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Test Site for Germ Warfare?

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Last October Democratic Senator Jim Sasser revealed that the U.S. Army plans to build a \$1.4 million biological weapons test laboratory that will conduct secret research on "substantial volumes of toxic biological aerosol agents." The news sparked protest among scientists who fear the facility will violate the 1972 Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons. Harvard University microbiologist Richard Goldstein spoke for many of his colleagues when he told *Science*, "In my mind, the opening of this facility substantially escalates the biological arms race." The Defense Department explained that the purpose of the research will be defensive, which is permissible under the treaty, and that the tests will be carried out under conditions of utmost safety.

The project was temporarily stalled when a lawsuit brought by a Washington-based research group forced the department to assess the need for an environmental impact report before construction could begin. In early February the Army concluded that no such report was needed. In the next few weeks the U.S. District Court in Washington will hear the case.

The new laboratory is the centerpiece of a \$250 million modernization and expansion program at Dugway Proving Ground, a chemical and biological weapons research complex located eighty-seven miles from Salt Lake City. Dugway's workload is expected to double by 1988, according to the Army, and 309 employees will be added to its payroll.

The proving ground's history gives little reason to trust in the Defense Department's characterization of the research to be conducted there. In the 1950s and 1960s, the University of Utah conducted secret experiments under contract with Dugway, involving large-scale field testing of some of the most infectious and toxic biological warfare (B.W.) agents, including tularemia, Rocky Mountain spotted fever, plague and rickettsia ("Q-fever"). The tests are the only known outdoor dissemination of B.W. agents near populated areas. Because they were subject to Army censorship, it is unknown if full test results have ever been released.

The testing of chemical weapons at Dugway caused a furor when an accidental discharge of nerve gas killed thousands of livestock in 1968. Information about the field tests of B.W. agents came out in 1969, when William Lockhart, a professor of law at the University of Utah, obtained documents relating to them in the school's research office.

According to the documents, which included the research contracts, correspondence and memorandums, the tests were designed to track the spread of various disease-causing agents. The germs were transmitted by insects, and their course was charted by tabulating the location and number of wild animals infected. Animals were also infected in aerosol chambers. The Dugway experiments were intended to collect data on how B.W. agents behave outside the laboratory. The lack of such information had prevented their use on the battlefield.

The research contracts refer to "primary areas of biological agent release" and to animal testing "at appropriate distances downwind from such areas"—strongly suggesting open-air spraying. Lockhart says that the university probably became involved when Dugway requested its help to track the spread of disease-causing agents to areas outside the facility during earlier tests.

The Army was fully aware that the diseases might spread outside the test zones to populated areas. One contract states, "It will not be possible to prescribe safety parameters to preclude the spread of [diseases] to livestock or humans." Another calls for analysis of "morbidity surveillance data regarding . . . geographical spread beyond focal areas and/or the Dugway Proving Ground geographic limits." The data would be used to determine "the initiating . . . and spread of infection from wildlife to man or his domestic animals." The researchers concluded, "The best control procedure is the passive one of doing nothing, other than surveillance, and allowing the [disease] to come to its own natural termination."

Biophysicist Robert Sinsheimer, chancellor of the University of California, Santa Cruz, called the tests irresponsible. "I don't know of any other instance of this kind of experiment," he said.

At the University of Utah, however, researchers regarded the tests as proper, according to an internal memorandum, because the diseases studied were endemic to Utah or nearby states. But as Sinsheimer points out, "If [a disease] is endemic and a problem, you don't want to increase the problem."

When the biological weapons tests were discovered in 1969, there was so much criticism that by 1971 the university decided to greatly restrict its secret research for the Army. But unlike the Dugway nerve gas incident, the revelations of

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B.W. tests drew little attention beyond the university, and the controversy was forgotten after President Nixon signed the biological weapons convention. Last year, however, opponents of the new Dugway lab revived it.

Whether secret outdoor tests of B.W. agents took place in other parts of the country is unknown. However, reports surfaced in the 1970s that the Army conducted outdoor tests in several large cities with "simulants"—relatively innocuous organisms that mimic the behavior of B.W. agents—during the 1950s and 1960s [see Leonard A. Cole, "The Army's Secret Germ-War Testing," *The Nation*, October 23, 1982]. Simulant tests are believed to have caused several illnesses and at least one death. In view of those tests and the ones at Dugway, the Army's protestations that it is concerned about public safety and is testing only for defensive purposes must be regarded with considerable skepticism.

In its request to Congress for funding, the Army said the laboratory would be used "to evaluate biological defensive readiness and to test protective gear and detection/warning equipment by employing toxic microorganisms and biological toxins requiring a level of containment and safety not now available within the Department of Defense."

But those claims have never been subjected to public scrutiny. Although appropriations for such a facility are normally debated by Congress, the Defense Department sidestepped that by burying the funding request in a routine application to transfer unspent funds from other Army projects. Such requests are typically rubber-stamped by the ranking Republican and Democrat on the House and the Senate Appropriations Committees' Subcommittees on Military Construction. Senator Sasser had done so but then took the extraordinary step of withdrawing his assent. In a letter to subcommittee chair Mack Mattingly, Sasser complained that there was no statutory authority for the project and that it raised "important questions with regard to the potential capabilities for testing and production of offensive lethal biological and toxin weapons." He concluded that the Army sought "to avoid the regular authorization and appropriation process of the Congress."

At Mattingly's urging, the subcommittee members voted to override Sasser's objection. In a letter to Sasser, Secretary of Defense Caspar Weinberger said that the lab would not be used to develop offensive biological weapons and that the Defense Department did not intend to violate the 1972 B.W. convention. But even the military acknowledges that the difference between offensive and defensive B.W. research is a tenuous one. Many leading scientists question the need to test such agents for purely defensive purposes. Harvard University biochemist Matthew Meselson, one of the country's foremost experts on chemical and biological warfare, says that simulants could provide more useful information than actual agents, without the risk.

Many scientists contend that truly defensive work can and should be done openly. They believe that the Defense Department's acknowledgment that the lab will be used for secret work suggests that the department intends to develop offensive weapons. A further concern is the possible use of the lab to conduct experiments in recombinant DNA (gene-splicing), which molecular biologist and Nobel laureate David Baltimore says should be completely ruled out for the most toxic organisms. Gene-splicing could be used to refine existing biological agents to create, for example, greater potency or resistance to antibiotics [see Piller, "DNA—Key to Biological Warfare?" *The Nation*, December 10, 1983]. Although the Army says no gene-splicing research is projected at this time, neither has it been ruled out. Weinberger has defended the lab as essential to counter a perceived Soviet advantage in genetic engineering. In addition, the use of aerosol sprays in DNA experiments is opposed by most scientists. "Aerosols are the most dangerous vehicle for dissemination," according to David Novick, a molecular biologist and former member of the Federal committee that oversees recombinant DNA work. He said that Federal guidelines on such research call for the absolute avoidance of aerosols because of the greater likelihood that some organisms would escape.

The Army claims that testing will be carried out under complete physical containment, but Novick says that

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is "a theoretical as well as practical impossibility." Biological containment—genetic crippling of potentially dangerous organisms to make out-of-lab survival impossible—is required under gene-splicing guidelines, but it would be antithetical to the testing of biological warfare agents.

After the subcommittee approved funding for the lab, the Foundation on Economic Trends, headed by Jeremy Rifkin, an author and critic of genetic engineering, and Gene La Rocque, a retired Navy admiral and director of the Center for Defense Information, filed suit to bar construction. They charged that the Defense Department had violated the National Environmental Policy Act by failing to prepare an environmental impact report.

Rifkin points out that besides being so near a major metropolitan area, Dugway is the site of a conventional-weapons testing range. That raises the additional concern that dangerous microorganisms could be released should a projectile accidentally hit the lab. Rifkin believes his organization's suit will force the Army to give up the idea of testing B.W. agents because the environmental safeguards required by law cannot be implemented.

But even if the suit is successful, research in biological and chemical agents is likely to continue, following a familiar pattern established by the Reagan Administration in other military areas. To a relentless drumbeat, Soviet strength is exaggerated while equivalent U.S. capabilities are minimized. Using that method, the Administration has in each of the past three years nearly succeeded in getting Congress to renew the manufacture of nerve gas, which was halted by President Nixon in 1969.

Now the military's sights are set on biological warfare. As "yellow rain," the toxic substance allegedly used by the Russians or their allies in Indochina and Afghanistan, receded from the headlines, the Administration found a new enemy: Soviet genetic engineering. On at least a dozen separate occasions last year, during which funding for U.S. military biotechnology research mushroomed, the Defense Department and the Central Intelligence Agency accused the Russians of using gene-splicing to create new biological weapons. In his letter to Senator Sasser, Weinberger wrote, "We continue to obtain new evidence that the Soviet Union has maintained its offensive biological warfare program and that it is exploring genetic engineering to expand their program's scope."

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Representatives for the Defense Department admit the evidence falls far short of proof, but most information is classified. When I made a request under the Freedom of Information Act for material to verify the Administration's claim about Soviet genetic engineering experiments, I received hundreds of pages from the Defense Intelligence Agency and the C.I.A. Nearly every reference to Soviet military work in genetic engineering had been censored.

Not that those agencies are opposed to selective leaks. Last year, syndicated columnist Jack Anderson and *Wall Street Journal* editorial writer William Kucewicz published stories based on classified information "proving" that the Russians were using genetic engineering for military purposes. Although considered unsubstantiated and one-sided by knowledgeable scientists, the articles gave the military's scare campaign a major publicity boost.

More important than the verity of those articles is their relationship to repeated allegations—in support of the new lab and in connection with many previous projects—of violations of the B.W. convention by the Soviet Union. The Administration's charges were publicly disputed by Paul Warnke, Gerard Smith and Herbert Scoville Jr., former arms control advisers to four Presidents. Even if true, they argued, the allegations should first be made to the Russians privately. The Administration's talk of treaty violations without demonstrable proof arouses suspicion that its real motive is to frighten Congress into approving money for new weapons.

Speaking about yellow rain on public television's *Nova*, Harvard biochemist Meselson said U.S. accusations could make verifiable agreements impossible, either because the negotiating atmosphere will be poisoned or because enough U.S. senators will be persuaded to scuttle ratification. "Treaties should be based . . . on verifiable provisions," he said, "but these allegations have muddied the waters and hang as a miasma over the negotiation process."

Given its unsavory history, the same miasma hangs over Dugway Proving Ground. □

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