Bergland Opposed on Farm Machine Policy

Plan to withdraw USDA funding for research on mechanization runs against political and bureaucratic barriers

"The bombshell," as one University of California official at Davis called it, exploded last December when Bob Bergland, the Secretary of Agriculture, made an off-the-cuff policy announcement in Fresno, California. In answer to a question about mechanized farming, a hot topic there, Bergland said he intended to stop government support for research that might put farm laborers out of work. "I do not think that federal funding for labor-saving devices is a proper use of federal money," he said. "The economic incentives in the marketplace should be powerful enough so that that kind of research work can be done by private enterprise."

The shock waves spread rapidly. University and agribusiness leaders raised a protest and leaned on Bergland to retract the statement or bury the policy quietly. They failed in the former, but they may have succeeded in the latter.

The antipathy to Bergland's policy stems from several sources. California university officials are in a legal battle with a farm workers group, defending the university's practice of using tax dollars to develop new technologies that benefit private businesses and reduce the need for farm labor. The officials felt abandoned by Bergland in mid-battle. Second, agricultural colleges have enjoyed great freedom in the past, and their leaders resist anything that looks like an attempt to impose federal controls on research. Bergland's policy looked like such an attempt.

Most important, some agribusiness and research leaders saw the Fresno doctrine as a triumph of consumerism over good science and economics. One vocal critic in this vein is Emil Mrak, chancellor emeritus of University of California (UC) at Davis and a longtime adviser to the federal government on pesticides. He sent a scorching letter to Washington earlier this year complaining of Bergland's policy.

In Mrak's opinion, the USDA has been invaded by Ralph Nader disciples and has been converted to the department of consumer culture. By joining with the antimechanization movement, Mrak thinks, Bergland has given support to modern Luddites—heirs of the 19th-century British machine smashers. Mrak says that American agriculture can compete in world markets only if it is allowed free rein in mechanical innovation. American farmers must use machines to compensate for the absence of cheap labor. Mrak is discouraged by attempts to slow the rate of mechanization: "I can't help but wonder if we aren't going the way of the Roman Empire," he sighs.

Many others feel as Mrak does, but are more confident that the federal government can be brought to heel. Today, 4 months after the Fresno bombshell, the damage has been so neatly repaired that some opponents of Bergland's policy say nothing is amiss at the USDA. A spokesman for Representative Jamie Whitten (D-Miss.), chairman of the House Agriculture Committee, says that there is no cause for alarm because the USDA budget makes no cuts in funding of mechanization research. And the dean of the agriculture school at UC-Davis, Charles Hess, one of the most outspoken of Bergland's critics, says that he no longer has a quarrel with the USDA.

A prototype lettuce harvester developed by USDA engineers in California. In this early version, an x-ray device just behind the lifted wheel measures the density of each lettuce head and activates a blade, cutting only mature plants. [USDA photo]

In a letter to Whitten earlier this year, Hess described Bergland's research policy as "irresponsible and irrational" and asked Whitten to help "change the Secretary's position." He wrote: "It is not a case of how much federal money is involved . . . because it is a relatively small amount, but I am more concerned about the principle. For a Secretary of Agriculture to say that he will not support research that can increase productivity, it is unconscionable."

Since then, Bergland has had some frank discussions with Whitten, and he has issued a policy clarification. Hess now says, "I have no disagreement with Bergland's revised statement." As Hess understands it, the USDA will study the mechanization issue for some months, and then produce recommendations that users of federal research dollars, like UC-Davis, may follow if they choose.

The controversy put Bergland at odds with the agribusiness community, the state universities, and with his own department's research branch, called the Science and Education Administration (SEA). Anson Bertrand, director of SEA, reportedly sought to say as little as possible about the Secretary's remarks in Fresno. As one observer put it, Bertrand would have preferred to deny that the Secretary had even been in California.

Despite the resistance, a new formulation of the policy was developed, following some long and agonized negotiations between SEA and the Secretary's office. The results were made public in a speech given by Bergland on 31 January and in a press release issued in March.

In the new statement, Bergland said the USDA will not fund research where "careful review and analysis clearly in-

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dicate that the direct and immediate benefits will go to a relative few in a limited number of locales while neither serving the national interest nor benefiting the general public." In the case of mechanization, Bergland said, "we will not put federal money into research where—other factors being equal or neutral—the major effect of that research will be the replacing of an adequate and willing work force with machines." It is a much-qualified policy, leaving plenty of room for interpretation.

Bergland said that up to this time, too much emphasis has been placed on the value of productivity gains promised by new farm technology. He would like to look more carefully at the social costs imposed by technologies before they are funded. He passed the hard task of distinguishing the socially beneficial from the harmful categories of research to a committee. It is a cat-and-dog group, made up of roughly equal numbers of consumer and farm representatives.

Part of the reason for focusing so critically on mechanization, Bergland explained, is that he thinks private industry should pay for this highly applied and often profitable research from its own funds. Bergland also has doubts about the future viability of highly mechanized farms, because "we no longer have cheap and abundant supplies of energy. And we have learned that mechanical and chemical technology can exact a high price in terms of erosion, pollution, and human health." The bulk of federal research funds, he thinks, should be invested in basic science in the hope that fundamental discoveries may reveal ways to reduce the use of fertilizer, pesticides, and petroleum.

One of the co-chairpersons of the mechanization review committee, Susan Sechler, USDA's deputy director of the Office of Economics, Policy Analysis, and Budget, concedes that work is progressing slowly, and that "we have to move slowly" because the subject is so controversial. Great care is being taken to avoid doing anything that might seem to restrict scientific freedom or focus negatively on particular universities or researchers. She is convinced, however, that agriculture has become "a tremendously overmechanized industry," and that research administrators must be more critical of projects that could accelerate the trend toward mechanization.

Asked to describe the kinds of research that might fall into disfavor, Sechler gave few specifics. The department is still grappling with the principles of its new policy. "Some people thought we had a plan in the bottom drawer," Sechler said. But that is not the case; the plan is still inchoate.

The tomato harvester, which has eliminated thousands of stoop-labor jobs in California. [USDA photo]

A preliminary survey turned up 20 to 30 USDA-funded projects (costing about $1 million) that might be classified as mechanization research, but Sechler thinks the true number of mechanization projects may exceed 600. The task of sorting these will begin later, after the advisory group has developed criteria for judging social impacts.

USDA officials are loathe to specify projects that might need critical review.

Another Smallpox Scare

"It was a madhouse here for a time," says smallpox expert Steve Jones of the Center for Disease Control (CDC) in Atlanta, Georgia. The hubbub was caused by the announcement on 23 April that a case of smallpox had been confirmed in Italy.

The world's last known case of smallpox occurred in Somalia in October 1977. The Italian case would not only have broken a 3-year record, but, far more seriously, might have undermined a fundamental principle of the World Health Organization's (WHO) eradication program, that there is no natural reservoir in which the disease can lie hidden.

Smallpox authorities are used to rumors that the disease has recrudesced, but the news from Italy was more than mere rumor. The regional health authority for Lombardy announced officially that a 32-year-old engineer, Umberto Moretti, had developed smallpox symptoms after returning from a trip to Indonesia. The diagnosis was based on one of the more definitive tests for smallpox, an electron microscopist's study of the virus samples.

At CDC, the news caused tremendous consternation. Calls flooded in from all over the country from public health workers, physicians, and people planning visits to Italy. The smallpox specialists at CDC clung to the hope that the report would turn out to be false.

Further news from Italy disclosed that the Italian engineer had originally been diagnosed by his clinician as having chicken pox. It was only when samples went to the laboratory that the diagnosis of smallpox virus had been made. A WHO doctor was dispatched from Geneva to examine the patient, and diagnostic samples were sent to a smallpox expert in Paris. Within two days the smallpox threat had been dissipated: the virus was herpes, and the patient had simple chicken pox.

WHO has found numerous occasions on which to announce the eradication of smallpox. Another such announcement, issued with some new degree of bureaucratic solemnity, is due to emerge on 12 May. Experts consider that only definitive action by the Nobel Peace Prize committee can break the chain of transmission.—NICHOLAS WADE

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There is one outstanding model, however, which dominates the scene and has served as the focus of the California brouhaha. It is the technology of mechanized tomato picking, developed over a 10-year period by researchers at UC-Davis and adopted on a large scale by California growers in the 1960's. It is agreed that this innovation increased tomato production in the state (by about 50 percent), favored large farmers over small, and reduced the number of jobs for farm laborers (the number of tomato workers declined from about 50,000 in 1964 to 18,000 in 1972). The price of processed tomatoes rose during this period for a variety of reasons. What is not agreed is whether these changes were beneficial or harmful.

Al Meyerhoff, an attorney at the California Rural Legal Assistance (CRLA) project, argues that high-technology agriculture of this kind is closing down jobs and driving small farmers off the land. A way of life is being destroyed, Meyerhoff says, and the bounty produced in this revolution is being distributed not so much to consumers as to the increasingly concentrated farm industry, in profits.

The CRLA has sued the University of California to prevent tax dollars from being used to support research which allegedly benefits private rather than public interests. It is too late to stop the tomato picker. And researchers at a USDA laboratory and at UC-Davis have already developed a prototype lettuce picker. But the CRLA would like to stall work on melon harvesters, grape tending and harvesting machines, citrus fruit tree shakers, and other mechanical devices still in development.

The CRLA suit attacking this research was trimmed in scope recently by the superior court judge in Alameda County trying the case. He declined to rule on the broad question of whether or not this kind of research benefits the public. But he agreed to rule on some narrower points, including (i) charges that university officials with holdings in agribusiness firms have a conflict of interest, (ii) a charge that cooperative extension offices are being used as research rather than education centers, in contravention of federal law, and (iii) charges that private industry exerts an unhealthy influence over the university's research priorities.

The USDA is just beginning to examine some of the social conflicts created by high-technology farming, and it is not at all clear how the department will proceed. Will it heed the advice it gets from the new committee on mechanization? At this writing, the committee seems to be dormant. While panel members have been selected, they have not been officially appointed. No funding has been set aside. And it is not known how often the group will meet, if at all. One department official suggested that the panel be convened once, perhaps in midsummer, and then sent home. USDA staffers assigned to the committee are reluctant to say what will happen next.

Thus, while Bergland's policy on mechanization research is still kicking, it seems to have been pushed into the back closet for now.—ELIOT MARSHALL

NAS Elects New Members

The National Academy of Sciences elected 59 new members during its 117th annual meeting, bringing the total membership to 1324 men and women. Newly elected members (with their affiliations at the time of nominations) are:

Kinsey A. Anderson, University of California, Berkeley; **Francisco J. Ayala**, University of California, Davis; **Paul T. Baker**, Pennsylvania State University, University Park; **Robert L. Baldwin**, Stanford University School of Medicine; **Harlan P. Banks**, Cornell University; **Helmut Beinert**, University of Wisconsin, Madison; **Abram Bergson**, Harvard University; **O. Brent Berlin**, University of California, Berkeley.

R. Stephen Berry, University of Chicago; **J. Michael Bishop**, University of California Medical Center, San Francisco; **Peter M. Blau**, Columbia University; **Richard G. Brewer**, IBM Research Laboratory, San Jose; **William Browder**, Princeton University; **Michael S. Brown**, University of Texas Southwestern Medical School, Dallas; **William L. Brown**, Pioneer Hi-Bred International, Inc., Des Moines.

Angus A. Campbell, University of Michigan, Ann Arbor; **Herman Chernoff**, Massachusetts Institute of Technology; **George W. Clark**, Massachusetts Institute of Technology; **Marvin L. Cohen**, University of California, Berkeley; **Stanley Cohen**, Vanderbilt University School of Medicine; **Robert G. Coleman**, U.S. Geological Survey, Menlo Park; **Sidney R. Coleman**, Harvard University; **Earl W. Davie**, University of Washington School of Medicine, Seattle.

Mostafa A. El-Sayed, University of California, Los Angeles; **Richard K. Gerson**, Yale University School of Medicine; **Eloise R. Giblett**, University of Washington, Seattle; **Edward D. Goldberg**, Scripps Institution of Oceanography, La Jolla; **Avram Goldstein**, Stanford University Medical Center; **Joseph L. Goldstein**, University of Texas Southwestern Medical School, Dallas; **Melvin M. Green**, University of California, Davis; **Cyril M. Harris**, Columbia University; **Donald R. Helinski**, University of California, San Diego; **Julian Hochberg**, Columbia University.

Andre T. Jagendorf, Cornell University; **Richard M. Karp**, University of California, Berkeley; **Frederick Kaufman**, University of Pittsburgh; **Martin D. Kruskal**, Princeton University; **John I. Lacey**, Fels Research Institute, Yellow Springs; **Joel L. Lebowitz**, Rutgers University; **Heinz A. Lowenstam**, California Institute of Technology; **Theodore H. Maiman**, TRW Electronics, Los Angeles; **Henry P. McKean**, New York University; **Robert N. Noyce**, Intel Corporation, Santa Clara; **Everett C. Olson**, University of California, Los Angeles.

Charles R. Park, Vanderbilt University School of Medicine; **Joseph E. Rall**, National Institute of Arthritis, Metabolism, and Digestive Diseases, National Institutes of Health; **Frederick Reines**, University of California, Irvine; **Charles Sawyer**, University of California, Los Angeles; **Luis Sequeira**, University of Wisconsin, Madison; **James B. Serrin**, University of Minnesota, Minneapolis; **Eugene M. Shoemaker**, California Institute of Technology; **G. William Skinner**, Stanford University.

Hamilton O. Smith, Johns Hopkins University School of Medicine; **Solomon H. Snyder**, Johns Hopkins University School of Medicine; **Louis Sokoloff**, National Institute of Mental Health, National Institutes of Health; **Barry M. Trost**, University of Wisconsin, Madison; **Peter K. Vogt**, University of Southern California School of Medicine; **Robert H. Wasserman**, Cornell University; **Howard E. Zimmerman**, University of Wisconsin, Madison.

In addition, the Academy elected 12 foreign associates:

Ignacio Bernal y Garcia Pimentel, National University of Mexico, Mexico; **Jacques-Emile Blamont**, Centre National de la Recherche Scientifique, France; **John G. Bolton**, Commonwealth Scientific and Industrial Research Organization, Australia; **Paul Erdos**, Hungarian Academy of Sciences, Hungary; **Roger Gautheret**, L'Institut de France, France; **John B. Gordon**, Laboratory for Molecular Biology, United Kingdom; **Jean-Marie Pierre Lehn**, Universite Louis Pasteur, France; **Peter Reichard**, Medical Nobel Institute, Sweden; **Hans H. Ussing**, University of Copenhagen, Denmark; **Leon Van Hove**, European Organization for Nuclear Research, Switzerland; **Torsten N. Wiesel** (Sweden), Harvard Medical School; **Maurice V. Wilkes**, University of Cambridge, United Kingdom.

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