

# RANDOM SAMPLES

Edited by Yudhijit Bhattacharjee



## A Historic Catch

A 2.75-meter sturgeon weighing 120 kilograms last month completed a journey from Swansea Bay off the coast of Wales to the Natural History Museum in London.

On 2 June, Robert Davies caught the fish, which by a statute dating back to the 14th century must be offered to the Queen if caught in the United Kingdom. After Buckingham Palace told him he could “dispose of it as he saw fit,” Davies sold it for \$1200 at auction to a restaurant, only to have local police officers confiscate it because sturgeon, whose eggs are relished as caviar, is a protected species under British law.

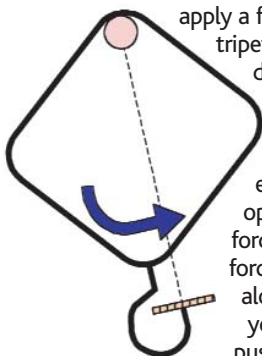
The fish disappeared mysteriously from police custody but was recovered shortly thereafter, following which its owner, a fish wholesaler, donated it to the museum’s national collection. “Sturgeons are extremely rare now, particularly in British waters, so this catch is hugely important,” says Oliver Crimmen, the museum fish curator.

## Physics for a Penny

Some people will go to any length to infect students with an interest in science. Keith Gibbs, a former U.K. physics teacher, claims a world record for whirling a stack of pennies balanced on a bent coat hanger. But he’d love to have a child beat his personal best of five. Along the way, he hopes they’ll learn the principles of circular motion.

The coat-hanger challenge is one of many creative teaching ideas described at Resourcefulphysics.org, a subscription Web site inspired by Gibbs’s book, *The Resourceful Physics Teacher*. Begin by bending a coat hanger into the shape of a square and the hook so that it points directly toward the opposite corner of the square. File the end of the hook flat. Now hold the coat hanger with one finger at the corner opposite the hook. Balance a penny on the end of the hook and then try to swing the coat hanger in a vertical circle. If you’re careful, the penny won’t fall off.

So how does it work? When you whirl the coat hanger in a circle, you apply a force—the centripetal force—which is directed toward the center of rotation, your finger. The penny experiences an equal and opposite inertial force—the centrifugal force—also directed along a line through your finger, but pushing it down onto



the end of the hook. This force should keep the penny, or stack of pennies, in place as long as the hook points directly at your finger and its end is flat.

## The Price of Family

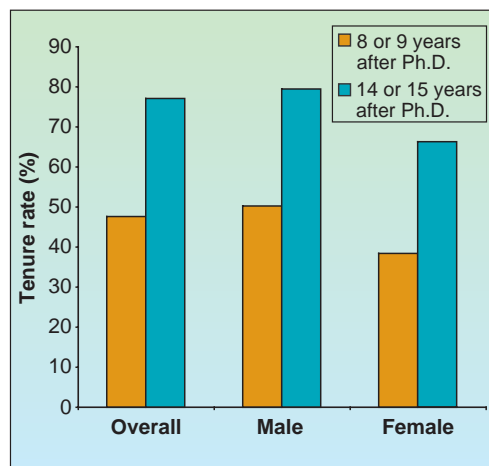
A new report for the National Science Foundation confirms what many had long suspected: Being married and having children hurts a woman’s chances of success in academic science and engineering. The report, a statistical analysis of data from a nationwide sample of doctoral recipients in the U.S. workforce, also suggests that women academic scientists who delay having children are more successful than those who start their families early.

“As long as the primary responsibility for child care continues to fall on the shoulders of women, the real dilemma facing the woman scientist is the choice between maximizing her own career and her responsibility for her children’s well-being,” says Yu Xie, a sociologist at the University of Michigan, Ann Arbor.

The report, from a team led by Jerome Bentley, a labor economist at Rider University in Lawrenceville, New Jersey, found a widening gap between women and men at successive milestones on the academic career path, from finding a tenure-track position to receiving tenure to getting promoted. Women are 14% less likely than men to be full professors 14 to 15 years after earning their Ph.D.s, for example, with about half of this difference stem-

ming from being married and having children early in their careers.

The findings underscore the importance of tenure policies that allow both male and female scientists to successfully manage family and career, says Bentley. Many universities across the country already grant



faculty members a 1-year tenure extension to cope with childbirth, child-care, or other family responsibilities.

But such policies have a downside, says Joan Girgus, a Princeton psychologist who led a study on gender disparities among faculty members at her university. “Some people think [giving women] additional time on the tenure clock provides an unfair advantage,” says Girgus. “Thus, assistant professors often don’t feel confident that a tenure extension for childbirth or adoption will be looked on favorably [by their tenure committee].”

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**JOBS**



**A rewarding move.** U.S. regenerative medicine expert Roger Pedersen, who led one of the research teams that independently created the first cultures of human embryonic stem cells in 1998, has been named medical director of a stem cell institute being launched by the University of Cambridge, U.K.

The initiative is being funded with \$20 million from the university and the U.K. Medical Research Council. The institute will be located in a campus building being refurbished for the purpose and expects to

have a 250-member staff of scientists and technicians by the end of next year.

Pedersen, who moved from the University of California, San Francisco, to Cambridge in 2001, says the institute's goal is to speed up the development of stem cell-based clinical applications. One ambitious 5-year target is a treatment for Parkinson's disease. The institute opens in 2005.

**MILESTONES**

**A unique life.** Evolutionary and systematic biologists around the world are gearing up to fête their most precious, if controversial, icon. On 5 July, Harvard professor emeritus Ernst Mayr celebrates the centenary year of a life devoted to evolutionary science (see p. 46).

His 25th book, a collection of essays titled *What Makes Biology Unique*, will be released later this year by Cambridge University Press. "His mind is still remarkably sharp," says Columbia morphologist Walter Bock, who was once Mayr's Ph.D. student and has edited the

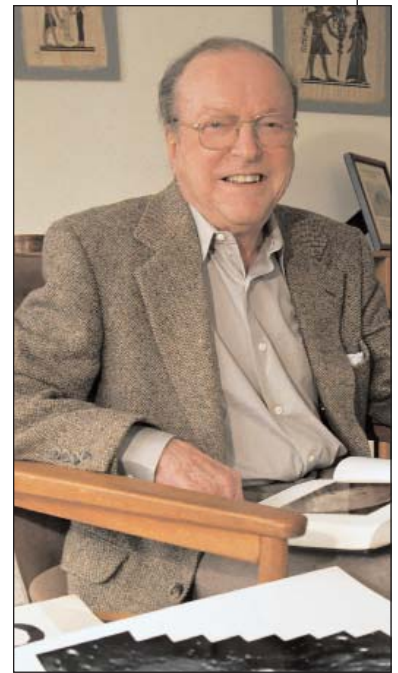
book. Known for his unyielding style, Mayr still engages in lively correspondence in longhand with his younger colleagues.

Harvard held a symposium in his honor in May, and the German journal *Naturwissenschaften* is devoting its July issue to his life and work. Among other events on the anniversary calendar is a symposium at the August meeting of the American Ornithologists' Union in Quebec City, Canada.

**An idea machine.** Theoretical astrophysicist and prolific thinker Thomas "Tommy" Gold (right) has died of heart disease in Ithaca, New York. "His imagination was amazing," says his former Cornell University graduate student, Stanton Peale of the University of California, Santa Barbara. "He'd come up with an idea a day, although a lot of the ideas he's most famous for were wrong." Gold, who retired from Cornell in 1987, was 84.

Gold's thinking ranged from the workings of the hu-

man inner ear—about which he was right—to the origins of the universe—where his steady-state theory lost out to the big bang. He infuriated geologists by claiming that oil



and gas are not the remains of once-living organisms but remnants of the planet's formation oozing up from the deep Earth. But he won plaudits in 1967 for proposing that a newly discovered pulsar had to be a rapidly spinning neutron star, which turned out to be true.

"Some of his ideas were completely nuts, but some were quite good," says Peter Goldreich of the California Institute of Technology in Pasadena, another early student of Gold. "By connecting seemingly disparate aspects of a problem and being very different from the typical physical scientist, he opened up new questions."

**AWARDS**

**Environmental prize.** A fan of French explorer Jacques Cousteau since childhood, Susan Solomon (below, right) saw atmospheric chemistry as the perfect mix of quantitative research and Earth study. Last week, the 48-year-old scientist's pursuit of her passion earned her the Blue Planet Prize, along with physician and former World Health Organization chief Gro Harlem Brundtland (below, left). Solomon and Brundtland will each receive \$460,000 from Japan's Asahi Glass Foundation.

Solomon, a scientist at the National Oceanic and Atmospheric Administration, wins the award for research in the 1980s showing the role of chlorofluorocarbons (CFCs) in accelerating the destruction of the ozone layer, which eventually led to the worldwide ban on production of CFCs. Brundtland, whose leadership of the United Nations World Commission on Environment and Development led to the first Earth Summit in 1992, is honored for building international cooperation on environmental issues.

Although science is important in environmental policymaking, "it's not the whole story," says Solomon, who is a co-chair of the Intergovernmental Panel on Climate Change. Policies also have to take into account "how much risk a society is willing to take."



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