one-shot issue or as a first step toward reorienting the Midpeninsula research and industrial apparatus toward socially constructive work."

Present signs indicate that the radicals will have some difficulty in mounting a sustained offensive against SRI itself beyond the campus boundaries. On the other hand, faculty observers feel that the core of radicalized students and sympathetic moderates at Stanford has grown sizably and that the trustees' decision to separate rather than integrate SRI could lend impetus to the radicals' drive to compel the trustees to "share power."

The militant assault on SRI has forced the SRI staff and administration to examine its policies and future prospects more carefully, perhaps, than ever before.

The view of SRI executives seems to be that, well before the trustees decided to cut SRI loose and the students started breaking windows, the institution was making changes in the way it conducts its affairs.

Last year a serious effort was begun to exploit the multidisciplinary capabilities of SRI in "institute-wide research programs." A major part of research financed out of SRI's own purse is going into exploratory projects in education, health, communications, transportation, pollution, public safety, and urban development. These are research areas in which, even 5 years ago, research funds were meager. Now the demand for this sort of research has increased. SRI, for example, was one of five pilot research centers established in 1967, each with annual funding of over $100,000, to study future educational needs and resources in the light of current and prospective changes in society.

Inside the SRI staff, attitudes are changing. One executive says SRI researchers "are no longer willing to ignore the social implications of their tasks." During the April crisis an elected staff "senate" to provide policy guidance for SRI programs was seriously advocated. The SRI administration has been giving attention to an "attempt to generate long-term plans as to what the role of the institute should be." And ways are being sought to find permanent sources of income, such as a share of income from patents developed for clients by SRI, to give SRI more policy freedom, since, as one vice-president said, "We need a new basis of independence."

SRI and the other successful think tanks are a significant postwar phenomenon, institutions for a postindustrial society produced by crossing the university with the business firm. As an independent nonprofit organization, SRI has equated the public interest with government demands expressed in terms of applied research contracts, many of them in the military field. With the escalation of the Vietnam conflict this concept of the public interest has been challenged, primarily from within the university.

SRI researchers and administrators reject the picture of their work which the militants draw. They feel that research in support of national security is necessary and justified, and they believe that broader public opinion supports them. SRI is likely to continue to do work which the government is unable to do and the university unwilling to do.

But the old ad hoc rules under which SRI has done business are being examined. SRI people pride themselves on being "realists," but a lot of them are pondering the question of how independent SRI really has been and should be. And SRI in transition could find it less difficult to weather the cutting of its bond to Stanford than to answer some of the basic questions about its own identity.—JOHN WALSH

DDT: Criticism, Curbs Are on the Upswing

The seizure of quantities of Lake Michigan coho salmon, found to have high concentrations of DDT, and a strong personal statement by an Interior Department official calling for a nationwide phase-out of the use of DDT are among the most substantial signs that federal and state governments are giving the use of DDT a harder look.

- The FDA has seized, since 28 March, about 35,000 pounds of DDT-contaminated Lake Michigan coho salmon. This was the first time that the FDA has ever moved to set tolerance levels for fish sold in interstate commerce.
- An Interior Department assistant secretary, in one of the strongest warnings against agricultural pesticide dangers made by a government official to date, has advocated that DDT be prohibited throughout the nation within 3 to 5 years in order to protect the environment for fish, wildlife, and human safety. Leslie L. Glasgow, who is assistant secretary for Fish and Wildlife, Parks, and Marine Resources, said before a Commerce subcommittee, "It is time to replace DDT with less hazardous pesticides. Continued use should not be permitted where environmental contamination occurs." Glasgow made it clear, however, that this was his personal opinion, not an official departmental position. In other developments relating to the use of DDT:
- Robert Finch, Secretary of Health, Education, and Welfare (HEW) has named an 11-member commission, which has National Academy of Sciences support, to conduct a broad general study of the relationship of pesticides to the environment. In addition, he has announced that the Food and Drug Administration (FDA) will undertake a specific review of pesticide residues in fish in order to establish permanent tolerance levels. Finch authorized the FDA to set temporary tolerance levels, limiting to 5 parts per million the amount of DDT residues permitted in fish shipped across state lines.
- Senator Philip A. Hart (D–Mich.), chairman of the newly created Energy, Natural Resources, and Environment subcommittee, says he plans to conduct hearings on pesticide problems of the Great Lakes. The hearings were scheduled to begin on 19 May in Washington and at a later date in Michigan.
- Recent federal action has its counterpart in state activities. Some states, including Michigan, have moved to bar or limit the uses of DDT. In March Sweden banned the use of DDT for 2 years, becoming the first country to do so.

There are signs that a counterattack by pro-DDT forces is also developing.

The National Agricultural Chemicals Association and several farm groups are defending DDT on the grounds that it has saved millions of lives against serious diseases and that it is a food production safeguard. They claim that DDT is the most effective and least costly of major pesticides and that there is a lack of hard evidence that current uses of DDT are harmful to man.

The FDA's seizure of DDT-contaminated Lake Michigan coho salmon opens a new area for federal pesticides regulation. Pesticide tolerance levels have been established for fruits, vegetables, meat, and other products, but, until now, the FDA has never set any standards for fish because no significant residues were ever reported. Evidence is now mounting that pesticide residues ranging up to 19 parts of DDT per million and lesser amounts of dieldrin are accumulating in at least one species of Lake Michigan fish—the coho salmon. The introduction of the coho, a Pacific Coast species, into the lake less than 5 years ago has produced a major sports fishery. FDA officials have found that the Lake Michigan coho salmon accumulate DDT residues at substantially higher concentrations than other fish in the lake do, but they are not sure why. Scientists in the Interior Department's Bureau of Commercial Fisheries say the coho may collect relatively large amounts of DDT because it comes high in the food chain; it is a predator fish that may accumulate the pesticides stored in the marine life it eats. Scientists say the DDT tends to concentrate in the coho's fatty tissues, and dissipates very slowly.

Recently there has been increased emphasis on limiting the use of DDT until more is known about its harmful effects on fish, wildlife, and man. A chief complaint is that DDT seems to have a higher residual effect than many pesticides and may persist in a toxic form for many years. In this country there is no such federal ban, but a few states are placing, or have already placed, restrictions on the use of DDT. On 16 April, Michigan's department of agriculture announced that it plans to limit the sale, shipment, and use of DDT in that state by canceling DDT manufacturers' licensing registrations (the regulation is expected to become effective 1 July). Michigan, which was in the process of planting some 3 million coho fingerlings in its streams, was forced to delay its program. Scientists discovered that the salmon used for spawning contained more DDT residue than the salmon caught by fishermen in open waters. Arizona now has a 1-year ban in effect. Pennsylvania and Illinois are considering pesticide control legislation, and Wisconsin, which has resumed its DDT trials (see *Science*, 7 February), could be moving in that direction.

Despite the attempts elsewhere to limit or ban the use of DDT, the FDA's recent action has raised considerable controversy. Some of the dissent is coming, as might be expected, from farmers, pesticide manufacturers, and the commercial fishing industries. House Minority leader Gerald Ford (R–Mich.), who represents a district where salmon are packed for commercial shipment, is particularly upset. Ford says the FDA should set tolerance levels before it begins seizing fish, not afterward. FDA's action has also left state fish and wildlife officials somewhat dismayed. Although the FDA has no authority to seize fish that are not sold in interstate commerce, its action affects state government activities in this area. The governors of five of the Great Lakes states have asked HEW Secretary Finch not to allow the establishment of federal DDT tolerance levels in fish until the states have studied the matter. They want to make sure that federal action does not impinge on their own regulating and control procedures.

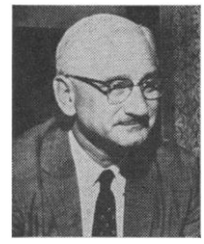
Attempts to limit the use of DDT have been increasing at the federal level. Senator Gaylord Nelson (D–Wis.) and representatives Joseph Karth (D–Minn.) and Bertram Podell (D–N.Y.) have introduced bills to bar the use of DDT in the United States. In addition, Nelson has introduced a bill calling for establishment of a national commission on pesticides, to coordinate government research, monitoring and control programs.

The 11-member federal commission that Finch has named plans to begin its study soon. It is chaired by Emil M. Mrak, chancellor of the University of California at Davis, and includes Paul Doty, professor of biochemistry at Harvard; Lamont Cole, professor of ecology at Cornell; and Julius Johnson, research director for Dow Chemical Company.

These recent government actions, to limit or ban the use of DDT and to investigate the broad general effects of pesticide use in the environment, could lead to whole new concepts about how pesticides should be used.

—MARTI MUELLER

APPOINTMENTS



A. B. Sabin

H. I. Adler

Albert B. Sabin, distinguished service professor of research pediatrics at the University of Cincinnati and chief of the division of virology and cancer research at Children's Hospital Research Foundation, to president of the Weizmann Institute of Science, Israel. . . . **Howard I. Adler**, bacteriologist at the Oak Ridge National Laboratory, to director of the biology division at ORNL. . . . **John D. Kemper**, professor of mechanical engineering at the University of California, Davis, to dean of the College of Engineering at Davis. . . . **Sol Spiegelman**, professor of microbiology at the University of Illinois, to director of the Institute of Cancer Research at Columbia University. . . . **Charles K. Bockelman**, professor of physics at Yale University, to deputy provost for the sciences at Yale. . . . **J. Robert Buchanan**, associate dean of Cornell University Medical College, to vice president of the New York Hospital–Cornell Medical Center.

RECENT DEATHS

Clifford C. Furnas, 68; president emeritus of the University of Buffalo; 27 April.

Julian W. Giles, 46; director of the Veterans Hospital, Tuskegee, Alabama; 20 April.

Nicholas E. Golovin, 57; technical adviser for aviation and space science and technology in the Office of Science and Technology, Executive Office of the President; 27 April.

Emanuel Greenspon, 60; retired general surgeon at Mary Immaculate Hospital, Newport News; 25 April.

Carl M. Herget, 56; chief of the biophysics laboratory at Edgewood Arsenal; 24 April.

Henry C. Taylor, 97; first chief of the Bureau of Agricultural Economics in the Department of Agriculture; 28 April.