

Digging for Darwin

Image not available for online use.

Prescott with putative *Beagle* anchor, which was found in an Essex marsh.

After 130 years of mystery, one of the most famous ships in the history of science may have been discovered 5.5 meters below an English marsh. The *HMS Beagle* carried a youthful Charles Darwin to the Galápagos Islands and elsewhere, as he chewed over his theory of natural selection. Maritime historian Robert Prescott of the University of St. Andrews, U.K., and other researchers used old records, archaeological surveys, an abandoned anchor, and finally remote sensing to track down the buried remains of a ship at one of the *Beagle*'s likely final resting places: a remote backwater in coastal Essex some 90 kilometers northeast of London. The search was detailed in a BBC

documentary aired last week in the U.K.

"All the circumstantial evidence points toward this being the *Beagle*," says Robert Warren, curator at the National Maritime Museum in London. Proving the remains reflect the correct dimensions—the ship was a little over 27 meters long—and carbon dating the wood will help confirm the find, he adds.

Virtual Landscape Under the North Sea

Britain and northern Europe used to be joined by land, including a vast plain. That plain has been under the southern part of the North Sea for some 7000 years. But now, with high-powered computers, scientists are recreating the lost landscape. A team at the University of Birmingham, U.K., is devising 3D reconstructions of the plain using acoustic data originally gathered for oil exploration that detects the ancient contours under thick layers of modern marine sediments.

RANDOM SAMPLES

edited by Constance Holden



Reconstruction of submerged landscape with mesolithic hut.

Engineers have produced a preliminary virtual reconstruction of a long river whose 600-meter-wide valley was flooded due to glacial melting. The reconstruction includes mesolithic huts and computer-generated flora based on plants found on the east coast of England.

It is "the most exciting and challenging virtual reality project since Virtual Stonehenge in 1996," says Bob Stone, head of the university Human Interface Technologies Team. He says it will help researchers understand how hunter-gatherers migrated west from continental Europe to Britain.

"Now we can examine the actual landscape as it appeared at different times" as the glaciers melted, says marine archaeologist Nic Flemming of the U.K.'s Southampton Oceanography Center. Fossil mammoth bones and carved reindeer antlers, as well as traces of villages including submerged wooden posts, have already been found in shallower areas. Now, he says, the reconstruction will guide scientists in surveying and excavation over a huge area, and it will eventually "enable us to repopulate the landscape with both vegetation and animals and to study the growth and decay of human settlements."

Three's Company

Finding a mate can be difficult. But at least we only have one other sex to worry about. Pity, then, *Pogonomyrmex*. These ants are, in effect, the first organism to have evolved more than two sexes, claims evolutionary biologist Joel Parker of the University of Lausanne, Switzerland. In some species of this ant genus, found in the southwestern United States, colony-founding queens must mate with a male of their own genetic strain to produce queens and need sperm from males of another strain to produce workers.

Parker argues that the ant's genetic system represents a major evolutionary transition. One such transition was the evolution of insect sociality—like the cells in a body, individuals split the tasks of working and reproducing. But in other ants, workers and queens share the same genes, and castes are determined by environmental and developmental factors. *Pogonomyrmex* has gone a step further down the path of interdependence by institutionalizing different roles in the genes.

"It's an interesting observation that, as far as the superorganism is concerned, one male and one female may not be enough," says evolutionary biologist Laurence Hurst of the University of Bath, U.K. But he notes that some fungi have thousands of different genetic mating types. Parker, whose paper appears in the February issue of *Trends in Ecology and Evolution*, counters that the ants, unlike the fungi, couldn't survive without their sexual variation.



Arizona *Pogonomyrmex*.

JOB S

Rough ride. Following months of unfavorable publicity and a damning report by a National Academy of Sciences (NAS) panel, veterinarian Lucy Spelman (below) has decided to resign the directorship of the Smithsonian National Zoological Park in Washington, D.C.

Spelman, 41, became the zoo's youngest and first female director 3 years ago when Smithsonian Institution Secretary Lawrence Small hand-



picked her over more senior candidates. She had it rough from the start. First came media reports that her staff had doubts about her leadership, then came the deaths of several animals, including a zebra, an elephant, two red pandas, and, last week, a lion. A congressionally mandated NAS report on the zoo released last week found long-term problems with

nutrition, health care, and pest-control efforts and was critical of altered zoo records.

As a "lightning rod" for criticism, "I have attracted a lot of attention that has distracted people from doing their work," Spelman said at a 25 February press conference, announcing that she was resigning at the end of the year. "It's time for me to move on." To what, she did not say.

Ascending the tower. A university administrator well known to Washington science policy wonks is set to become the first woman to hold the University of California's (UC's) number two job. UC President Robert Dynes last week appointed obesity geneticist M. R. C. Greenwood (right), chancellor of UC Santa Cruz, as provost of the entire 10-campus, 200,000-student system.

Greenwood, 60, has held a string of high-profile posts, including associate director of the White House science adviser's office under President Bill Clinton and president of AAAS (*Science's* publisher). As Santa Cruz's chief since 1996, she oversaw a 50% enrollment jump and the addition of more than 250 new faculty. When she takes her new, \$380,000-per-year job on 1 April, how-

ever, Greenwood will face a less inviting task: helping extricate UC from one of its gravest fiscal crises in years. Greenwood



will replace C. Judson King, who after 8 years in the job is returning to UC Berkeley as director of its Center for Studies in Higher Education.

IN THE COURTS

Off the hook. Former cancer researcher Friedhelm Herrmann has won a legal settlement that ends a criminal misconduct case against him. As the German magazine *Spiegel* reported on 25 February, Herrmann's attorney cut a deal with the Berlin district attorney to drop charges that Herrmann had engaged in "deceitful acquisition of funds," first brought by the German science funding agency, the DFG, in 1999. Herrmann admits no guilt but will have to pay a "charge" of \$10,000 for bringing the case

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PEOPLE

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to a close.

In a case that rocked the German science community, a DFG panel found in 1997 that Herrmann and his colleague Marion Brach had falsified data in dozens of papers (*Science*, 23 June 2000, p. 2106). Both left their academic posts, and the DFG barred both from receiving any funds. In addition, the DFG took the unusual step of bringing criminal charges against Herrmann. The case languished for years in the Berlin district attorney's office, however, and was never brought to court. The deal announced this week, says a DFG spokesperson, "is a failure of the justice system." Herrmann is a practicing doctor in Munich, and, according to *Spiegel*, still uses the title "Professor."

AWARDS

Mind and matter. Robert Wurtz, Amiram Grinvald, and William Newsome have won the Dan David Prize for their contributions toward mapping the connections between neural processes and behavior. They share \$1 million.

Wurtz, a neurophysiologist at the U.S. National Eye Institute, and Newsome, a neurobiologist at Stanford University, receive the honor for investigating neural processes that underlie visual perception and visually guided behaviors. Grinvald, a neuroscientist at the Weizmann Institute of Science in Rehovot, Israel, wins for his work on information processing in the mammalian cortex and for designing optical methods for imaging neuronal activity in the living brain.

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TWO CULTURES

State of the art. Who says science and samba don't mix? Last week, they did—and with spectacular results—at the carnival in Brazil.

A 4500-member troupe from Unidos da Tijuca—one of 14 samba schools competing in Rio de Janeiro as part of the popular street festival—based its performance on scientific themes ranging from DNA (below) to robots to space exploration. The show tied for second place, coming in behind a performance by Beija-Flor that represented the Amazon as the heart of Brazilian culture and creativity.

The idea came from Casa da Ciência, a cultural center affiliated with the Federal University of Rio de Janeiro, which convinced Unidos da Tijuca that a scientific story line would appeal to the event's 1 billion viewers worldwide. "By inserting science into a festival, we took the risk that it might be caricatured," says Ildu Moreira de Castro, a physicist at Federal University, who helped with the project. "But it seems to have been well received."

