

RANDOM SAMPLES

edited by CONSTANCE HOLDEN

Court Rules for California Antismokers

California governor Pete Wilson has been ordered by a superior court judge to reinstate the \$16 million antismoking ad campaign he killed last February (*Science*, 13 March, p. 1348). The ads were part of a tobacco education and research project, funded by the state's cigarette tax, which was approved in a 1988 voter initiative. Wilson claimed the money was more urgently needed for state health programs.

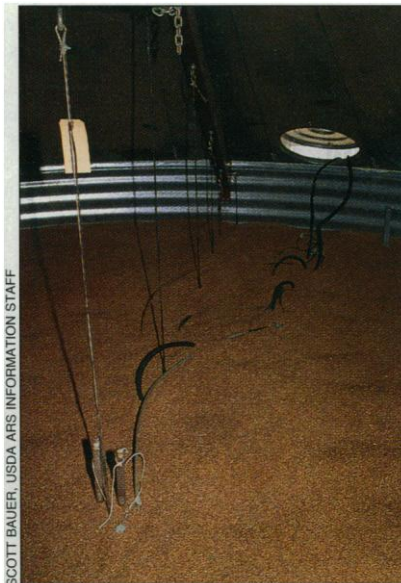
The American Lung Association disagreed. It sued, and won, by arguing that the state did not have the legal right to divert the money, which had been earmarked for tobacco education by the state legislature as well as by the voters.

The war is not over, though: Wilson has proposed a budget for next year that would not only eliminate the ad campaign but would also halve the funding for the state's widely praised tobacco research program, administered by the University of California. Lung association lawyer George Waters says these proposals aren't affected by the recent order, so the lung defenders may soon be back in court.

Engineers Capture Environment Award

Robert White, president of the National Academy of Engineering, and Perry L. McCarty, Stanford professor of civil engineering, have been selected to share this year's \$150,000 Tyler Prize, described by its sponsor, the University of Southern California, as the world's premier prize for "environmental science and leadership."

White, by guiding advisory work for the government, is credited with helping create "the machinery through which society observes and understands global climate change." McCarty, whose research has contributed to "significant improvements" in water treatment and reclamation, is called "one of the most broadly knowledgeable environmental engineers in the world" when it comes to water.



Hi-fi munching. Grain bin stuffed with sensor-equipped cables.

10,000 to 70,000 times, says entomologist Dave Hagstrum of the Agriculture Department's Grain Marketing Research Laboratory in Manhattan, Kansas. "They've got little claws, so they're probably scratching and bumping the grain, and we pick up those sounds as well," he adds. By counting the noises (which are translated into voltage peaks), a computer can estimate how many bugs have taken up residence in a bin.

Hagstrum's group, along with colleagues at the Agricultural Research Center in Gainesville, Florida, are developing two types of detector: a "bench-top" model for the inspection of small wheat samples, and a "bin model" for the wheat industry—cables equipped with multiple sensors for continuous monitoring. Each sensor in the bin can detect a single bug masticating in a kilogram of wheat.

Hagstrum says that detecting low-level infestation early on gives wheat storers time to find cheaper and nontoxic alternatives to fumigation, such as immediately milling the grain or cooling it to keep bugs from proliferating. And he claims that the cost of setting up an acoustic sensing system—perhaps \$10,000 in a small grain elevator—is modest compared to the \$60,000 price tag for fumigating a grain elevator. Agriculture researchers will soon find out how well the system really works: Pilot testing of the bin model will begin in July at two Kansas farms.

Rich-Poor Gap in Academia?

Academic salaries went up 3.5% in the academic year now drawing to a close—the smallest increase in 20 years, according to the American Association of University Professors' (AAUP) annual survey of academic salaries. Adjusted for inflation, America's faculty received a pitiful 0.4% real-dollar increase, but how big a hike could be expected during a recession that is forcing

Bugging Bugs

Weevils, moths, and other grain-devouring bugs destroy up to 10%—or several billion bushels—of the nation's wheat supply every year. During a mere 2 months of storage time, these fecund critters can reproduce a hundred-fold. Grain inspectors combat infestations by sieving wheat samples to scout for insects. But this is a time-consuming, expensive, and not particularly efficient process.

Now scientists have developed what may be a better way: detecting bugs by tuning into their eating habits. By planting a grain bin with dozens of powerful tiny microphones, the sounds of chomping bugs can be amplified

faculty are "taking it in the chops." Their salaries, he says, are lagging 0.6% behind inflation over the last year, despite the overall increase in academic pay. Full professors at public-sector research universities, with salaries averaging \$65,190, are now paid more than \$10,000 less than those at comparable private institutions. For Hamermesh, the increasing tight-fistedness of state governments threatens the successful replacement of a bulge of faculty due to retire in the late 1990s. Professors might not be replaced, or new recruits may be people who "can't do anything else," he says.

1991-92 salaries of full professors in selected fields at state institutions*

Health sciences	\$73,058
Computer and information sciences	71,906
Engineering	70,177
Physical sciences	62,531
Mathematics	60,404
Life sciences	59,934
Psychology	59,583
Social sciences	59,277

*From surveys by the Office of Institutional Research, Oklahoma State University, of members of the National Association of State Universities and Land Grant Colleges.

One-of-a-Kind Dean

At the moment, there are no female medical school deans in the United States. But soon there will be one at the most macho-sounding medical school of all: the Defense Department's Uniformed Services University of the Health Sciences, in Bethesda, Maryland.

Nancy Gary, an internist and senior medical adviser at the Health Care Financing Administration (HCFA), is already one of only four women to have served as deans among the country's 126 accredited medical schools (according to the Association of American Medical Colleges). Prior to joining HCFA 2 years ago, she was dean at Albany Medical College. Now she will take over at an insti-



Nancy Gary

tution that turns out 156 military doctors a year, but not without difficulty of late. The Uniformed Services University has been undergoing a shakeup over the past 2 years—ever since Congress, concerned about management deficiencies identified by the Department of Defense inspector general, threatened to zero out its annual budget of \$48 million. The threat is past, says general counsel Charles Mannix, who insists that Congress is happy with the 20-year old institution, adding that its graduates came through with flying colors in Desert Storm—the school's first major field test.

Patenting Software

Is computer software more like a nifty new bottle opener or a novel? That question isn't entirely whimsical—because it bears on the practical issue of whether software should be protected by copyrights or by patents. Until now most software-makers have looked to copyrights for protection, but growing numbers of computer software designers are beginning to rely on patents, and the government's patent machinery is ill-equipped to deal with them, according to a new report* from the Office of Technology Assessment (OTA).

To win a patent, inventors must show that their work is "nonobvious, novel, and useful." "Useful" is easy to determine, but patent examiners are struggling with the other criteria. The problem: the Patent and Trademark Office's record of the "prior art"—or existing software technology—is far from complete. Consequently, says OTA project director Joan Winston, programmers can gain patents for "reinventing the wheel."

And that may bring lawsuits: If a software house discovers that its

products infringe on a new patent, it may have to negotiate a license agreement or try to overturn the patent in court. With more than 1200 software-related patents awarded in 1990 and 1991 (almost four times the 1988-89 number), cases will "start popping out through the courts in the next 6 months or so," says Glen Self, research director with Electronic Data Systems Corp.

OTA recommends that the patent office improve the ability to search its database of patented software, and says a supplementary database, covering software that has not been patented, would be helpful. Indeed, University of Michigan computer scientist Bernard A. Galler is now seeking funds for a Software Patent Institute that plans to do just this job. But Self, for one, fears that both OTA and Galler are underestimating the sheer magnitude of the task. "It's a great idea, but it's too big a job," he says.

Even if a useful database can be

compiled, the OTA report notes that it may ultimately be necessary to draft intellectual property laws specifically relating to software.

FBI Drops OSI Leak Probe

National Institutes of Health Director Bernadine Healy asked the FBI to probe leaks of confidential misconduct reports and other material from NIH's Office of Scientific Integrity (OSI), but now, less than 2 months later, federal officials have dropped their investigation. In a 20 April letter to Healy, U.S. Attorney Richard Bennett wrote that his office "has decided not to prosecute" former OSI deputy director Suzanne Hadley or two former OSI staffers accused of taking confidential documents from OSI. "The absence of [evidence for] a financial motive" for the leaks, he explained, "makes a successful prosecution speculative."

In further explaining his decision, Bennett's letter also suggests that Healy was especially con-

cerned with leaks to Representative John Dingell's (D-MI) subcommittee on oversight and investigations, where Hadley has worked part time for several months. Hadley's "rather unique relationship" with the subcommittee, the letter states, complicated attempts to prove that any NIH confidentiality guidelines had been violated. "This is particularly true where, as the evidence indicates, the documents provided to the committee were those which it apparently could have legitimately obtained, and indeed were[sic] seeking through appropriate channels."

Second Careers for Senior Scientists

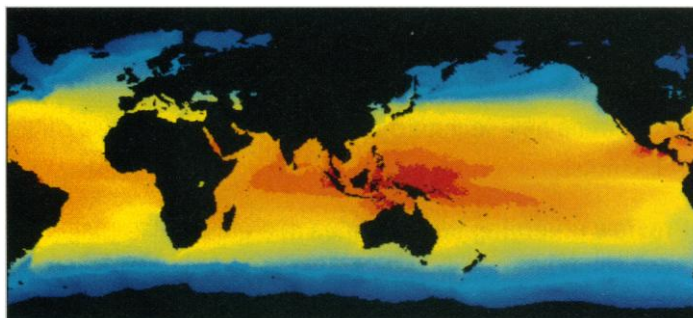
The French know how to live, or so it is said. To many a graying American scientist, *Chercheurs Toujours* might seem a case in point.

Chercheurs Toujours (possibly translatable as *Perpetual Seekers*) is a group of retired scientists whose purpose is to keep engaged in "socially or personally meaningful activities." It is needed because, says molecular biologist Joseph Huppert, "France is an extremely legalistic country," and one of its peculiarities is that "on your 65th birthday, you are thought to suddenly become completely stupid."

Huppert, retired director of an INSERM biology unit in Lyon, founded the group 2 years ago for those who retain their wits and want to use them. Members have already become involved in a variety of activities—some are manning two labs at Paris's impoverished Museum of Natural History; some are tutoring university students from underdeveloped countries; and the group has called attention to fraudulent claims in a cosmetics ad. Retirees are also available for projects like helping scientists design research programs.

The group, which now numbers 120, most in biology and medicine, wants to go international. Membership is 200 francs (about \$40) a year. Contact Huppert at the Hôpital Paul Brousse, 94800 Villejuif, France.

Energizing El Niño?



Last week, University of Delaware researchers released what they call "the most accurate satellite image yet" of the mysterious Pacific warm pool, a swath of ocean (indicated in red) near New Guinea whose temperatures run about 29.5 Celsius—2 to 5 degrees above other equatorial waters. Researchers say such images will constitute a powerful tool for tracking the pool as its temperature and size fluctuate from year to year. And they will contribute to understanding El Niño as well, says satellite oceanographer Xiao-Hai Yan, associate director of the university's Center for Remote Sensing. Yan and graduate student Chung-Ru Ho developed data processing software to convert 1989 satellite data into this image, which better agrees with shipboard measurements and "more truthfully reflects the real world," Yan says. The Delaware researchers will put their new skills to use during the Coupled Ocean Atmosphere Response Experiment, part of an international effort to study the tropical ocean atmosphere that is to begin late this year.

* "Finding a Balance: Computer Software, Intellectual Property, and the Challenge of Technological Change."