

# RESEARCH HIGHLIGHTS

## Turf wars

*Global Change Biol.* doi:10.1111/j.1365-2486.2008.01617.x (2008)

Lawns are already under environmental scrutiny owing to the amount of water they consume. But the emission of nitrous oxide (N<sub>2</sub>O), an important greenhouse gas, might also be a problem.

Diane Pataki at the University of California, Irvine, and her colleagues used fertilized and unfertilized experimental turf plots heated by about 3.5 °C and compared these with unheated controls. They show that warmer and wetter conditions increase N<sub>2</sub>O emissions from fertilized lawns. As temperatures rise, they argue, turf fertilization will become a significant source of N<sub>2</sub>O in urban areas.

Warmer conditions also promoted the growth of weeds with C<sub>4</sub> metabolism — which is more efficient than C<sub>3</sub> at higher temperatures — in the C<sub>3</sub> turf, adding to ongoing concerns about how weeds might spread under climate change.



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## ASTROPHYSICS

### First light

*Science* **321**, 669–671 (2008)

Observations of distant quasars and galaxies show that there was light when the Universe was less than one billion years old. But how did the first stars coalesce and ignite their nuclear fire?

Naoki Yoshida of Nagoya University in Japan and his colleagues used supercomputers to simulate the formation of the gravitational seeds for the first stars, beginning with the hot gas and cold dark matter right after the Big Bang and following their gravitational collapse. The models spanned 13 orders of magnitude, tracking the complicated motions of volumes of gas smaller than the Sun amid a primeval cosmic medium hundreds of thousands of light years across.

The resulting protostars eventually evolved into massive stars, a hundred times the mass of the Sun.

## ECOLOGY

### Fungus hunters

*Naturwissenschaften* doi:10.1007/s00114-008-0421-9 (2008)

Ants have developed many survival strategies, from seed harvesting to fungus gardening. But the *Euprenolepis procera* ant (pictured right) of southeast Asia has an entirely new strategy: gathering wild mushrooms.

Volker Witte of Ludwig-Maximilians University in Munich, Germany, and Ulrich Maschwitz of Johann-Wolfgang-Goethe University in Frankfurt tracked the ants in the Malaysian rainforest and discovered that

they are both nomadic and can survive on mushrooms alone. Although some other ants are known to be nomads, the diet of wild mushrooms is a surprise, as they are often loaded with toxins and low in nutrients.

The authors argue that once the ability to consume fungus developed, intense competition with other species drove them to devote themselves to this food specially.

## ANIMAL BEHAVIOUR

### Is he into her?

*Curr. Biol.* doi:10.1016/j.cub.2008.06.067 (2008)

When it comes to choosing a mate, male Atlantic molly fish (*Poecilia mexicana*) often have to make their selection when other males are watching. Martin Plath at the University of Potsdam in Germany and his colleagues suggest that, in this situation, males try to deceive others about their true intentions regarding mate choice.

When given their choice of a small or large female, males without an audience usually made advances to the bigger one. When another male was present, however, the

molly initially paid attention to the smaller female but then stopped expressing a mating preference.

Plath hypothesizes that the behaviour is a counteradaptation to male mate-choice copying, in which males try to mate with a female that others also pursued.

## PALAEOCLIMATE

### Quick start to a cold spell

*Nature Geosci.* doi:10.1038/ngeo263 (2008)

During the winter of 12,679 years ago, western Europe was apparently slammed with a major wind shift that heralded the start of the coldest period in recent history.

Earlier work suggested that the Younger Dryas cold spell began rapidly around 12,700 years ago. Now, a team led by Achim Brauer of the GFZ German Research Centre for Geosciences in Potsdam, Germany, has narrowed this down by studying sediments laid down annually in a German lake.

The layers, called varves, record a dramatic shift in storminess over the course of a single year. The authors argue that this reflects changes in atmospheric circulation patterns over the Atlantic, and helps explain how a shutdown of ocean circulation could have led to abrupt cooling in western Europe.

## MOLECULAR BIOLOGY

### Going farther

*Cell* doi:10.1016/j.cell.2008.06.051 (2008)

Researchers have identified what they say are the first targeted drugs that boost physical endurance.

The team, led by Ronald Evans at the Salk Institute in La Jolla, California, tested

