gested watermelon-sized seeds. That's a new item on the menu of Cretaceous birds. Specimens in Spain contain crustaceans, and North American fossils dined on fish, but *Jeholornis* is the first proven seed eater. "The main importance is that it increases our knowledge of the ecological diversity of early Cretaceous birds," says paleontologist Tom Holtz of the University of Maryland, College Park. Adds would-be time traveler Chiappe: "Bird watching back then would have been a lot of fun."

–ERIK STOKSTAD

INTELLECTUAL PROPERTY

U.S. Asks for Delay in Harvard Theft Case

BOSTON—Government prosecutors surprised a court last week by seeking a 6-month delay in proceedings against two biologists accused of stealing research secrets from Harvard University. Observers say the move, which left the judge flabbergasted, suggests that the government is not yet ready to take its case to trial.

Jiangyu Zhu and Kayoko Kimbara were jailed last month after an FBI complaint alleged that they conspired to steal research materials and secrets when the two, who are married, left the lab of cell biologist Frank McKeon at Harvard Medical School in 1999. Released on bail, they appeared on 17 July at a 10-minute hearing here in U.S. District Court. The prosecutors and defendants have both agreed to a 180-day continuance, which prosecutor Robert Wallace says will allow the two sides "to discuss the case and see if [there is] any resolution." He declined further explanation of why the government supports a delay.

Legal steps. Kayoko Kimbara (*top*) and Jiangyu Zhu on the day of their hearing in Boston.

"This is an extraordinarily unusual request," said presiding Judge Robert Collings, adding that he had not encountered anything similar in 20 years on the bench. The government normally has 30 days after an arrest to seek an indictment.

The FBI complaint charges the couple with shipping material of significant commercial value to Japan and mailing reagents and other materials from Harvard to Zhu at the University of Texas, San Antonio, where he had a brief postdoctoral appointment. Their intent, says the complaint, was to use Harvard trade secrets for their own profit (*Science*, 28 June, p. 2310). Last week, Nagoya, Japan–based Medical and Biological Laboratories Co. revealed that Zhu sent the company genetic material and asked it to make an antibody that might hinder rejection of transplanted organs.

In a statement, the company said it created the antibody and sent it to Zhu's Texas lab in February 2000. The company, which employs a colleague of Zhu's, says it was not contacted by the U.S. Department of Justice, which declined comment. But Harvard spokesperson Donna Burtanger praised the lab's conduct, saying that "they cooperated fully and sent everything back" to Harvard. The company also said that it has tightened up oversight of interactions with outside researchers.

In a statement released by Zhu and Kimbara's lawyers on their behalf, the researchers say that "the government did not have the benefit of hearing our position—that no crime was committed—before it acted." Spokespeople for both sides declined to say if the FBI ever interviewed the two scientists. The researchers, the statement adds, "have no interest whatsoever in wrongfully commercializing their work."

Zhu, a Chinese citizen, and Kimbara, a Japanese national, are restricted in their movements and are on administrative leave from their jobs pending investigations by their current employers, Zhu at the University of California, San Diego (UCSD), and Kimbara at Scripps Research Institute in La Jolla, California. UCSD spokesperson Kim McDonald says "nothing [Zhu] has done here leads us to question his work," and Scripps spokesperson Robin Clark says that Kimbara "will be given the opportunity" to return if the investigation finds no wrongdoing.

Zhu and Kimbara were mobbed by Japanese television reporters and photographers on entering and leaving the courthouse. A similar case last year involving researchers at the Cleveland Clinic Foundation in Ohio (*Science*, 18 May 2001, p. 1274) also received intensive coverage in Japan. The two cases have raised concern in Japan that Japanese researchers are ill prepared to cope with stricter U.S. laws on intellectual property.

–ANDREW LAWLER

NUCLEAR FUSION

Chemistry Casts Doubt On Bubble Reactions

A controversial claim that scientists had detected signs of fusion in a rapidly collapsing bubble may have further imploded this week. A new experiment that measures the energy budget of a collapsing bubble for the first time indicates that so-called bubble fusion is highly unlikely to occur.

The controversy involves a peculiar phenomenon known as sonoluminescence. If you zap a tub of liquid with sound waves in the right manner, you can "crack" the liquid, creating bubbles that contract so violently that they glow with light. Earlier this year, *Science* published a paper by engineer Rusi Taleyarkhan of Oak Ridge National Laboratory in Tennessee and five colleagues reporting the detection of neutrons that the researchers claimed were generated by a fusion reaction inside a sonoluminescing bubble in a solution of acetone. The claim was greeted with skepticism even before it was published (*Science*, 8 March, pp. 1808 and 1868).

The chemistry that goes on inside the bubbles is a mystery—particularly in single-bubble sonoluminescence, in which a solitary bubble is trapped by the acoustic waves. Single-bubble reactions are so small that "it's very tough" to detect the products that the bubbles create, says Lawrence Crum, an acoustician at the University of Washington, Seattle, and one of the first people to study single-bubble luminescence.

But Kenneth Suslick and Yuri Didenko, sonochemists at the University of Illinois, Urbana-Champaign, report in the current issue of *Nature* that they have used fluorescent dyes to measure the amounts of hydroxyl radicals (OH) and nitrite ions (NO_2^-) produced during single-bubble sonoluminescence in water—the products expected when the extreme conditions in the bubble shred water, nitrogen, and oxygen molecules. From the concentrations of these molecules created by different single-bubble sonoluminescence experiments, Suslick and Didenko were able to figure out the conditions that led to those reactions—and where the energy goes when the bubble collapses. "You get the first measure of the energy balance, a feeling for how much energy goes in and where it comes out," says Suslick. "Chemical reactions are a major mechanism for the dissipation of energy," he adds, noting that the experiment roughly matches theorists' expectations.

Suslick's work implies that—especially in a volatile liquid such as acetone—much of the energy of the collapsing bubble is dissipated by tearing molecules apart, so such an experiment is highly unlikely to

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