# Environment

## Jury is still out on EMFs and cancer

The electric and magnetic fields (EMFs) surrounding electric-power lines and wires should be formally designated a "possible human carcinogen," according to the Aug. 10 report of an expert panel convened by the Energy Department and the National Institute of Environmental Health Sciences.

While hardly a stinging indictment, the conclusion nevertheless falls far short of dismissing the possibility that EMFs pose risks. The recommendation was based largely on human epidemiological studies and cellular research probing possible mechanisms by which EMFs might cause cancer.

For 9 days in June, a 26-member working group reviewed recent studies. At least 20 panel members agreed that although the data are "limited," magnetic fields generated by power-line frequencies might cause leukemia in children and occupational exposures might spawn leukemias in adults.

Data are "inadequate" to link workplace EMF exposure to other malignancies, such as breast cancer (SN: 6/18/94, p. 388) and brain cancer (SN: 1/21/95, p. 44), most panel members concluded. They also considered inadequate the data linking residential exposure and cancer, in part because the quality of the exposure assessments were seen as "a serious limitation."

While the panel concluded that test-tube studies provide moderate support for carcinogenicity at magnetic-field strengths above 100 microteslas (SN: 2/21/98, p. 119), it found less support for risks at the lower fields characteristic of most residential and occupational exposures. Finally, the panel considered but did not rule out the possibility that adverse effects other than cancer—such as sleep disturbances (SN: 1/10/98, p. 29) or the inhibition of a drug's function (SN: 11/29/97, p. 342)—might be triggered by EMFs. —*J.R.*

## Human pesticide experimentation

Toxicological studies in which the "the test animals are people" have recently been conducted by several major pesticide manufacturers, according to a new report. The Environmental Working Group (EWG), a research and advocacy organization based in Washington, D.C., says that most of the recent human pesticide experiments have been performed in England and Scotland—even though the pesticides may be made by firms headquartered elsewhere.

The EWG cites three 1997 experiments in England—conducted for Amvac Chemical Corp. in City of Commerce, Calif., in which volunteers drank small amounts of dichlorvos, a neurotoxic insecticide, mixed into corn oil. In 1992, the French firm Rhone-Poulenc paid volunteers in Scotland to drink orange juice that had been spiked with the insecticide aldicarb.

In both sets of tests, EWG reports, some subjects experienced adverse symptoms and showed evidence of toxicity—a suppression in the activity of cholinesterase, an enzyme crucial to nerve signaling. The group notes that the U.S. Environmental Protection Agency has confirmed that additional human toxicology studies are under way overseas.

Manufacturers have used data from such tests to argue—successfully—that U.S. regulatory limits for specific pesticide residues in foods, derived from animal data, are set too high.

Responding to the EWG report, EPA notes that it "is deeply concerned that some pesticide manufacturers seem to be engaging in health-effects studies on human subjects" as a way to avoid the agency employing a safety factor for applying results of animal tests to people.

While U.S. law would likely prohibit the type of studies reported to be occurring overseas, it has not prohibited use of data resulting from them. That may change, the EPA statement says, pointing out that "protection of public health from adverse effects of pesticides can be achieved through reliance on animal testing and use of the highest ethical standards." —*J.R.*

# Science & Society

## Clinton gets new science advisor

On July 31, more than 5 months after president Bill Clinton nominated him for the job (SN: 2/28/98, p. 137), Neal F. Lane won unanimous Senate confirmation as the nation's presidential science advisor. Four days later, the physicist was at work filling the vacancy created when the previous science czar, John H. Gibbons, retired in mid-March.

For the past 5 years, Lane has headed the National Science Foundation in Arlington, Va.—the nation's leading funding agency for basic research. In his new job, Lane will wear several hats. Not only will he direct the White House Office of Science and Technology Policy and cochair the President's Committee of Advisors on Science and Technology but he will also serve on the National Science and Technology Council. Before entering public service, Lane had conducted research and served as an administrator at several universities.

The Senate last May approved biologist Rita R. Colwell to take the helm at NSF. However, she had to await Lane's departure before she could move over from the University of Maryland's Biotechnology Institute in Baltimore. —*J.R.*

## Unusual offer in antibiotic approval

Earlier this month, the Food and Drug Administration announced it has approved the use of Baytril, a fluoroquinolone antibiotic, to treat several respiratory diseases in cattle. In its announcement, FDA noted that the drug's manufacturer—Bayer Corporation's Animal Health Business Group in Shawnee Mission, Kansas—had made an "unprecedented" offer. The company has pledged that if FDA finds Baytril's use in cattle to pose a risk to public health, the company will "immediately take corrective action—up to and including stopping the sale of [this drug]."

The offer reflects a concern that the growing use of antibiotics in livestock may be fostering the survival of bacteria resistant to these drugs (SN: 7/18/98, p. 39), notes Michael J. Blackwell, deputy director of FDA's Center for Veterinary Medicine in Rockville, Md. Such bacteria may develop in treated animals or in water and soil tainted by drug residues from animal waste (SN: 3/21/98, p. 187). People who are later sickened by these germs run the risk that their disease will not respond to drug treatment.

Bayer's move is "a step in the right direction," says Patricia B. Lieberman, who directs the antibiotic-resistance project of the Washington, D.C.–based Center for Science in the Public Interest. However, she contends, Bayer's track record does not inspire confidence.

The company supplies fluoroquinolones for treating poultry flocks, she says—"a use that has resulted in fluoroquinolone resistance in *Campylobacter* bacteria. But the company has not stopped selling the drug to poultry growers nor has the FDA banned its sale." As such, she argues, FDA should not have approved a new use of such antibiotics without demanding "automatic withdrawal" of Baytril if harmful fluoroquinolone-resistant bacteria reach federally determined limits.

Without new antibiotics for livestock, however, germs would eventually become resistant to the old standbys, Blackwell counters, creating "a world where you might as well not be using antibiotics." That would probably lead to higher costs for animal-derived foods, he charges, and a greater risk that livestock diseases would be passed to people.

Moreover, he notes, the deal FDA has brokered with Bayer calls for a novel and very aggressive program of monitoring antibiotic resistance. The program might eventually serve as "a blueprint for the future." Should resistance emerge, Blackwell says, instead of immediately pulling Baytril from the market, his agency will first look for ways to preserve public health by limiting the drug's use—such as by altering dosages or the medical conditions for which it's approved. —*J.R.*