

arrest; researchers then determine whether it induces blood flow. "It can't inflict pain," explains Lee Parmley, interim chair of critical care and the leader of the study.

The second and third subjects in the Pasqualini team's study are not brain dead but "nearly dead"—unconscious patients on ventilators with failing organs but continued brain activity. This set prompted additional scrutiny to ensure respect for the patients' wishes.

Although the team has published results on just one subject, scientists such as McDonald are impressed. The group homed in on certain sets of peptides that share similar amino acids, including one that appears specific to prostate blood vessels. But uncertainties remain. Due to their grave condition, these subjects may not be broadly representative, says UCSF ethicist Bernard Lo. In addition, the sheer number of peptides infused could interact with each other to skew results. Arap says that double-checking against other tissue samples to confirm results suggests that thus far, these problems haven't surfaced.

Meanwhile, the biomedical community is notably silent, says Michael DeVita, a University of Pittsburgh physician. DeVita and three colleagues are planning a presentation at a conference this fall, where they will explore how the dead, on and off life support, may appropriately be used in research—and how they may not. —JENNIFER COUZIN

## NUCLEAR HISTORY

### Letters Aver Physicist Supported Nazi Bomb

For more than half a century, historians have speculated about a private conversation that took place in September 1941 between German physicist Werner Heisenberg and Danish physicist Niels Bohr. Long-secret letters released on 6 February by the Niels Bohr Archive in Copenhagen finally provide an answer. They flatly contradict claims made by Heisenberg after the war that he told Bohr he intended to subvert the Nazi bomb program from within.

Eighteen months after German troops occupied Denmark, while the Nazi war machine was still crushing all in its path, Heisenberg traveled to Copenhagen to see his former mentor, Bohr. The two Nobel laureates talked in private, and Heisenberg said something about nuclear fission that so disturbed Bohr that the Dane abruptly ended both the exchange and their long friendship.

Heisenberg later implied he had tried to signal that he knew it was possible to make an

atomic bomb, but that he would subtly sabotage the German drive to do so. Bohr misunderstood his intentionally oblique language, Heisenberg said in a letter published in 1957 in Robert Jungk's history of atomic weapons, *Brighter Than a Thousand Suns*. Bohr disagreed with this account and drafted a letter to Heisenberg to set the record straight. He never posted the letter, however, and it surfaced only after Bohr died in 1962, folded into his copy of Jungk's book. The letter was to have remained sealed in the Bohr archive until 2012, but the Bohr family agreed to release it and 10 other secret documents ahead of schedule in response to the intense interest sparked 4 years ago by *Copenhagen*, the award-winning play by writer Michael Frayn that speculates about what the two men said. The archive published the documents on the Internet ([www.nba.nbi.dk](http://www.nba.nbi.dk)).

In the letter found in the book, Bohr writes: "You spoke in a manner that could only give me the firm impression that, under your leadership, everything was being done in Germany to develop atomic weapons and that you said that there was no need to talk about details since you were completely familiar with them and had spent the past two years working more or less exclusively on such preparations." In another letter, Bohr explicitly repudiates Heisenberg's contention that he implied he would undermine the Nazi bomb program. "It is therefore quite incomprehensible to me," Bohr writes, "that you should think that you hinted to me that the German physicists would do all they could to prevent such an application of atomic science."

Of course, the letters provide only Bohr's recollection of the conversation, says Gerald Brown, a physicist at the State University of New York, Stony Brook, who knew both men. "I don't think Bohr understood what Heisenberg was trying to say," Brown says. Heisenberg, who died in 1976, had no reason to endanger himself by revealing the Nazi nuclear research program unless he was try-



**Fallout.** Werner Heisenberg (left) and his mentor Niels Bohr, shown here in 1934, later split over German A-bomb research.

## ScienceScope

**Northern Innovation** Will the rhetoric match the reality? That's what Canadian scientists are asking after Industry Minister Allan Rock (below) unveiled a 10-year innovation plan this week. The long-overdue white paper affirms a government commitment to double annual R&D spending, to \$9.2 billion, by 2010. It also backs greater commercialization of publicly funded academic research and at least 10 Silicon



Valley-like "technology clusters." But academia must "more aggressively" contribute to industrial innovation if it wants more cash, the plan says.

The white paper kicks off 7 months of meetings leading up to a national innovation summit in October. Robert Giroux, president of the Association of Universities and Colleges of Canada, says that "the real test will be whether the government will be prepared to properly fund these initiatives."

**Never Too Old** Japan's rigid retirement rules have allowed Singapore to recruit an entire top-notch research lab, boosting the tiny nation's efforts to become a biomedical power. Molecular biologist Yoshiaki Ito, one of Japan's top cancer researchers, last week announced that his 10-person team at Kyoto University will soon move to the National University of Singapore. Ito will use a joint appointment at the Institute of Molecular and Cell Biology and the medical school to launch an Oncology Research Institute, another piece of Singapore's \$1-billion-a-year investment in the life sciences.

Ito hopes his move will help shake up Japan's national universities, which require professors to retire in their early 60s. "I want to show that productivity [can extend] beyond retirement age," he says.

**No to Lab** Animal-rights protesters have blocked the development of a new primate research laboratory in Cambridge, U.K. Local officials last week rejected the University of Cambridge's request for a permit to plan the new center after police leaders said it might cost too much to protect the facility from protesters. The British Union for the Abolition of Vivisection and other groups had rallied against the lab. The decision sets a "worrying precedent," says the Research Defence Society, an advocacy group. The university may appeal, saying the setback could hamper its neuroscience program.

**Contributors:** Eliot Marshall, Constance Holden, Wayne Kondro, Dennis Normile, Anna Baynham

ing to deliver a deeper moral message, says Thomas Powers, author of *Heisenberg's War: The Secret History of the German Bomb*. "He thought that he got the word out in some form or another," Powers says. "But Bohr makes it clear he didn't hear a thing."

However, Hans Bethe, a physicist and Nobel laureate at Cornell University who worked on the Manhattan Project, says he no longer believes that Heisenberg tried to make only a nuclear reactor. "The letter changed my view," Bethe says. "It seems that in 1941 Heisenberg wanted to build a bomb." After the war, Heisenberg had more reason than Bohr to "misremember" the facts when recounting the meeting, says Gerald Holton, a physicist and historian of science at Harvard University. "Niels Bohr had no reason to say something that wasn't true," Holton says, "whereas Heisenberg had a real problem after the war, namely, explaining why the German group failed to do what they set out to do."

If Heisenberg was working in earnest on the German bomb effort, then his purpose in visiting Copenhagen was likely more personal than political, Bethe says. The Nazis threatened Bohr, whose mother was Jewish, and Heisenberg must have known that his visit would help secure Bohr's safety. "He was convinced that Germany would win the war," Bethe says, "and he wanted Bohr and his institute to survive."

—ADRIAN CHO

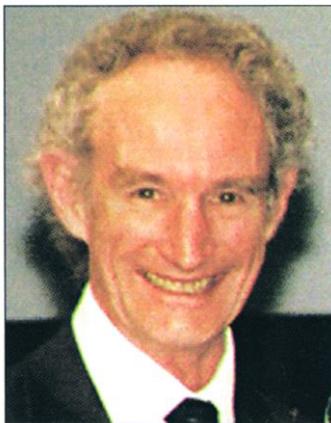
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## UNITED KINGDOM

### Parliament Takes Aim At Royal Society

CAMBRIDGE, U.K.—A showdown is looming between Britain's oldest and most respected scientific institution and the U.K.'s House of Commons. Responding to long-standing concerns over elitism and discrimination against women at the Royal Society, the Commons' Select Committee for Science and Technology has launched a probe of how the society and similar institutions should use public money and how they elect members.

The Royal Society, founded in 1660, received \$37 million from the government last year, most of which it spent on postdoctoral research fellowships and travel grants. It also organizes meetings, publishes journals, and acts as an independent "voice of science" for the government. Each year, the soci-



**Search me.** Robert May welcomes the Commons' inquiry.

ety bestows lifelong membership on 42 new "fellows." But despite a policy of equal opportunity, only 44 of its present 1216 fellows are women. Moreover, 62% of them are based in London, Oxford, or Cambridge, home to the country's top universities.

Select Committee chair Ian Gibson, former dean of biology at the University of East Anglia in Norwich, says he wants to find out why the society's fellows do not reflect the makeup of the wider scientific community. He also wants to ensure that there isn't duplication of effort among the Royal Society, the Royal Academy of Engineering, and other learned societies in areas such as the popularization of science. "That outcome includes the possibility of more money for learned societies," he says. His goal is to achieve "a complete revamp and modernization" of the Royal Society.

Robert May, president of the Royal Society and former government chief scientist, told *Science* he acknowledges that the society is "working against the pyramid" of gender inequality and is actively trying to identify women scientists who may have been overlooked. It has also recently changed its nomination rules: Starting this year, a candidate needs to be nominated by only two fellows instead of six, which may make it easier for women to be nominated. "We also try to have women on all our committees, but that turns out to be a burden for [the female fellows], because there are so few," says May. However, he says, "we will not have different standards of election [for men and women]."

Early reaction from scientists supports that view. Plant scientist Lorna Casselton, a Royal Society fellow at Oxford University, agrees that doctoring the selection process to favor women would be unacceptable: "I don't think women would like to see double standards applied." All the female fellows contacted by *Science* stressed that they had never experienced or seen any discrimination in the selection of candidates. "The problem is with society, not with the Society," says physiologist Frances Ashcroft, a fellow at Oxford University. Fewer women follow careers in science, and the proportion of women in the Royal Society is the same as the proportion holding scientific chairs in British universities, she says.

The Select Committee intends to call the Royal Society and other societies to give evidence after March. It will be an "interesting battle," says Gibson. But he may have little power to influence the inner workings

of the Royal Society. "Once the committee has discovered how we elect fellows, we will welcome its ideas," counters May.

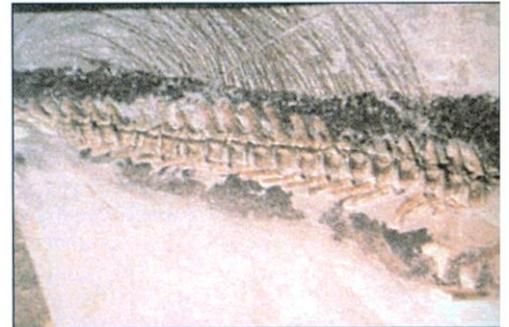
—ADAM BOSTANCI

With additional reporting by Anna Baynham.

## PALEONTOLOGY

### Tug-of-War Over Mystery Fossil

FRANKFURT, GERMANY—Another blockbuster dinosaur find from China has sparked a disagreement between leading paleontologists in Germany and China. Last



**A tall tale.** The disputed psittacosaur and its tail filaments.

week, Friedrich Steininger, director of Frankfurt's Senckenberg Natural History Museum, tried to clear the air over his museum's purchase of a mysterious fossil amid claims that it was smuggled out of China illegally. But Chinese paleontologists insist that the specimen must be handed back. "It is more than clear that Chinese law forbids such exports of important vertebrate fossils," says paleontologist Zhou Zhonghe of the Institute of Vertebrate Paleontology and Paleoanthropology (IVPP) in Beijing.

One thing not in dispute is that many scientists are clamoring to see the find. The almost complete psittacosaur—a bipedal plant eater that's the size of a large dog and has a parrotlike beak—has a tuft of filaments on its tail that resemble a porcupine's quills. This is the first time such adornments have been found outside the theropods, the group that includes large bipedal carnivores such as *Tyrannosaurus rex*. "The discovery of these structures will certainly change the way we look upon the [skin] of dinosaurs," says Gerald Mayr, a paleornithologist at the Senckenberg.

The fossil took a circuitous route to the Senckenberg. It first surfaced in 1997 at the Tucson rock show, a major marketplace for fossils and minerals. The following year the fossil was sold by a U.S.-based fossil dealer to a pair of European dealers, who arranged to have it exported legally under U.S. law. At the time, the psittacosaur bones were

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