (2015)

MICROBIOLOGY

Downsides of low-dose antibiotics

Taking low doses of antibiotics to prevent recurring bladder infections could make the illness worse than taking no antibiotic at all.

Lee Goneau of the University of Toronto in Canada and his colleagues studied mice previously infected with urinary tract bacteria, and treated the animals with low doses of the antibiotic ciprofloxacin. In mice that had cleared their infections before receiving the drug, 80% became reinfected.

Another group of mice with a low level of infection had more bacteria in their urine after taking the antibiotics.

The antibiotic caused the bacteria to produce proteins that let them stick to bladder and kidney cells, making it easier for the pathogens to colonize these tissues.

mBio 6, e00356-15 (2015)

MOLECULAR PATHOLOGY

Cancer spreads among clams

Outbreaks of leukaemia-like cancer in soft-shell clams may have originated in a single clam.

Mysterious cancers have been affecting clams and other marine bivalves in the United States and Europe since at least the 1970s. Stephen Goff at Columbia University in New York and his colleagues studied the DNA of cancerous and non-cancerous cells from several populations of

SOCIAL SELECTION

Popular articles
on social media

Scientists share happy hashtags

Online conversations about science can become mired in negativity — job shortages, dwindling grant support and breakdowns in peer review — but the Twitter streams of many researchers recently turned positive. Researchers of all types rallied around the hashtag #IAMAScientistBecause to share their scientific inspirations. Chelsea Polis, an epidemiologist at the Guttman Institute in New York City, tweeted: “#IAMAScientistBecause practice of science values truth & integrity. I get to be surrounded by colleagues motivated by things other than \$\$.” A separate Twitter storm erupted thanks to Melissa Vaught, a science editor in Bethesda, Maryland, who tweeted: “Today a challenge: Let’s build a #womeninSTEM list that goes beyond the usual suspects. #BeyondMarieCurie.” The challenge prompted a flood of tweets about prominent female scientists, past and present.

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soft-shell clams (*Mya arenaria*) along the coast of the eastern United States. The DNA from cancerous cells did not match that of the hosts' other tissues, but the cancer cells were genetically similar to each other, suggesting that they arose from a single ancestor.

Only two other transmissible cancers are known, affecting dogs and Tasmanian devils. However, invertebrates may be particularly vulnerable because they lack a part of the vertebrate immune system that identifies foreign invading cells, the authors say.

Cell 161, 255–263 (2015)

PHYSICS

Hot fluids act strangely in space

Boiling fluids behave differently in space and on Earth, suggesting that new approaches are needed to cool spacecraft in orbit.

Heat pipes suck excess heat away from laptop computers and other devices, and consist of a tube filled with liquid that evaporates at one end when heated. The vapour flows to the cool end, then condenses and returns to the other end. Joel Plawsky of Rensselaer Polytechnic Institute in Troy, New York, and his colleagues sent a heat-pipe experiment to the International Space Station (pictured), where the transparent, pentane-containing pipe was heated.

Surprisingly, the liquid did not rush away from the hot end as it does on Earth, but instead flooded the heated area. In zero gravity, capillary forces pulled liquid towards the hot end, whereas on Earth, gravity counteracts these forces.

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