simply have been afraid to ask McKeon for permission to send materials to others. And many scientists say young researchers are not always aware of the intricate laws governing commercial applications of their work. "Intellectual property in the United States is a bit of the Wild West," says David Zapol, who co-chairs a Web site set up to help Hiroaki Serizawa, a researcher accused last year of helping a colleague steal lab secrets. To Zapol, the new case smacks of racial profiling of Asians.

Next week the government will seek to extradite the defendants to Massachusetts, the first step in preparing for a trial. The prospect of a courtroom battle disturbs Wang, who says, "I don't think we want the federal government to sniff around in our business." In the meantime, the case might prompt postdocs and their mentors to re-examine who owns their work.

–ANDREW LAWLER

PALEONTOLOGY

China Regains Fossils Seized in California

BEIJING—Fourteen tons of Chinese fossils are back in their native country after a failed attempt to smuggle them into the United States. The shipment, which includes a 225-million-year-old ichthyosaur and a large number of exquisite crinoids—a kind of echinoderm called a sea lily—dating from the same period, arrived here earlier this month after being seized a year ago in San Diego, California. Chinese officials described the incident for the first time on 11 June.

The reshipment, which Chinese officials say is the largest of its kind, is part of the country's ongoing campaign to protect its cultural and scientific relics against looters. "They are very precious fossils," says Li Jianjun, executive deputy curator of the Beijing Natural History Museum, where the fossils are now housed. "To our joy, we have found that 90% of the fossils" have not been tampered with.

Almost all of the 110 pieces of fossils, which arrived in 93 boxes, are believed to have originated in Guizhou Province in southern China. They date from the early part of the late Triassic period, 227 million to 220 million years ago, when reefs in the region were drowned by anoxic, 500-meter-deep water—ideal conditions for preservation. "As crinoids go, they're pretty stunning," says paleontologist Chris Maples of Indiana University, Bloomington. Crinoids are relatively rare in Triassic rocks, and the meter-tall specimens of the enigmatic *Traumatocrinus* are important for evolutionary studies because the group survived the Permian mass extinction some 20 million years earlier, notes Dan Lehrmann, a geologist at the University of Wisconsin, Oshkosh. In addition to the 4- to 5-meter-long ichthyosaur and the crinoids, the cache includes 10 specimens of a marine reptile called *Keichousaurus* and some fish fossils.

Science was not able to piece together the circumstances that led U.S. officials to act. Officials from China's State Administration of Cultural Heritage say that the fossils were seized in June 2001 by the U.S. Customs Service as they arrived in San Diego and that customs officials contacted Chinese diplomats in New York to arrange for the return of the material. An agency spokesperson declined to provide any information about the case, however, saying that "it is the long-standing policy of the U.S. Customs Service to not discuss matters that may relate to investigation."

The fossils will be stored in a just-completed warehouse and exhibited once they are curated, says the museum's Li, who adds that the fossils will also be made available to outside collaborators for comparative studies. In the meantime, Chinese paleontologists welcome the windfall. "I am happy to see them back," says Wang Xiaofeng of the Yichang Institute of Geology and Mineral Resources in Hubei Province. Wang's team has studied fossils of crinoids, *Keichousaurus*, and other marine creatures at a site in the Guanli area of Guizhou.

–DING YIMIN AND ERIK STOKSTAD

Ding Yimin writes for *China Features* in Beijing.

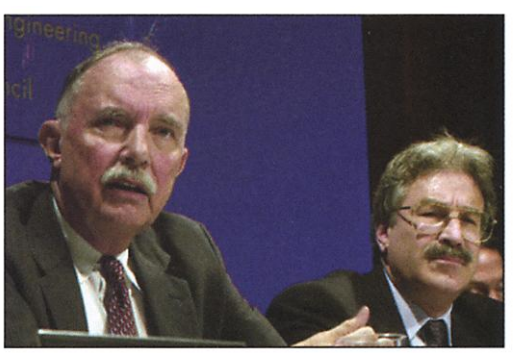
Back home. The U.S. government has returned to China these crinoids and 14 tons of other smuggled fossils.

CREDITS: (TOP TO BOTTOM) RICK KOZAK; *CHINA FEATURES*

COUNTERTERRORISM

Academies Weigh In on Homeland Defense

Get better organized, get more outside help, and get going—immediately. That's what the U.S. government must do to develop and deploy the technologies needed to fight terrorism, says a blue-ribbon scientific panel this week in a report likely to influence the shape of the Department of Homeland Security, proposed earlier this month by the White House (*Science*, 14 June, p. 1944). In particular, the panel says, the government needs a new institute to help it chart and coordinate counterterrorism research.



Terror talk. Lewis Branscomb (left) and Richard Klausner see science playing a major defense role.

That idea and other recommendations are getting guarded reviews in Congress. But the chair of the House Science Committee, before which the report was unveiled this week, welcomes the report. "This report helps ensure that R&D stays high on the homeland defense agenda," says Representative Sherry Boehlert (R–NY). Some biomedical researchers, meanwhile, are criticizing the White House's blueprint for the department, saying that it could complicate antibioterrorism efforts.

The report* is the first public product of a crash effort by the U.S. scientific community to respond to the 11 September terrorist attacks. On its own initiative—and using its

* *Making the Nation Safer: The Role of Science and Technology in Countering Terrorism* (National Academy Press, 2002).

own money—the U.S. National Academies of Sciences and Engineering and the Institute of Medicine asked more than 150 researchers to assess the nation's vulnerability to terrorist attack and to identify the technologies, research, and policy changes needed to boost defenses. A 24-member panel, led by former National Cancer Institute head Richard Klausner and science policy specialist Lewis Branscomb of Harvard University, distilled their advice into a 382-page report covering everything from safeguarding nuclear weapons and water supplies to improving air-filtration systems and chemical sensors.

There are seven ways the government can use existing technologies to enhance security, the panel concludes. They include deploying better systems for tracking and protecting nuclear and other materials—such as chlorine gas—that could be used as weapons, boosting the production of bioterror treatments, and improving communications among emergency personnel. A number of these efforts are already under way, the panel noted.

A list of areas in which research is "urgently" needed includes the development of a more resilient electric-power grid, better computerized tools for intelligence analysts and emergency officials, and new methods and standards for safeguarding and decontaminating buildings. The government also should fund more social science studies on how people respond to emergencies, says the report, and recruit "credible" spokespersons to keep the public informed.

Current efforts to coordinate counterterrorism research, the report found, are "not appropriately organized." One improvement would be a high-level research czar at the new department. Another would be the creation of a Homeland Security Institute, an independent nonprofit group that could hire specialists and carry out studies quickly. "The government needs greater access to expertise," says Klausner.

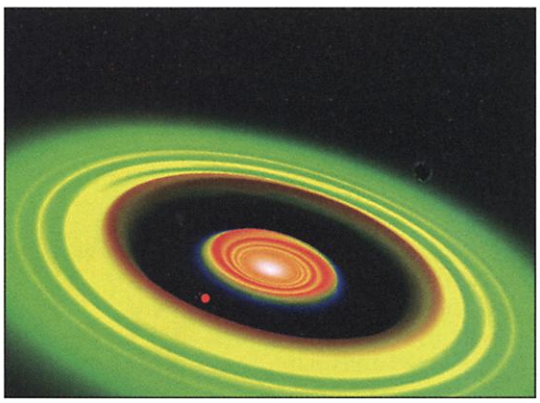
The first response to the report is likely to come from Congress, which is also getting advice from other scientists. The American Society for Microbiology, for instance, last week criticized the Administration's plan to give the proposed department authority over bioterrorism-related research and regulatory programs currently run by the National Institutes of Health and the Centers for Disease Control and Prevention. The extra layer of bureaucracy, the group says, would "create unpredictability … [and] divert monies from research." Both the White House and Congress have promised to complete work on the department before the end of the year.

–DAVID MALAKOFF

EXOPLANETS

Winking Star Unveils Planetary Birthplace

Astronomers want to know how we came to be, how a life-friendly chunk of rock came to form about our star. Lingering clues from our solar system are proving subtle and hard to read (*Science*, 31 August 2001, p. 1581). And disks of dust and gas spinning around other stars where planets might be forming today are still little more than fuzzy, unchanging patches of light in even the most powerful telescopes. But a group of astronomers has stumbled on a newborn star whose protoplanetary disk has fortuitously set up a monitor of its own innermost workings. By simply measuring the star's brightness, researchers are seeing how a protoplanetary disk works. It's the closest, most detailed look at the cauldron of planet formation anyone is ever likely to have.



Planetary pinwheel. Wave crests (red) churned by a growing body may block starlight.

CREDIT: GEOFFREY BRYDEN/JPL/NASA

As astronomers know from observing nascent stars, a star forms in the midst of a ball of dust and gas, the remainder of which can collapse into a spinning disk resembling the rings of Saturn. Planets could agglomerate in such disks, but the disks seen so far have been nearly featureless and unchanging on human time scales, with any protoplanets invisibly small. But in 1997, astronomy students led by astronomer William Herbst of Wesleyan University in Middletown, Connecticut, noticed one new star—just 3 million years old versus the sun's 4500 million years—that faded dramatically every few weeks to 4% of its normal brightness.

Something, it seemed, was periodically blocking the light of star KH 15D in the constellation Monoceros. After a recent international observing campaign organized by Herbst and graduate student Catrina Hamilton of Wesleyan, "now we're sure we can predict what it's going to do," Herbst said last week at the "Scientific Frontiers in Research on Extrasolar Planets" meeting in Washington, D.C.

ScienceScope

Statistical Victory The Supreme Court has successfully waded through another census-related statistical morass. In a 5–3 decision last week, the justices declared that the statistical technique known as "hot-deck imputation" is constitutionally acceptable in creating congressional districts. The ruling protects a mainstay method of the modern U.S. census and slaps down an effort by Utah to claim a seat that had been awarded to North Carolina.

Two years ago, Census Bureau officials announced that Utah was 900 citizens shy of getting a fourth seat as part of the decadal legislative reshuffling. Utah then sued the bureau, contending that its use of hot-deck imputation, which allows counters to fill in missing or inconsistent data, fell afoul of a 1999 Supreme Court ruling that outlawed statistical "sampling" to apportion congressional seats (*Science*, 1 February, p. 783). But a court majority found that the hot-deck method is distinct from sampling, so the census result stands.

Many statisticians say the court did the right thing. A census conducted without hot-deck imputation, they note, would require a statistical assumption, something the court was trying to avoid in the first place.

Name That Ship Canada has agreed to spend $24.5 million to turn an icebreaker into the country's first Arctic research vessel. It's one of nine infrastructure awards, totaling $130 million, announced last week by the Canada Foundation for Innovation to help the nation's scientists participate in international projects.

The retrofit of the 42-berth ship will add current meters, biological sonars, sediment traps, and a multibeam system to scan the bottom of the Arctic Ocean, allowing climate change researchers from around the world to conduct studies. One planned mission will be to assess the ecological impact of a reduction in the McKenzie Ice Shelf. Scientists would also like to rechristen the ship, now named for the famously unlucky Arctic explorer Sir John Franklin, who in 1847 led two ships and a crew of 134 on a search for a Northwest passage but disappeared. "That's why we want to change the name," laughs principal investigator Louis Fortier, an oceanographer at the University of Laval in Quebec.

Other projects include one to transform the Sudbury Neutrino Observatory in Ontario into an international lab for underground science and a beamline at the Spallation Neutron Source being built at Oak Ridge National Laboratory in Tennessee.