

and doctors, was the question before the Supreme Court earlier this week. The case, *Kumho Tire Co. v. Carmichael*, involves a minivan that crashed after a tire blew, killing one person; Carmichael, the victim's family, presented an engineer who claimed the tire was defective. Kumho's lawyers won in a trial court, which found that the testimony failed to meet *Daubert* tests. An appeals court reversed the decision, however, finding that technical testimony based on experience should not have to meet scientific standards (*Science*, 11 September, p. 1578).

In the hearing, justices expressed a range of views. Several agreed it would be impossible to scientifically test, say, an art expert's assertion that a color in a painting was deep magenta. On the other hand, Justice Antonin Scalia echoed Kumho's argument that the tire expert's testimony should have met scientific standards because it was based on a methodology: process of elimination. The engineer had asserted that because the tire did not appear to have several indications of abuse, its failure must have been due to a defect. The court's ruling, if it issues one, is expected next summer.

Clarifying how courts should evaluate expert opinion of all stripes will not be easy, says Berger, who co-authored an amicus brief for the Carmichael side. "I'm not sure you can come up with a magic formula."

—JOCELYN KAISER

PLANETARY IMPACTS

Argentina, and Perhaps Its Life, Took a Hit

The 10-kilometer-wide asteroid that wiped out the dinosaurs and many other species 65 million years ago was just one of a steady stream of debris of all sizes that has splattered the planet. Some impacts were small, leaving no more trace than a shooting star, while other, larger ones presumably could have triggered near-global crises. On page 2061 researchers suggest that a lesser impact showered coastal Argentina with blobs of molten glass 3.3 million years ago, perhaps cooling climate and driving some of the region's mammals to extinction. But other researchers say that although the impact looks real, its connection to



Sign of a killer? The impact that forged this 2-millimeter blob of molten glass in Argentina 3 million years ago may also have caused mammal extinctions.

climate change or extinctions is doubtful.

Cratering specialist Peter Schultz of Brown University in Providence, Rhode Island, got his first clue to the impact 5 years ago on a visit to Argentina, when an interpreter mentioned odd green glass she had picked up as a child. Schultz eventually explored sea cliffs of windblown dust deposits called loess near the coastal town of Miramar, working with geologist Marcelo Zarate of the Regional Center of Scientific and Technical Investigations in Mendoza, Argentina. The cliffs expose a layer of glassy, bubble-filled slabs 0.5 to 2 meters across; called escorias locally and first reported in 1865, these rocks had been attributed to everything from lightning strikes to ancient human-tended fires.

But after close study, Schultz, Zarate, and their colleagues conclude that an impact had fused loess into glassy slabs and flung them across at least 50 kilometers of the central coast of Argentina. The glass has streaky flow patterns typical of rapidly cooled impact glass, mineral breakdown products that require temperatures even hotter than those of lightning and volcanoes, and a chemical composition resembling that of the local loess. "It's fascinating stuff," says meteoriticist and cratering specialist Theodore Bunch of NASA's Ames Research Center in Mountain View, California. "I think [the impact] interpretation is probably correct." Schultz presumes that a body perhaps a kilometer in diameter hit just offshore, producing a now-buried crater perhaps 20 kilometers in diameter.

Radiometric dating of the glass showed that the object struck 3.3 million years ago. The date of the glass layer will give paleontologists studying the region's abundant mammal fossils a long-sought benchmark in

time. But Schultz and his colleagues suggest a more provocative role for the impact. Based on the glass's radiometric age and its position in the record of Earth's flip-flopping magnetic field, they establish that the impact happened within about 100,000 years or so of an abrupt, temporary 2°C cooling of ocean bottom waters recorded in Atlantic and Pacific sediments. What's more, they say, a major, sudden extinction at about this time wiped out 36 genera of mammals, mostly kinds known only from that region. They suggest that the impact either

ScienceScope

DISCOVER EDITOR OUSTED

The heavy hand of Mickey Mouse descended on *Discover* magazine today, ousting Editor-in-Chief Marc Zabudoff. Insiders say Zabudoff was bounced after banging heads with the new head of publishing at Walt Disney Co., which bought *Discover* in 1991.

Disney managers have tightened their control of late over decisions about the design and content of the magazine, which has a circulation of 1.2 million. Staff members were irked by Disney Senior

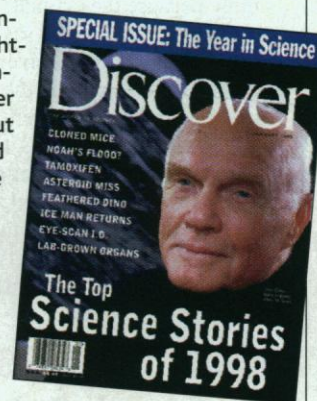
Vice President Steve Murphy's insistence that John Glenn grace the cover of their year-end January issue, which will feature the top science discoveries of 1998. Glenn's flight "didn't seem like one of the top stories of the year," says one editor. Murphy could not be reached for comment.

Zabudoff was looking on the bright side. "I get to replace frustration with mere anxiety," he says, "and that's probably a step up." His successor will be Stephen Petranek, editor-in-chief of *This Old House* magazine.

CLAMPING DOWN ON HUMAN CLONING

Britain may have discovered how to clone mammals—to wit, Dolly the sheep—but its biotechnicians should never use these skills to reproduce a human being, according to a new report from the Human Genetics Advisory Commission and the Human Fertilization and Embryology Authority.

The report says the government should enact a law outlawing reproductive cloning of humans. At the same time, it says, the law should permit scientists to clone human cells and even produce human embryos for certain types of research. After gathering comment on its proposals, "there was very little support" among the public for cloning individuals, says commission member Sir Colin Campbell, vice chancellor of the University of Nottingham. But the report noted that people did not object to cloning human cells, if aimed at treating serious illnesses.



perconductors and their quirky parents will remain one of the most enigmatic families in physics.
—ROBERT F. SERVICE

ANIMAL EXPERIMENTATION

India Backs Off on Central Control

NEW DELHI—Indian scientists are hailing a government decision to scale back a proposal for a centrally run system to regulate research involving animals. The final rules, adopted late last month, would instead place primary responsibility in the hands of animal ethics committees at individual universities and institutes, avoiding a bottleneck that scientists feared could stifle research. "I am satisfied that science will not suffer"



Keeping count. New animal care rules place responsibility in the hands of individual facilities like the National Institute of Immunology, above.

once the rules are implemented, says Pradeep Kumar Dave, an orthopedic surgeon and director of the All India Institute of Medical Sciences here.

The initial proposal, from a committee chaired by social justice and empowerment minister Maneka Gandhi, would have prohibited all animal experimentation without the explicit written approval of the committee (*Science*, 18 September, p. 1777). Gandhi, an outspoken animal rights activist, said at the time that the government needed to step in after an attempt at self-regulation, based on 1992 guidelines from the Indian National Science Academy, had failed. But her proposal kicked up a ruckus among the scientific community. Passions ran high: Immunologist Nirmal Kumar Ganguly, director-general of the Indian Council of Medical Research here, warned of "chaos and confusion leading to anarchy" if the rules were implemented without amendments.

The final rules give institutional panels the authority to approve animal experiments for entire programs and projects rather than the experiment-by-experiment basis envisioned in the initial proposal. All biomedical institutions using animals still must register with the social justice ministry within 60

days, but institutions need not wait for a response before carrying out the necessary oversight duties.

The institutional panels will be composed of biomedical scientists both from within the institution and outside, as well as a veterinarian, a nonscientist, and a government representative. The first order of business for many institutions will be to create such a panel: A recent survey revealed that only 50% of all laboratories had any form of animal ethics committee. The committees will be responsible for day-to-day monitoring of experiments, but they must report periodically to the ministry, which can suspend or revoke the license of any laboratory found wanting.

The final rules also remove a proposed ban on contract and collaborative research involving animals with overseas educational institutions, although they still prohibit contract research—such as the use of monkeys to test drugs for multinational drug companies—carried out purely for monetary considerations. It will also be more difficult for Indian institutions to import animals from overseas labs: The rules allow transfers only between labs already registered with the Indian government, in effect limiting the pool to domestic facilities.

The rules are expected to become law by the end of the month, putting an end to what Gandhi calls "rogue firms" that have ignored proper procedures for animal safety. "It's time for them to put up or shut up," she says.

—PALLAVA BAGLA

Pallava Bagla is a correspondent in New Delhi.

GERMAN RESEARCH

Extremists Steal Minister's Spotlight

It had the makings of a banner week for German science, with the new education and research minister, Edelgard Bulmahn, announcing plans to increase federal funding for research and higher education, dismantle some outmoded nuclear-power research facilities, and strengthen programs to help women and young scientists. The premiere basic-research organization, the Max Planck Society, also pitched in with a positive spin on its plans for the year ahead. But the week also saw a sharp reminder of deep divisions in public attitudes toward science: The boldest headlines went to an incident in which a prominent German researcher was placed under police protection following threats from animal rights activists.

In a speech in Bonn, Bulmahn announced that the government plans major investments and reforms in Germany's trou-

ScienceScope

NIH STAKES CLAIM FOR GENETIC DRUG DATA

The National Institutes of Health (NIH) plans to spend \$100 million over the next 5 years to secure public access to genetic data that might otherwise be locked up by drug firms. The move comes as researchers scramble to turn unprecedented knowledge of the human genome into drugs tailored to fit an individual's genetic makeup.

Later this month, NIH will unveil a plan to establish a public pharmacogenomics database holding information about individual genes and functions that could be useful to basic researchers and drug designers. It augments another NIH program, announced last month, to search for genetic variations that alter drug effectiveness. The new initiative, which will fund a network of about a dozen centers, is "very timely," says biochemist Fred Guengrich of Vanderbilt University in Nashville, Tennessee. And it will have "a real soup-to-nuts flavor," adds Rochelle Long of the National Institute of General Medical Sciences, involving researchers from a variety of disciplines working on a range of diseases.

GEORGETOWN FACULTY ON WARPATH

A high-profile campus feud is heating up. Researchers at the Georgetown University Medical Center in Washington, D.C., are threatening to sue their employer, claiming the university's board of directors unfairly rejected a faculty protest of a new salary policy.

Last spring, 18 scientists filed a grievance complaining that the policy, which requires researchers to hustle up the lion's share of their pay through grants, violates tenure and academic freedom (*Science*, 5 June, p. 1531). A grievance panel ruled in the scientists' favor, but on 30 October the board ruled the dispute out of bounds for a grievance proceeding. The board did suspend further implementation of the policy pending a review.

Faculty members, unappeased, say the board has run roughshod over campus rules. "It's like declaring martial law," says professor Karen Gale. The grievants' lawyer, Steve Hoffman, says he'll go to court if the university fails to nix the policy by 13 December. A Georgetown spokesperson insists that "the review is a fair approach made in the spirit of cooperation and collegiality."

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