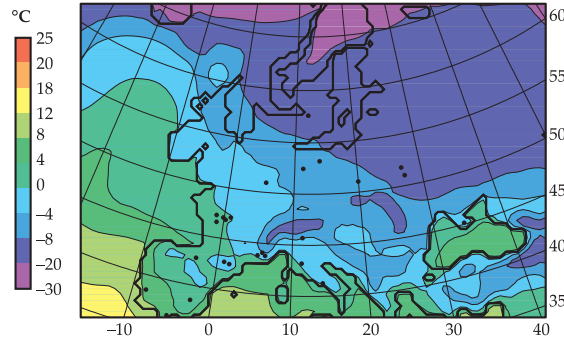


## Neandertals and Climate

One of the most fascinating mysteries in human history is the fate of the Neandertals, who thrived in Europe for many thousands of years before becoming extinct around 30,000 years ago as glaciers crept over Europe.

But it wasn't the weather—or human competition or disease—that did them in. Rather, they couldn't adapt to changes in their food supply, a science team says. The team, headed by Tjeerd van Andel, a geoarchaeologist at the University of Cambridge, U.K., last month issued a book (see credits) that lays out the results of a pioneering, 7-year effort to combine climatic, environmental, and archaeological information for the anthropologically crucial period between 65,000 and 20,000 years ago.

The study makes it clear that a major cause of Neandertals' demise was their dependence on "sedentary herbivores," such as herds of bison and giant deer, Van Andel says. They simply couldn't adapt when the herds gave way to more thinly spread steppe animals and migrating groups that had to be followed. The "great surprise," he adds, was that the Aurignacians—contemporaneous early modern humans who favored the same environments and food—also disappeared. A different culture, called Gravettian, appeared around



Map shows European winter temperatures around 50,000 years ago—before it got really cold—and contemporaneous Neandertal sites.

35,000 years ago, with technology and social organization that enabled them to follow migrating herds.

The study's rich detail is welcome, says archaeologist Curtis Runnels of Boston University: "Most archaeological reconstructions have generally worked against a kind of flat background."

## Shunning the E-Word in Georgia

The Georgia State Board of Education has thrown scientists into a tizzy with a new draft of its proposed curriculum in science and math. For the most part, it follows model standards set by the National Research Council and AAAS (publisher of *Science*). But there's one omission: the word "evolution." Instead, it uses phrases indicating that biological and geological changes occurred "over time." (Georgia is accepting feedback on the standards at [www.glc.k12.ga.us/spotlight/gps1.htm](http://www.glc.k12.ga.us/spotlight/gps1.htm)).

The new curriculum is to replace standards in place since 1984. The board will vote on it in May. The proposed changes would not require schools to buy new textbooks but will influence the content of state tests.

Last week, signatures challenging the proposed guidelines were pouring onto an online petition ([www.petitiononline.com/gasci04/petition.html](http://www.petitiononline.com/gasci04/petition.html)). But as one science teacher explained, pressures to ban the e-word are strong in the Peach State: "When you say the word evolution, people automatically, whatever age they are, think of the man-monkey thing," she told the *Atlanta Journal-Constitution*.



## Thar She Blows

Southern blue whales escaped extinction by a hair before becoming a protected population in the 1960s and are still listed as endangered. Now researchers have reported discovery of a hitherto unknown cache of the animals near the fjords off the southern coast of Chile. It is "arguably the most important blue whale feeding and nursing ground known to date in the Southern Hemisphere," reports the team, led by Rodrigo Hucke-Gaete of the Southern University of Chile in Valdivia, who counted 153 whales using aerial and boat-based surveys. Their report is in the latest *Proceedings of the Royal Society: Biological Sciences*.

# RANDOM SAMPLES

edited by Constance Holden

## Snakes Lose Sea Legs



Extinct marine snakes with legs, such as this one, were probably a side branch of the snake evolutionary tree that was otherwise rooted on land.

Snakes slithered into existence on land—not out of the surf, claims a new study. The finding is the latest strike against the marine-origins theory, which first surfaced in Victorian times.

Until recently, most experts believed these reptiles evolved underground, from burrowing lizards. But the idea that snakes first lost their limbs at sea gained new life 7 years ago, when scientists found a fossilized marine snake with tiny hind limbs. They theorized that it was a missing link between snakes and the giant Cretaceous-era marine reptiles called mosasaurs.

Now, scientists at Pennsylvania State University, University Park, have put snakes' ancestors back on terra firma. Evolutionary biologists S. Blair Hedges and Nicolas Vidal compared two genes, RAG1 and *C-mos*, in more than 60 living snake and lizard families. The analysis reveals that another group of lizards is related to the carnivorous monitor lizards—the undisputed close relatives of ancient mosasaurs. But there's no close genetic link between those monitors and snakes, the pair report online in the 29 January issue of *Biology Letters*.

Hussam Zaher, a snake-origins expert at the University of São Paulo in Brazil, says he'd like to see more lizard species in the analysis. Nonetheless, he agrees that "the evidence supporting the marine theory has been seriously questioned."

## EXPLORERS

**Journey through time.** Discovering the oldest known fossil of an air-breathing animal is an impressive achievement for any paleontologist—especially for one who drives a bus for a living.

Mike Newman earned his undergraduate degree in geology from the University of Aberdeen, U.K. "But then I got married and had to find a



way to pay the bills," says the 36-year-old city bus driver. He never lost interest in the subject, however, and spends his weekends looking for specimens, attending conferences,

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and even publishing papers in peer-reviewed journals.

In 1998, Newman began stalking a millipede-like creature that lived on mossy mudflats along what is now the east coast of Scotland. He had found a few of these before in very poor condition. But the site is accessible for only 2 hours a day at low tide. Three years ago, Newman hit pay dirt

and shipped his specimen off to Heather Wilson, a Yale University paleontologist whom he had met at a conference. It turned out to be 420 million years old,

with microscopic air holes that allowed it to breathe on land. When Wilson and Lyall Anderson, a researcher at the National Museums of Scotland in Edinburgh, published the results in the January issue of the *Journal of Paleontology*, they honored Newman by naming the fossil *Pneumodesmus newmani*.

Newman's next project is a search for lampreys that lived 370 million years ago. He'd like to spend more time in the field, but "bus driving pays the mortgage."

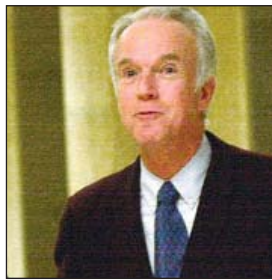
## JOBBS

**A perfect fit.** Relevant experience is usually a good thing in a job search—except when it might be too much of a good thing.

The Pharmaceutical Research and Manufacturers of America, which lobbies for the big drug companies, wants to hire Representative Billy Tauzin (R-LA) and pay him big bucks to, among other things, deal with the new Medicare rules on prescription drugs, according to press reports. But consumer groups are complaining that Tauzin's role in writing the new law, as chair of the House Energy and Commerce Committee, may violate congressional ethics rules about stepping into a new job shaped by his actions as a legislator.

Ironically, Tauzin's committee is in the midst of investigating alleged ethical breaches by scientists at the National Institutes of Health, including the role of former National Cancer Institute Director Richard Klausner in a contract awarded to Harvard University, where he had been a candidate for presidency.

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## ON CAMPUS

**Costly goodbye.** Thomas Butler, the Texas Tech University researcher convicted last month of fraud and improperly shipping plague samples back to Tanzania, has resigned from the faculty. He will also pay the Lubbock university nearly \$300,000 to settle a dispute over hidden contracts involving clinical trials for two drug companies (*Science*, 19 December 2003, p. 2054). The university had begun action to fire Butler, but the deal closes the matter, says M. Roy Wilson, president of Tech's medical center: "We wish Dr. Butler well."

Butler is expected to be sentenced next month. His attorneys have said he will appeal. If given jail time, he will also lose his license to practice medicine in Texas.

## AWARDS

**Britain bound.** The United Kingdom is opening its doors wider to foreign graduate students in hopes of benefiting from their scientific talent.

Starting this fall, the country will award more than 100 new scholarships to students from India, China, Hong Kong, Russia, and 150 other countries in the developing world for graduate study in science, medicine, and engineering. Named after chemistry Nobel laureate Dorothy Hodgkin, the awards are being funded with \$18 million from the British government-funded Research Councils and from private companies.

At the same time, new immigration measures going into effect this summer will allow foreign nationals who have graduated from a U.K. university with a degree in math, science, or engineering to work for 12 months after graduation. Under current rules, they can only remain in the U.K. for a maximum of 4 months after completing their studies.

**Immune cell sleuths.** Harvard's Timothy Springer and Stanford's Eugene Butcher are the joint winners of the

# RANDOM SAMPLES

PEOPLE

edited by Yudhijit Bhattacharjee

Crafoord Prize in polyarthritis, awarded by the Royal Swedish Academy of Sciences once every 4 years. The two immunologists will share \$500,000.

Springer (right) and Butcher (below) receive the honor for their investigation of how white blood cells migrate to diseased tissue. Butcher identified binding proteins called selectins that recruit white blood cells to infection sites, and Springer's work laid

bare the actions of adhesion molecules called integrins, which determine how white blood cells stick. The research has guided drug developers fashioning treatments for autoimmune diseases; last year, two drugs were approved for psoriasis based partly on Springer's work.

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