area near Georgia's breakaway Abkhazia region to help local officials grab the dangerous, portable devices.

Georgia is a hot spot for illicit trafficking of nuclear materials (*Science*, 1 June 2001, p. 1632). Although Western governments have worked hard to help Russia and other countries secure their fissile material, the 11 September attacks have heightened fears of terrorists using other radioactive materials, from discarded medical isotopes to uranium mining tailings, to make "dirty bombs" that could spread radioactivity over large areas. Feeding those fears is the fact that the materials are usually less secure than weapons-grade nuclear caches and often have been abandoned by former owners.

The crisis began with a fax on Christmas Eve from Georgian authorities. Three men gathering wood near Lja on 2 December 2001 had found two containers that appeared to have melted the nearby snow. Lugging the containers back to their campsite for warmth, the men soon became dizzy and nauseous and started vomiting. Within a week, radiation burns began to develop on their backs. On 4 January 2002, IAEA dispatched three investigators to Tbilisi, but heavy snows and rough terrain prevented them from reaching the objects.

This is not the first time such containers have been found. In 1998, not far from Lja, a fisherman found one in a riverbed. Physicists in Tbilisi later discovered that it was packed with strontium-90 emitting a whopping 40,000 curies of radiation, equivalent to the radiation from strontium-90 released during the 1986 Chornobyl explosion and fire. "My shock was so great when I was informed of this," says Abel Julio González, director of IAEA's division of radiation and waste safety. "I was convinced they had made a mistake." But an IAEA team confirmed the readings and whisked the object —along with a second one found soon after—to a guarded location in Tbilisi.

Western officials initially did not know what the containers were used for nor how many had been built. A request for information from Russia yielded sympathy but few answers, says an IAEA official, as Russian authorities insisted they were not liable for nuclear materials found in other former Soviet republics.

Slowly, however, González and his team began to piece together the puzzle. They obtained a schematic of a device that used the mystery containers to generate electricity from the strontium's heat, possibly to power remote radio transmitters. The units recovered so far are encased in a titanium-based ceramic. As the beta particles streaming from the strontium-90 slam into the metal shielding, part of the energy is converted into x-rays and part into heat. Soviet labs apparently produced several hundred of the generators, including some with radioactivity levels as high as 100,000 curies. None of these high-powered models have yet turned up, and only a handful of the 40,000-curie devices have been recovered in covert operations in four countries: Georgia, Belarus, Estonia, and Tajikistan.

Radiation injuries from orphaned sources are "a very real problem," says George Vargo of the U.S. Pacific Northwest National Laboratory in Richland, Washington. But the Georgian men being treated for severe x-ray burns are the first confirmed victims of the Soviet thermogenerators.

The IAEA team members had planned to wait until this month to assist in recovering the containers, but they decided to move more quickly after an urgent appeal last week from the Georgian government. They arrived in Tbilisi on 27 January. Officials from IAEA and Georgia, France, Russia, and the United States are expected to meet in Tbilisi on 4 February to review the recovery effort and discuss the lingering threat of other orphan sources. Although much of the strontium-90 will probably be stored as radioactive waste, the agency is also mulling a suggestion to sell some of it to hospitals as a source of the short-lived daughter isotope yttrium-90, an experimental treatment for cancer and arthritis. **–RICHARD STONE**

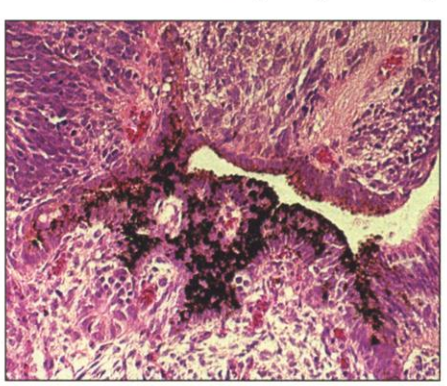
CREDITS: (TOP TO BOTTOM) DENIS DOYLE/AP; J. CIBELLI *ET AL.*

STEM CELL RESEARCH

## Primate Parthenotes Yield Stem Cells

A reproductive quirk of some reptiles, insects, and other species may help stem cell researchers sidestep ethical debates over the use of human embryos. Researchers at Advanced Cell Technology (ACT) in Worcester, Massachusetts, report on page 819 that they have isolated the first stem cell lines from primate parthenotes, embryos grown from unfertilized eggs that, in mammals, are not capable of developing into viable fetuses.

In October, Yan-Ling Feng and Jerry



**Virgin division.** Nerve (pink) and pigment (black) cells grow from stem cells plucked from a parthenote.

## ScienceScope

**FMD Free** It's official: The foot-and-mouth disease (FMD) epidemic that ravaged British farms in 2001 is over. Last week, the International Epizootic Office in Paris declared the U.K. free of the dreaded virus, clearing the way for resumed meat exports. The total number of animals slaughtered to subdue the virus, according to the Department for Environment, Food, and Rural Affairs: 6,131,440.

**W.'s Other War** The Bush Administration appears to be more sympathetic than the Clinton team to the cause of veterans with Gulf War illness, a mysterious set of symptoms plaguing some veterans of the 1991 conflict. Based on as-yet-unpublished research, the Department of Veterans Affairs announced in December that Gulf War vets face double the risk of Lou Gehrig's disease—marking the first time an Administration has acknowledged a direct link between the war and a specific disease. And last week, Secretary of Veterans Affairs Anthony J. Principi named several vocal critics of past government policy to a new research advisory committee. In contrast, a Clinton-era oversight panel was heavy on military brass and widely mistrusted by veterans (*Science*, 2 February 2001, p. 816). Epidemiologist Robert Haley of the University of Texas Southwestern Medical Center in Dallas, one of the Clinton-era critics and a member of the new panel, says, "We're seeing a complete reversal of policy."

**Cloning Bills Blossom** A looming Senate debate over cloning got a little more complicated last week. Senator Tom Harkin (D–IA) threw a third major proposal for banning human reproductive cloning onto the table, giving lawmakers preparing for an expected vote later this spring even more to think about.

The new bill (S. 1893) is similar to S. 1758, proposed last December by Senator Dianne Feinstein (D–CA). Her bill would keep the door open for research using cloned embryos but impose civil penalties on anyone who tries to clone a person. Harkin's bill adds criminal penalties to the mix.

More than 20 research organizations have endorsed Feinstein's bill over legislation backed by Senator Sam Brownback (R–KS) that would ban all uses of cloned embryos. The next step: March hearings on Brownback's bill (S. 790), with a full Senate vote coming sometime later.

Joe Howard, director of the Max Planck Institute of Molecular Cell Biology and Genetics in Dresden, Germany, favor yet a third model. In "asymmetric hand-over-hand," the kinesin heads step over each other but rotate little. The mystery might be solved if researchers can overcome a technical challenge universal to kinesin motion studies: the difficulty distinguishing between the two tiny heads. Scientists are experimenting with special dyes to do just that.

Myosin researchers can sympathize with their kinesin brethren. Recent work on these motors, which control muscles and transport various proteins, shows that two family members don't move as believed. Myosin VI, whose function remains a puzzle, apparently edges backward and takes far larger steps than its structure suggests is possible. And myosin V has been found to stay stuck to its filament during motion rather than lifting off periodically.

Motor molecules are "capable of some pretty surprising things that we might not have predicted," says Richard Cheney, a cell biologist at the University of North Carolina, Chapel Hill. And they're taking scientists along for the roller-coaster ride.

–JENNIFER COUZIN

SPANISH UNIVERSITIES

## Reforms Spark More Jobs—and Protests

**BARCELONA**—Spain's government sees it as a cure for cronyism. The universities see it as an infringement on their autonomy. The bone of contention: a new law governing hiring practices that has triggered a mad rush to fill academic posts and has sparked a bitter row between the universities and the education ministry that funds them.

Last December, Spain's parliament passed government-sponsored legislation that subjects candidates for academic posts to peer review by national panels before they can apply for a job. In the weeks leading up to the law's passage, university rectors assailed the legislation, arguing, among other issues, that it would erode the autonomy of Spain's public universities, impeding their ability to hire top talent. At one point, the rectors appeared to be winning the public relations battle: On 1 December 2001, more than 100,000 people took to the streets to protest the law. But they lost the war when the bill became law a few weeks later.

Now the rectors are under fire from their own rank and file. In a 3-week period last fall, Spain's 48 public universities advertised some 4600 new positions, about twice the number posted during an entire year. Because the jobs were advertised before the new law took effect on 13 January, the slots will be filled under the old rules, in which five-member appointment boards select candidates by majority vote. But hiring so many people this year will have "hugely negative effects" by sharply limiting opportunities for young researchers in coming years, predicts inorganic chemist José Vicente of the University of Murcia.

The government's reforms are designed to reduce the universities' influence over the appointments board. Two of the five board members come from the university, so only one other member must be persuaded for the university to land its favored candidate. Thus the deciding vote often is "largely influenced by favoritism and mutual self-interest," contends astrophysicist Antonio Ferriz-Mas of the University of Vigo. An education ministry survey appears to offer some support for that claim: Professorial posts handed out under the old system went to internal or local candidates over 90% of the time.

According to the law, a new agency will first review the qualifications of aspiring applicants to sort the wheat from the chaff. Those who pass muster can present themselves to national boards of experts, who would recommend the best applicants to the university for final selection. The law will ensure that only capable individuals land professorial posts, says physicist Luis Rull-Fernández of the University of Sevilla.

However, the Spanish Council of Rectors (CRUE) claimed in a statement that the law erodes university autonomy, which it calls a "fundamental right" under Spain's constitution.


CREDIT: COORDINADORA DE PROFESORES CONTRA LA LEY DE ORDINACIÓN UNIVERSITARIA

**Not reform-minded.** A recent protest of the new university law sent thousands into the streets of Madrid.

## ScienceScope

**Time Limit** German researchers are protesting a new law that would require aspiring academics to get a doctorate and a permanent university job within 12 to 15 years. Faculty members at the University of Bielefeld this week boycotted classes to protest the new rule, which lawmakers approved in December and German President Johannes Rau will sign soon.

Currently, would-be professors face some time limits on tenure-seeking and temporary research contracts, but a switch to a different institution restarts the clock. Under the new rules, researchers who don't find permanent posts within the qualification period—up to 15 years for medical scientists—would have to try to extend their contracts under general employment law or leave. Backers say the limits will bring new blood into academia and prevent institutions from exploiting temporary researchers.

But the Bielefeld protesters say the new deadlines are unrealistic given the scarcity of permanent posts. And they fear that thousands of contract scientists will lose their jobs under the law. University administrators are calling for a phase-in period that gives threatened researchers more time to adjust. German officials have yet to respond to the idea.

**About-Face** The U.S. military is planning to surrender a long-running HIV research program to civilian bosses, according to scientists. Caltech president David Baltimore, chair of the AIDS Vaccine Research Committee of the National Institutes of Health, said at a meeting this week that the Bush Administration has decided to transfer military HIV research—including a $40 million Army vaccine trial—to the Department of Health and Human Services. A Pentagon spokesperson declined comment, but an Army vaccine researcher attending the meeting confirmed the plan. Although similar past efforts were shelved, "this time it's going to stick," the researcher predicted. He said the decision was made 4 January at "a very high level."

AIDS is a significant problem in the U.S. military: HIV infects about 500 soldiers in active and reserve forces each year. But Secretary of the Army Thomas White ruled in a memo last year that studying HIV was a "nontraditional" military activity (*Science*, 20 July, p. 404). Congress still must approve the shift, which is expected to be included in the 2003 budget proposal the president will release on 4 February.

**Contributors: Martin Enserink, Katie Greene, Adam Bostanci, Eliot Marshall**