self." Chapela and Quist did not report performing such additional tests.

Motivated by these sorts of concerns, at least four groups of researchers—from the University of Washington, the University of Georgia, and two from Quist and Chapela's home base of UC Berkeley—sent sharply critical letters to *Nature* in December. Three referees reviewed the letters and recommended publication of one or more, accompanied by a rebuttal from Quist and Chapela. "The PCR and iPCR [inverse PCR, a variant] data presented is simply not sufficient data to warrant ANY of the conclusions of the authors," including both the presence of transgenic DNA in Mexican maize and its instability, declared the first reviewer. "*Nature* should demand that the authors retract their manuscript if they cannot demonstrate well-controlled DNA blot analyses [a common confirmatory test] documenting transgene integration events."

"*Nature* is coming under pressure to use secondary technical criticisms to discredit our main findings," responds Quist. Regarding doubts about the instability he reported, he believes that "the critique is coming from expectations" created by lab experiments "that aren't necessarily reflected in what you see when you go out in nature." To respond to criticisms, "we're discussing with *Nature* the possibility of publishing [in a reply] some new information that substantiates our findings."

(*Science* obtained three of the letters, the initial Quist-Chapela response, and some of the anonymous referee reports from sources other than their authors, who are blocked by *Nature* from discussing their critiques before publication. *Nature* editor Philip Campbell says the journal acts "as promptly as possible" on criticisms, publishing them when "appropriate.")

Surprisingly, even Quist and Chapela's most strident critics agree with one of their central points: Illicit transgenic maize may well be growing in Mexico. In May 2001 Chapela shared his initial results with the National Institute of Ecology (INE, the research arm of the Mexican Ministry of the Environment and Natural Resources) and the interagency National Biodiversity Council (CONABIO). Concerned, INE and CONABIO took maize samples from 20 random locations in Oaxaca and two in the adjacent state of Puebla. The samples were divided into two groups and independently analyzed by researchers at the National Autonomous University of Mexico and the Center for Investigation and Advanced Studies (CINVESTAV) at the National Polytechnic Institute. At a 23 January meeting in Mexico City, CINVESTAV official Elleli Huerta presented preliminary PCR findings indicating that transgenic promoters, mostly CaMV 35S, were present in about 12% of the plants. In some areas, up to 35.8% of the grain contained foreign sequences, INE scientific adviser Sol Ortiz Garcia told *Science* last week.

According to Ortiz, both the INE lab and the National Autonomous University of Mexico labs are still "double-checking" the findings. The possible corroboration, Alvarez-Buylla Roces says, is "only based on PCR tests and [is] preliminary." Indeed, says Timothy Reeves, director-general of CIMMYT, which is working with the Mexican government, the two Mexican teams are now responding to the criticism of PCR methodology by revamping their analyses to include bigger samples and more reliable tests.

Meanwhile, CIMMYT, which develops improved crops for Third World farmers, has been searching its vast storehouse of maize varieties for transgenic "contamination." By 22 February, the lab had found none, and the organization has adopted measures that it believes will prevent GM maize from entering its gene bank, preserving at least some of Mexico's maize diversity. But given the amount of transgenic maize in the United States, Reeves believes it is "very likely" that some will eventually end up growing in Mexico. For now, however, "transgenic maize in Mexico is still hypothetical."

—CHARLES C. MANN

AGRICULTURAL BIOTECH

NAS Asks for More Scrutiny of GM Crops

The U.S. Department of Agriculture (USDA) needs to strengthen its procedures for approving field tests and commercialization of transgenic plants, a National Research Council committee concluded in a report released last week. Although transgenic crops don't pose a greater risk than that of products of conventional breeding, the committee said, traits introduced by either technique can pose risks to the environment. Ultimately, it added, the potential environmental impact of conventionally bred crops should also be assessed. But for now, to bolster its regulation

CREDIT: KEITH WELLER/USDA

Look closely. An NRC panel says USDA should regulate biotech crops more rigorously.

ScienceScope

Debate Down Under Australian researchers were astonished this week by press reports that the government was considering new limits on stem cell research. The Melbourne broadsheet *The Age* reported on 26 February that senior ministers had agreed "in principle" to bar scientists from harvesting stem cells from embryos destined to be destroyed by in vitro fertilization clinics—prompting howls of protest from researchers and a hasty retreat by government officials.

Researchers said the reversal would imperil Australia's position as world leader in stem cell studies. Its scientists were among the first to isolate human embryonic stem cells, and they have produced 10 of the 73 cell lines approved by the National Institutes of Health for use by taxpayer-funded researchers in the United States. Prospects looked bright after the government spent heavily on a new tissue research center and a parliamentary panel last year recommended against restrictions.

So there was an instant uproar upon reports that the head of that panel, Minister of Ageing Kevin Andrews, had broken ranks and convinced a majority of ministers to support embryo restrictions. Andrews quickly issued a statement denying that the government had reached a decision. Still, researchers are wary. Says Martin Pera of Melbourne's Monash University: "We hope there's less to this than meets the eye."

Fish Fight South African ichthyologists are protesting a government decision to strip the name of a famous fish scientist from a prominent research center. The J. L. B. Smith Institute of Ichthyology in Grahamstown was named after the scientist who described the rediscovered coelacanth in 1938. But last year, government officials rechristened it the South African Institute for Aquatic Biodiversity, saying the new name would better reflect the institute's broader future mission.

Several institute scientists, however, are challenging what they call the "undemocratic" erasure of Smith's legacy. The name change is a "political ploy of dubious worth," ichthyologists Eric Anderson and Phil Heemstra charge in a recent open letter to members of the American Society of Ichthyologists and Herpetologists—if only because budget constraints mean the institute will remain focused on fish for the foreseeable future. Institute officials weren't available for comment, but Anderson is hoping that international pressure will convince them to restore Smith's name to prominence, perhaps as part of the titles of journals published by the institute.

University of Calgary in Alberta notes, paleontologists can put a cap on ecological questions such as how much territory a tyrannosaur could patrol in a day and how many top carnivores an area could support. Hutchinson says the technique of calculating minimum muscle mass could be used to answer other questions, such as whether sauropods or pterosaurs could walk bipedally and which early tetrapods had the strength to walk on land. –ERIK STOKSTAD

ASTRONOMY

Solar System Kicks Up Its Own Dust

An alien civilization might be able to deduce the existence of planets in our solar system by examining the infrared light emitted by a ring of dust around our sun. A team of astronomers argues that the telltale dust could not have formed without planets, and they propose that stars surrounded by similar rings may be a good place to search for extrasolar planets.

Dust beyond the orbit of Saturn was first detected in the 1970s by NASA's Pioneer 10 and Pioneer 11 spacecraft. But no one knew whether it came from inside or outside the solar system. One clue came from the realization that the dust must get replenished—otherwise, it would get sucked up by the sun or ejected from the solar system.

Markus Landgraf of the European Space Agency (ESA) and colleagues suspected that colliding objects in the Kuiper Belt—a flat cloud of debris in the outer solar system probably left over from planet formation—might be kicking up the dust. Using measurements of interstellar dust recorded by detectors aboard ESA's Ulysses spacecraft, the team determined that the grains the Pioneers had observed were too coarse to have come from outside the solar system. The only possible source is the Kuiper Belt, according to computer simulations to be published in *The Astrophysical Journal*. Landgraf's team calculates that about 50 tons of dust are created each second inside the belt—enough to maintain a dust ring that should be bright at infrared wavelengths when seen from afar. Another key signal of planets should be a distinctive pattern of gaps and edges in the dust cloud, carved out by gravitational resonances with Jupiter and other giant planets.

"It's a very interesting report," says David Trilling of the University of Pennsylvania in Philadelphia. "Looking for gaps or structures in dust disks [around other stars] is a very compelling way to look for planets." Rings of dust that emit infrared light have been discovered around a number of nearby stars, and Trilling's team has been searching for dust around more than 40 others. So far, though, no one has found stars that have both planets and a dust ring.

–GOVERT SCHILLING

Govert Schilling is an astronomy writer in Utrecht, Netherlands.

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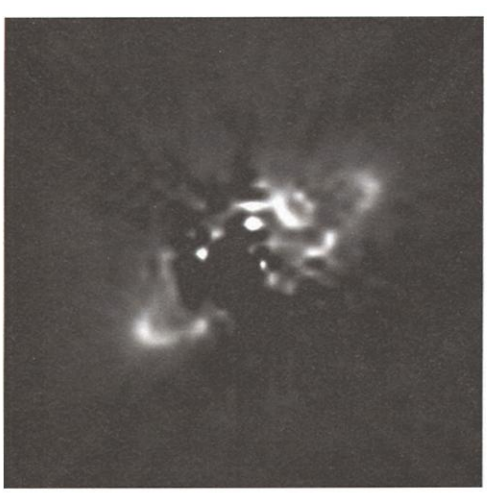

Dusty disk. Seen from afar at infrared wavelengths, our solar system might resemble star HR4796A, which also sports a bright dust ring.

JAPAN'S UNIVERSITIES

Reforms Would Loosen Bonds, Cut Safety Net

TOKYO—Japanese academics appear set to win new freedoms that would allow closer collaborations with private companies and greater autonomy in spending research grants. But they may have to pay a steep price: an end to the security of jobs for life and, perhaps, stricter evaluations of the quality of their work.

Last week, an advisory panel to the Ministry of Education, Culture, Sports, Science, and Technology recommended abolishing civil servant status for academics. The recommendation, expected to appear in a final report later this month, would grant administrators flexibility in hiring, including the option of putting staff on fixed-term contracts. If the change applies to current employees—now subject to legal debate—it could affect 60,000 faculty members and 58,000 staff at 98 national universities and 15 institutes.

As civil servants, academics enjoy lifetime employment, and the vast majority of researchers remain at one institution for their entire careers. Reformers have argued that this leads to a stagnant scientific environment. "The biggest problem of the university system is the lack of mobility [among academics]," says Shinichi Nishikawa, a molecular geneticist at Kyoto University's Graduate School of Medicine, who serves on the advisory panel.

The employment issue is the last major

ScienceScope

Patent Fight, Round 2 French, Belgian, and Dutch groups are opposing the second of three European patents awarded last year to an American biotech company for a breast cancer test. The test, marketed by Myriad Genetics of Salt Lake City, Utah, detects mutations in the *BRCA1* gene, which are responsible for more than half of all hereditary breast cancers. Opponents argue that the patents are too broad and would block the development of alternative tests. The challenge, filed with the European Patent Office in Munich on 22 February, is supported by the governments of the three countries.

Last fall, many of the same organizations—including the Curie Institute in Paris and Belgian and Dutch human genetics societies—filed a challenge to the first patent, which covers use of the gene's sequence to create diagnostic tests (*Science*, 14 September 2001, p. 1971). The second patent covers a list of specific mutations in *BRCA1* implicated in breast and ovarian cancers. The patents give Myriad "a monopoly on genetic testing anywhere and anyhow," says molecular geneticist Dicky Halley of Erasmus University in Rotterdam. Greenpeace protesters hung a banner on the patent office in Munich (above).

Myriad officials were not available for comment, but they have said that the patents are justified.

Loka Lucre Supporters of the Loka Institute are scrambling to save the nonprofit organization from a severe cash crunch. Founded in 1987, the Amherst, Massachusetts–based Loka is devoted to increasing grassroots involvement in science and technology. It has pioneered the U.S. use of "science shops," workshops designed to address local issues and attract input from community groups.

But executive director Jill Chopyak resigned last month, and the funding climate for nonprofits "has been brutal," according to a recent board statement, forcing the group to suspend operations.

Still, Chopyak believes the problems won't be "the death of Loka. The board is really committed to expanding the donor base." Directors say they want to raise $100,000 by 1 August. For the time being, Khan Rahi, who coordinates Loka's Community Research Network, will oversee the institute.

Contributors: Elizabeth Finkel, David Malakoff, Michael Balter, Andrew Lawler