RANDOM SAMPLES

edited by CONSTANCE HOLDEN

No Excess Cancer Seen From Bomb Tests

Have atomic blasts in the past caused cancer in the present? Tens of thousands of military personnel took part in scores of atmospheric tests in the 1940s to the 1960s, and since then the question has dogged servicemen, governments, and cancer epidemiologists. Studies of U.S. tests have shown only that firm answers are elusive. But a new study of more than 20,000 U.K. test veterans has finally come up with one: an emphatic "no."

In the 11 December issue of the *British Medical Journal*, epidemiologists Sarah Darby and Richard Doll of the Imperial Cancer Research Fund (ICRF), and researchers with the U.K. National Radiological Protection Board (NRPB), find no evidence of excess mortality or cancer among people who witnessed dozens of tests conducted in Australia and the Pacific islands.

The study is a follow-up to a 1988 report that found a slight increase in deaths from leukemia and multiple myeloma among veterans relative to a matched control group. Now, however, with 7 years of additional data, the ICRF/NRPB team has concluded that this was probably due to an abnormally low incidence of these cancers in the control group.

The results don't surprise other epidemiologists, given that the veterans' doses were similar to the annual exposure that everyone receives from natural background radiation. "I would not expect to be able to see anything," says Seymour Jablon, a retired epidemiologist formerly with the National Cancer Institute of the National Institutes of Health. Jablon is one of the authors of a 1985 study of U.S. tests in Nevada and the Pacific that suggested a possible increase in leukemia among those exposed to one particular detonation in Nevada. The Institute of Medicine (IOM) is now repeating the study following revelations that 4555 people who were not at the test sites were wrongly included. The IOM is also doing a study of a 1946 test series in the Bikini Atoll, called Crossroads, in which radiation exposure may have been higher: Servicemen were sent onto ships to decontaminate them following an explosion.

All Rosy for Japan's Women in Science?

Seven years after Japan enacted an equal employment law, women are still fighting an uphill battle in the workplace. But—according to the Japanese government, at least—there's a startling exception: science. A recent report by the National Institute of Science and Technology Policy says the field offers women objective performance reviews, a discrimination-free workplace, and promotions based on ability.

The report, "Female Researchers in Japan," combines the results of statistical studies with interviews with 16 women in academic, institutional, and corporate labs. Virtually all reported they have been treated as well as male colleagues. The report also notes that in science it may be easier for a professional to balance career and family. Researchers can usually avoid the grueling hours of late night socializing that is a feature of Japanese business life, and they are less likely than other corporate employees to suffer dislocations from transfers. The report concludes: "Women who want to advance on the merits of their own ability should consider the field of [scientific] research."

Can things really be that good? An institute official insists that the women's sentiments are genuine—interviewers stopped after 16, she says, because "all the responses were the same." To more jaded eyes, however, that might suggest that women say what they think their interlocutors want to hear. And retired government researcher Katsuko Saruhashi says she suspects the report took a "warm" view of the situation because the government wants more women in science. That will take some doing: For starters, in 1992 only 30% of college students were women. They received 8.6% of Japan's science doctorates and made up 10.8% of science-related university faculty, 5.6% of researchers at national labs, and only 3.9% of researchers in industry.

Amateurs Gather Avian Data

Science isn't just for the birds, even when the field is ornithology. That's what the ornithology lab at Cornell University hopes to show volunteers across the United States and Canada in three bird data collection projects designed to get the general public involved in science. Along the way, the projects will also provide scientists with vast amounts of data on bird seed preference and foraging behaviors, information that would otherwise be hard to collect on a large scale.

The Seed Preference Project is already happening. Almost 8000 participants, from schoolchildren to retirees, were recruited via articles published in newspapers around the country. Over the past few weeks, each has been sent a packet containing a protocol and data recording sheets. Participants arrange three kinds of test seeds—black oil sunflower seeds, white millet, and red milo—on pieces of cardboard, and then record which bird species eat which seeds. That data will then be funneled into the Cornell lab's Bird Population Studies Division.

PETER MORENUS

Seeds of content. Test will show what this black-capped chickadee likes best.

Coming down the pike are two other surveys. Project Tanager will ask volunteers to gather information on how the environment may affect tanagers' breeding practices, and Project Pigeon Watch will ask inner-city kids to watch pigeon foraging and social behaviors. "The unique thing about this," says project organizer Margaret Barker, an environmental educator, "is that these are real scientific projects. We are going to try to clear up some questions about these birds."

To receive a protocol packet for the Seed Preference test, send $7 to: Seed Preference Test, Cornell Lab of Ornithology, 159 Sapsucker Woods Rd., Ithaca, NY 14850. Or call 607-254-2440.

'Intelligent Design' at San Francisco State

Two important concepts—academic freedom and the theory of evolution—are currently clashing at San Francisco State University. The question: Does the school have the right to stop a biology professor from expounding on creationist ideas? On 7 December, the university's Academic Senate voted no.

Hostilities commenced last spring when, in response to complaints by five students, the chairman of the biology department moved Dean Kenyon, a tenured professor, out of the introductory class he had been teaching for almost a decade. Kenyon devotes two course sessions to explaining how it is unlikely that aspects of chemical evolution could have occurred by chance. He insists he's no Biblical fundementalist, but he has become an advocate of the theory that "intelligent design" must be behind the emergence of

life. University officials have their doubts about having this laid on freshmen who may never see another science course.

After his removal, Kenyon claimed his intellectual freedom had been abridged and appealed to the faculty senate's Academic Freedom Committee. The committee agreed with him, but the department demurred. Tensions escalated in November, when the American Association of University Professors weighed in, praising the committee's report and urging resolution of the issue. And finally came endorsement of Kenyon's reinstatement by the Academic Senate.

His defenders, all but one of them nonscientists, say Kenyon shouldn't be penalized for exposing his students to alternative interpretations of events. And they feel the department violated "due process" by relying on student reports rather than engaging in systematic information-gathering on his teaching.

But Kenyon's views have been a matter of chronic concern since he began injecting them into his teaching more than a decade ago, says university dean James Kelley, an oceanographer. So "18 years of student complaints" seemed like enough evidence. Department chairman John Hafernik adds that there was no due process to violate. He calls Kenyon's reassignment a "scheduling decision" that should never have gone outside the department. But it did, and now it's back. Kelley says Kenyon (who is now teaching only labs) has been offered the chance to conduct an advanced seminar where his ideas can be explored. But Kenyon wants his intro course back, saying "I'm not going to drop this issue." He won't get more specific, but university officials fear a lawsuit is in the making.

Japan Prize Goes to American and Swede

The high value of the yen may be hard on Japan's balance of trade, but it's nice for U.S. astrophysicist William Hayward Pickering and Swedish neuropsychopharmacologist Arvid Carlsson: Each scientist will be receiving 50 million yen—an amount whose dollar value has climbed by $67,000 during this past year, to $467,000—because they've won the 1993 Japan Prize.

Pickering, professor emeritus at Caltech, has won Japan's version of the Nobel Prize for his work at the Jet Propulsion Laboratory, where he designed radio telemetry systems and spacecraft for unmanned space and planetary explorations. Carlsson, professor emeritus at Gothenburg University, has made pioneering discoveries in the function of the neurotransmitter dopamine.

AT&T

Distributed numeracy. Artist's rendition of the new educational satellite that will soon be showering the country with math.

Long-Distance Math Learning

Last week, precollege math education got a big boost from a rocket launch. An Atlas IIAS hoisted AT&T's 7000-pound Telstar 401, the highest-capacity educational satellite to date, into a geosynchronous orbit over the equator.

The Public Broadcasting System (PBS), which owns a large chunk of the satellite, plans (among other offerings) to beam down Mathline, its "first discipline-based educational service," to help teachers deliver the latest in math instruction. Telstar has so much capacity that, for the first time, teachers—and, later, students—will be able to use it for interactive programs.

Mathline's first initiative, to start next February, will train middle school teachers in the new standards promulgated by the National Council of Teachers of Mathematics. Such standards involve a participative, hands-on approach that rejects rote instruction and emphasizes abstract and creative thinking. Teachers will be organized in "electronic learning communities" of 25 to 30 each and assigned "online mentors" to help them get the hang of new standards, says project director Mary Harley Kruter. Included in the program is an "electronic math teacher resource center" with e-mail, discussion forums, and resource databases.

PBS officials explain that since more than 90% of elementary and high schools have computers and modems, almost any school will be able to plug in to Mathline. Telstar 401 will beam programs down to each of the country's 346 local public TV stations, which will then broadcast them, so schools will be able to pick up the signals via broadcast, cable, or directly by satellite dish.

Tax Victory for Science Agencies

An eleventh-hour press by U.S. science agencies has culminated in a victory for government-industry research collaborations. Such arrangements had been threatened by the international trade talks completed last week in Geneva.

A proposal in the draft General Agreement on Tariffs and Trade (GATT) would have allowed importing countries to add special taxes on any industrial product for which a foreign government had subsidized more than 25% of applied research or 50% of basic research. Such an antisubsidy clause, science and technology agencies feared, would undermine efforts to work with industry, such as Cooperative Research and Development Agreements or the Advanced Technology Program (*Science*, 3 December, p. 1503).

But last week, GATT negotiators agreed on a treaty that resolves most of the agencies' concerns. In the final version, government-funded "fundamental research" will be exempt from tariffs, as will be government funding of up to 75% of the costs of "industrial research," and up to 50% of "precommercial development activity"—defined as applied research and noncommercial prototyping.

Best of all, agencies will not have to declare which programs fit into which categories, something that would have been an accounting nightmare. Instead they will simply respond on a case-by-case basis to any foreign competitor's challenge to a government-subsidized product. "In the dark days of the negotiations, I didn't think we'd get anything," says one senior science official. "But this is very much a victory for the home team."

Return to Sender

An item in the 10 December Random Samples has sent several hundred truthseekers, eager to subscribe to the new online version of the *Journal of Irreproducible Results*, down the wrong electronic path. We gave incomplete directions. The free journal, known as the *Mini-JIR*, can be obtained by sending an e-mail message to LISTSERV@MITVMA.MIT.EDU or LISTSERV@MITVMA. The message must contain only the words SUBSCRIBE MINI-JIR, followed by the individual's name.