

ENZO AND PAULO RAGAZZINI/CORBIS



Mayan temples reveal sorry tale of civilisation wrung dry

THE builders of the ancient Mayan temples at Tikal in Guatemala switched to inferior wood a few decades before they suddenly abandoned the city in the 9th century AD. The shift is the strongest evidence yet that Mayan civilisation collapsed because they ran out of resources, rather than, say, disease or warfare.

Researchers led by David Lentz, a palaeoethnobotanist at the University of Cincinnati in Ohio, sampled wooden beams and lintels from all six major temples and two palaces within the ancient city of Tikal. The first three temples, built before AD 741, used only large, straight

logs of the sapodilla tree - a particularly strong wood that is nevertheless easy to carve with ceremonial inscriptions.

But after that date, large sapodilla logs were almost entirely replaced in temple construction by logwood, a smaller, gnarly tree that is almost impossible to carve. "It's definitely an inferior material," says Lentz, who reasons that the temple-builders would only have accepted logwood if they had run out of suitable sapodilla trees to harvest (*Journal of Archaeological Science*, DOI: 10.1016/j.jas.2009.01.020).

Earlier studies of pollen deposits have suggested that deforestation and soil erosion were increasing in the region as Mayan civilisation neared its collapse. But the temple timbers of Tikal are the first to show that ecological overexploitation directly affected Mayan culture.

Yin-yang planet has phases like the moon

A SUPER-HOT planet 1500 light years away has been seen waxing and waning like the moon. The discovery hints that hot gas giants come in two varieties.

The phases of Corot 1b were detected by a team at Leiden Observatory in the Netherlands, who analysed changes in the amount of red light from the system. A small component of the light smoothly dims and brightens

as the planet orbits. This is probably alternation between the dark of Corot 1b's relatively cool night side and the glow of its red-hot day side, which permanently faces its star and reaches a temperature of about 2400 kelvin (*Nature*, DOI: 10.1038/nature08045).

The stark temperature difference contrasts with previous observations of another gas planet, HD 189733b, using the Spitzer

Space Telescope, which found a fairly even temperature around the planet of about 1000 kelvin.

The theory is that fierce winds carry solar heat around HD 189733b, whereas on Corot 1b, metal oxides appear to absorb heat high in the stratosphere and quickly re-radiate it before it can be spread around. "What we observe really fits into the idea that there are two different types of planet in this range", says Leiden team member Ignas Snellen.

Ocean's crust hums a storm warning

LISTENING to Earth's hum could reveal a record of worsening storms due to climate change.

Ocean waves thumping on the crust create both a "hum" and tiny earthquakes called "microseisms", which show up in seismological data. Big waves generate a higher amplitude than small waves. If coastal storms have got worse, the telltale signs should be there in the seismic history, argues Peter Bromirski of the Scripps Institution of Oceanography at the University of California, San Diego, in a commentary in *Science* (vol 324, p 1026). It would also hint at changes in coastal erosion.

Many seismograms have been recording for nearly a century, generating a "treasure trove" of archived paper drums. "The calibrated seismometer records go back further than good wave measuring systems," says Spahr Webb of Columbia University's Earth Institute in New York.

Gyrfalcon nest sites built to last

BIRDS of prey are known for their habit of using the same nest site, such as a cliff ledge, year after year. Now it seems that gyrfalcons can carry on this tradition for millennia.

By radiocarbon dating guano samples at 13 gyrfalcon nest sites in Arctic regions of west Greenland, Kurt Burnham of the Edward Grey Institute of Field Ornithology in Oxford, UK, and colleagues showed that some sites have been occupied for at least 2500 years. The oldest sites tended to be those at higher elevations, probably because these were the first to become usable as the Pleistocene icecap retreated. The study, to be published in *Ibis*, sets a new record for nesting site habitation by birds of prey.