of Infectious Diseases in Fort Detrick, Maryland, is also "not completely convinced" that the Aralsk strain is an unknown, exceptionally virulent strain, in part because of the small numbers on which Zelicoff based his conclusions.

Such questions could be resolved by studying the strain or tissue samples from the 1971 outbreak, which Zelicoff is convinced are stored somewhere in Russia. But when he tried to enlist his counterparts at VECTOR, the biodefense lab in Siberia where the Russian smallpox isolates are kept, they initially denied any knowledge of the incident, he says. Only after announcing that he would go public did they agree to look in their freezers.

Zelicoff and Jahrling find this reticence troubling—especially because U.S. financial support keeps VECTOR and several other former Soviet bioweapons labs running, and mutual visits have fostered close ties between the former enemies' scientists. "These people are my friends," says Zelicoff, "and yet it appears that they are lying."

–MARTIN ENSERINK

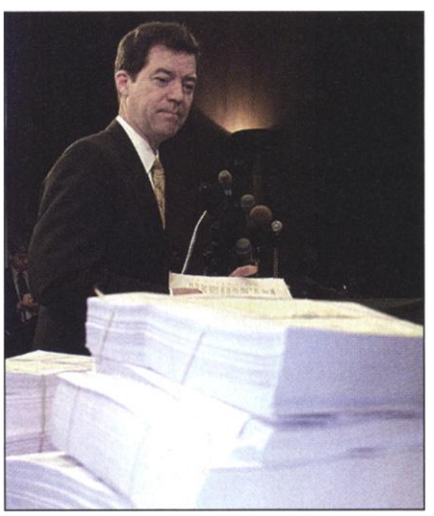
CLONING

Moratorium Replaces Ban as U.S. Target

Biomedical research advocates appear to have won a major victory in the U.S. Senate. Senator Sam Brownback (R–KS) last week announced that he was abandoning his efforts to persuade the Senate to pass a bill outlawing all human cloning—including some types of research aimed at developing new medical treatments. Instead, Brownback says he will work to win congressional approval for a 2-year moratorium on such work. But critics say even that step would cause unacceptable delays for studies that could result in important medical benefits.

Science advocates are pleased with the latest turn of events, but they don't plan to pack up and go home. "We've made great progress, but there is a very long way to go," says Kevin Wilson of the American Society for Cell Biology, one of many research groups opposing Brownback's bill. And Brownback's allies, who just months ago seemed likely to prevail, promise that "the issue isn't going to go away. There is going to be a sort of guerilla campaign now," says Nigel Cameron of the Council for Biotechnology Policy, a conservative think tank in Reston, Virginia.

For months, senators and science lobbyists have been preparing for what was expected to be an emotional and historic debate over how the government should regulate cloning, an array of techniques that can produce genetically identical embryos. The predebate tension was heightened by reports that some scientists were on the road to cloning humans. Last summer, the House of Representatives passed legislation that would make it a criminal offense to engage in either reproductive cloning or so-called therapeutic cloning, in which scientists would transplant the nucleus from an adult cell into an embryo to produce genetically matched cells that might be useful for medical treatments. Brownback sponsored a similar bill in the Senate. But biomedical researchers and patient groups felt that Brownback's bill went too far. Instead, they supported a competing proposal that would ban reproductive cloning but allow related research to continue with greater regulation (*Science*, 10 May, p. 997).



Strategic retreat? Senator Sam Brownback now says he'll settle for cloning moratorium.

Brownback, who had the backing of several conservative groups and President George W. Bush, once appeared to have the votes to pass his bill. But a broad coalition of research and patient groups fought back with an arsenal that included television ads and Capitol Hill visits from Hollywood stars, Nobel Prize–winning scientists, and children suffering from currently incurable conditions. Their message: Don't lump therapeutic research in with the reproductive cloning ban. The tide turned in their favor last month after Senator Orrin Hatch (R–UT), a leading antiabortion conservative, announced that he would oppose Brownback's bill.

Last week, Senate leaders seemed close to a deal to bring the dueling bills to a vote. But negotiations collapsed after neither side could show that it had at least the 60 votes needed to overcome procedural hurdles and bring their bill to a vote. As a result, Senate Majority Leader Tom Daschle (D–SD) put the gridlocked issue aside.

The move angered Brownback, who told reporters last week that opponents—including Daschle—had set ground rules that were "stacked ... against me." He has since moved—so far unsuccessfully—to attach pieces of his bill, including a cloning moratorium and a ban on cloning-related patents, to unrelated bills before the Senate.

Brownback's opponents have vowed to block a moratorium. "A moratorium of a year or two may not seem like much ... but it could mean the difference between life and death for a patient with Parkinson's disease," says Senator Edward Kennedy (D–MA), alluding to the high hopes that some patient groups have for therapeutic cloning. "From the science community's perspective, a moratorium equals a ban," adds Wilson. Some observers say that Brownback's tactics reflect his growing desperation. "The fact that he has fallen back to the idea of a 2-year moratorium suggests that he can't find the votes he needs," says Pat White of the Federation of American Societies for Experimental Biology.

The current stalemate doesn't bother White and other science lobbyists. "[Having] no bill is better than [passing] Brownback's bill," says one. However, the inaction also leaves in limbo the one issue on which all sides can agree—the need to ban human reproductive cloning.

–DAVID MALAKOFF

RADIOLOGICAL TERRORISM

New Effort Aims to Thwart Dirty Bombers

CAMBRIDGE, U.K.—Russia and the United States have agreed to join forces on an unprecedented effort to hunt down stray radioactive materials—the potential stuff of dirty bombs—across the former Soviet Union. Under the agreement, expected to be announced next week, Russia will provide information on "orphaned" sources that could

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pose a threat, and the U.S. Department of Energy (DOE) will provide initial funding of roughly $40 million over the next 2 years to track them down. Lending extra urgency to the initiative—which will be organized and managed by the International Atomic Energy Agency (IAEA) in Vienna, Austria—are revelations about the legacy of a secret Soviet research program to spray radioactive cesium on agricultural fields.

Because there are "literally millions" of radiological sources that could be used in a dirty bomb, "it is crucial to focus limited resources on those that could pose the most dangerous potential terrorist threat," says Matthew Bunn of Harvard University's Belfer Center for Science and International Affairs. "Russian openness on data about how many sources of what types were produced, and where they went, will be crucial to success."

The hunt is on. These hot Georgian generators raised dirty-bomb fears.

Vague fears that a terrorist might try to concoct a dirty bomb from radiological materials and conventional explosives gained a measure of credibility last week, when the U.S. government trumpeted the news that it had foiled an alleged al Qaeda plot to steal radioactive materials from an undisclosed U.S. facility. Far more worrisome to many observers, however, is the possibility that terrorists could obtain stray radioactive materials in former Soviet republics. The magnitude of this threat is unknown, mainly because Russia has not been forthcoming about the Soviet nuclear legacy out of fears that it could be held liable for materials outside its borders after the Soviet Union dissolved, says IAEA's Abel Julio González. At the same time, the U.S. government has focused on the threat posed by former Soviet fissile materials.

But the demands for better information grew urgent after the 11 September attacks. "The U.S. got very nervous" about radiological sources, says Kenneth Luongo, executive director of the Russian American Nuclear Security Advisory Council in Washington, D.C. According to Bunn, DOE launched a series of classified studies on the impact of potential radiological terrorist attacks and assessments of which materials posed the most serious threats. Ratcheting up anxiety levels was the recent discovery of Soviet-made thermoelectric generators packed with strontium-90 that IAEA and the Republic of Georgia recovered last February near the breakaway Abkhazia region (*Science*, 1 February, p. 777).

A newly recognized threat could come from loose cesium chloride. The radioactive form of this salt has a variety of uses, including sterilizing medical supplies, and is kept under strict control because it is manufactured as a talcumlike powder that's easy to disperse. González told *Science* that IAEA has learned from reliable Russian sources that the Soviet Union ran a secret program in which farmers spread radioactive cesium chloride powder on their fields. Experts speculate that the purpose of the program, code named Gamma Kolos (*kolos* is Russian for "ear," as in ear of corn), was to see if the powder would alter germination rates or induce beneficial mutations in corn. At least four trucks packed with the substance turned up recently in Moldova, a tiny and impoverished former Soviet republic, and recent photos of similar trucks have surfaced in the Republic of Georgia. The cesium-137 in each truck has an activity of about 3500 curies—"a very significant amount," notes González.

As scary as that sounds, Bunn and others warn that stepped-up efforts to track down radiological sources should not come at the expense of securing "hotter" fissile materials that could be used to create far more devastating nuclear bombs. "Radiological terrorism could be expensive to clean up, but it would not mean tens of thousands of people dead and the heart of a major city incinerated in a flash," Bunn says. But the dirty bombs are easier to produce—and the threat is finally being taken seriously. **–RICHARD STONE**

GERMANY

Gruss Takes Max Planck Helm

HALLE AN DER SAALE, GERMANY—Peter Gruss's honeymoon period as president of Germany's premier research organization, the Max Planck Society (MPG), could not have been shorter. He spent his first full day on the job waiting to hear whether he would have to rein in the organization's budget. But discussions on Monday between the federal and state governments eased what Gruss called his "first worry": The society got a 3% budget increase. MPG was spared, at least for now, from the nationwide belt-tightening that most German agencies are expecting in response to the sluggish economy.

Observers had already predicted that flat

ScienceScope

France's High Flyer French conservatives are riding high after their crushing victory in France's 16 June legislative elections. So it's not surprising that Prime Minister Jean-Pierre Raffarin reached for the stars in choosing a new science chief. Claudie Haigneré, Europe's only woman astronaut and a veteran of missions to the Mir and international space stations, has been tapped as minister of research and new technologies. She replaces interim research chief François Loos and will report to philosopher Luc Ferry, who was earlier named head of a "superministry" for youth, education, and research.

The appointment puts Haigneré "in a key position to shape the future of Europe's science and technology," says Antonio Rodotà, director-general of the European Space Agency. But French researchers say it's too early to know whether Haigneré—a doctor and neuroscientist who commanded a Soyuz space capsule on its return from Mir in 1999—will be able to pilot France's research effort out of its current financial doldrums. Indeed, some scientists say they are keeping a closer eye on newly appointed finance minister Francis Mer. The former steel industry executive is a well-known advocate of research and development spending. Says the head of one major research institute: "I am not too worried about the new government—at least not yet."

Thinking Ahead Congress hasn't yet finished work on the 2003 budget, but the Bush Administration is already thinking about adding some "life" to its 2004 request. The White House budget office late last month released its annual budget guidance to research agencies, and "molecular-level understanding of life processes" is one of six areas—and the only new idea—identified as a priority.

Agency officials are just beginning to work out what the bioscience initiative might look like, who would be involved, and how much it might cost. "We're in the brainstorming phase," says one National Institutes of Health researcher. The other priorities are continuations of current multiagency initiatives, ranging from homeland defense and nanotechnology to information technology and climate change.

Whatever plan emerges later this summer, the White House insists it must be "relevant" to national needs, have measurable performance criteria, and be funded through a competitive process.

CREDITS: (TOP TO BOTTOM) IAEA; ESA/CNES