# RANDOM SAMPLES

edited by Adrian Cho

## Stradivari's Secret

Famed violinmaker Antonio Stradivari may have benefited not only from unparalleled expertise but also from a 70-year cold spell caused by a dearth of sunspots, researchers say. But others say the analysis doesn't ring true.

Researchers have suggested that Italian master luthiers of the late 17th and 18th centuries achieved superior tone by using secret varnishes, wood taken from ancient castles, or special drying techniques. But violinmakers may have been aided more by an extended period of long winters, cool summers, and slow, even tree growth, say climatologist Lloyd Burckle of Columbia University in New York and tree-ring scientist Henri Grissino-Mayer of the University of Tennessee, Knoxville. The unique climatic conditions produced dense wood with narrow tree rings, which was ideal for violins, they report in the current issue of *Dendrochronologia*. The cold snap is associated with the Maunder minimum, a period of low solar activity that began in 1645, 1 year after Stradivari's birth.

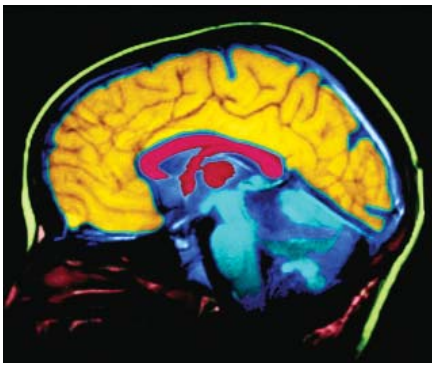
However, "the correlation between ring spacing and the acoustical properties of wood has not been established," says Colin Gough, a physicist at the University of Birmingham, U.K. Besides, Gough says, it's difficult to find a measurable difference between the tonal qualities of old and new violins.

## Scared to Death

The meek may inherit the earth, but the bold live longer, a pair of biopsychologists says. Rats that fear novel surroundings live only 80% as long as their less fearful siblings, report Sonia Cavigelli and Martha McClintock of the University of Chicago. Such "neophobia" might also shorten the lives of timid humans, they say, but others are skeptical.

When plunked down in unfamiliar environs, Norway rats that are reluctant to explore experience a bigger surge of hormones called glucocorticoids that give a terrified creature greater energy, Cavigelli and McClintock found. The researchers then studied pairs of male rats—one bold and one fearful—from 14 different litters. The fearful rats died younger than their more adventuresome brothers, they report in the 12 December issue of the *Proceedings of the National Academy of Sciences*. Frightened humans have similar hormonal responses, Cavigelli says, which suggests that, all other factors aside, neophobia could shorten people's lives, too.

But extrapolating from rats to humans is dicey, says Jerome Kagan, a psychologist at Harvard University. Studies already show that introverted people generally outlive extraverted people because "they're very careful with their lives," Kagan says. "They don't drive too fast, and they go to the doctor because they worry."



## I'll Shrink to That

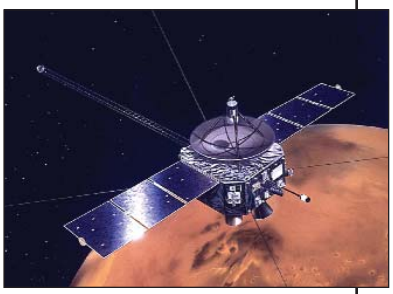
That daily glass of red wine may help protect your heart, but it may not be so good for your head. Even moderate alcohol consumption may shrink your brain, a pair of epidemiologists reports in the 7 January 2004 issue of *Stroke*.

One to two drinks per day appears to protect people from heart disease. To see whether an occasional nip might also help ward off stroke, epidemiologist Jingzhong Ding of Johns Hopkins Bloomberg School of Public Health in Baltimore, Maryland, and colleagues examined magnetic resonance imaging scans (MRIs) on 1909 middle-aged adults. They noted how much each volunteer reported drinking each day and then examined the subject's MRI to determine brain volume and look for signs of dead or dying brain tissue, known risk factors for stroke. Alcohol use did not reduce the incidence of dead tissue and therefore presumably didn't protect against strokes. However, even modest drinkers had smaller brains. "We cannot establish that alcohol causes brain atrophy," Ding says, "but [the work] does suggest that."

On the bright side, some of the shrinkage may be due not to atrophy but to alcohol drying the brain, says epidemiologist Kenneth Mukamal of Harvard Medical School in Boston. Such dehydration contributes to hangover, Mukamal says, but it's reversible—although the process is often painfully slow.

## Sorry, Can't Stop

Japan's first interplanetary probe has finally made it to Mars, but it isn't staying. Star-crossed Nozomi set out for Mars in July 1998 and was supposed to reach it 15 months later. But 6 months into the mission, a balky thruster threw it off course, and during the ensuing 5-year detour, solar radiation scorched the delicate machine. Now, the spacecraft has run out of fuel, cannot maneuver into orbit, and is zinging past the planet, officials at Japan's space agency JAXA announced 9 December.



That makes Nozomi the third Mars mission to fail in the past 5 years, which should be a lesson to those pushing for a human mission, says James Van Allen, a space scientist at the University of Iowa in Iowa City. "It's already very difficult to get to Mars," he says, "and with humans on board, it would be vastly more difficult."

CREDITS: (TOP TO BOTTOM) HENRI D. GRISSINO-MAYER; CORBIS; JAPAN AEROSPACE EXPLORATION AGENCY

# RANDOM SAMPLES

PEOPLE

edited by Yudhijit Bhattacharjee

## ON CAMPUS

**Cold comfort.** Imagine a 72-hour lecture. Then imagine students lining up to hear it. This month physics students and faculty at Berlin's Humboldt, Free, and Technical universities staged a marathon teach-in to protest the city's plans to cut staff by 25% and start charging tuition.

The 40-odd students crowded inside the lecture tent were "very alert and attentive even at 2 a.m.," says Paul Fumagalli, a physicist at Free University who expounded upon laser optics and diffraction phenomena. And the faculty was happy to participate, notes Humboldt's Wolfgang Nolting, because "no less than our future is on the agenda."

The protest hasn't changed the government's mind yet, but Humboldt physicist Michael Mueller-Preussker notes that the students have at least demonstrated "that they are highly motivated and deserve the best education."

**Thrown off track.** An ecologist says that his criticism of the biotechnology industry led the University of California, Berkeley, to deny him tenure last month.

Ignacio Chapela, 44 (below), alleges that opposition to a $25 million deal between Berkeley and Novartis in 1998, granting the pharmaceutical company exclusive licensing rights for plant and microbial research, doomed his 3-year bid for tenure. But the administration points to an unimpressive publication record and a *Nature* paper on transgenic corn that the journal later said shouldn't have been published (*Science*, 12 April 2002, p. 236).

Chapela acknowledges that the paper had some flaws, but he says that his overall research has earned him the respect of his colleagues, department chair, and dean. He plans to appeal, but he says, "I don't have much hope."

## JOBS

**Logical next step.** What is a mathematician supposed to do after chairing one of Britain's largest mathematics departments? For Phil Hall of Imperial College, London, the answer is to become director of Imperial's new institute, the International Institute of Mathematical Science.

The $5 million institute aims to bring mathematical techniques to bear on new fields, in addition to tackling traditional questions in cosmology, string theory, engineering, and finance. Its initial focus will be on areas such as epidemiology, biostatistics, and cell mechanics. "This is the way applied math is going these days," says Hall, 53, a specialist in fluid dynamics. He hopes to have a staff of 50 researchers and visiting scientists within 3 years of the 2005 start date.

**Harvest time.** Ecologist Gordon Conway, who pioneered the concept of sustainable agriculture and campaigned to make biotechnology available to developing nations, says he plans to retire as president of the $3 billion Rockefeller Foundation at the end of 2004.

"At some point you have to slow down," says Conway, 65, who says he tried to make Rockefeller "a truly global foundation [trying to] make globalization work for the poor." A champion of the right of developing countries to decide for themselves if the benefits of genetically modified crops outweigh the risks, he persuaded biotech giant Monsanto to abandon plans for its terminator gene that would have prevented poor farmers from using part of their annual harvest as seed for the coming year.

Conway's one regret is the absence of a Rockefeller program on the environment. "There really wasn't the money to do that," he says.

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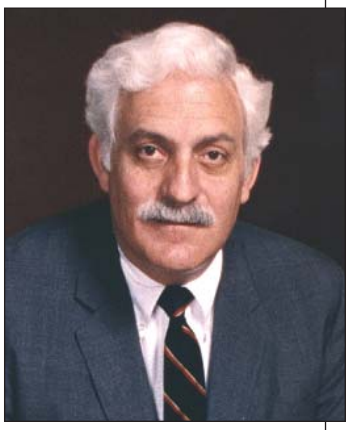
## CAMPAIGNS

**The price of honor.** Raymond Damadian says he's glad that he and his supporters have spent more than $1.2 million telling the world about his role in the development of magnetic resonance imaging (MRI).



Paul Lauterbur and Peter Mansfield received the Nobel Prize in physiology or medicine—and shared $1.4 million—on 10 December for their work on MRI. But Damadian, president of Fonar Corp. in Melville, New York, insists that he's the true inventor of the technology. A two-page spread in *The New York Times*, which ran on the eve of the ceremony in Stockholm, is the latest in a series of ads that Damadian has taken out in major U.S. and Swedish newspapers since the prizes were announced in October.

Damadian says that his media blitz has helped him overcome some of his bitterness toward the Nobel Prize committee. "What nobody can rob from me," he says, "is that MRI would not have existed without my work."

CREDITS: (TOP TO BOTTOM) SERGIO VARGAS; THE ROCKEFELLER FOUNDATION; FONAR CORP.