Fort Detrick: A Top Laboratory Is Threatened with Extinction

Fort Detrick, a biological warfare center which is probably the nation's largest and most sophisticated facility for research in microbiology and aerobiology, is headed for mothballs and can be taken over for a song. Yet no one seems to want it—at least not badly enough to pay the cost of operating the mammoth complex in Frederick, Md., some 50 miles northwest of Washington, D.C.

Detrick has been nervously awaiting its death sentence ever since President Nixon announced, on 25 November 1969, a total renunciation of offensive biological warfare. The Army subsequently declared Detrick "surplus" and a number of high-level scientific committees and government officials have trooped through the place seeking to determine whether the military laboratories might be converted to civilian work.

Civilian Use Recommended

Several agencies, notably the National Institutes of Health, the Department of Agriculture, and the old Environmental Health Service (which has since been transferred to the new Environmental Protection Agency), indicated last year that they could, indeed, make good use of parts of the Detrick complex. What's more, two expert scientific committees that studied Detrick—a panel of the President's Science Advisory Committee and a group put together by the National Academy of Sciences—unequivocally concluded, according to Detrick and congressional sources, that the facilities are so valuable that they should be saved and put to use. Yet, in the 14 months since Nixon's announcement, all efforts to find the $15 million or so in annual operating costs needed to keep Detrick going seem to have failed.

Last fall the Army publicly stated that it planned to cut the number of civilian employees at Detrick to a minimal level of 240 personnel by 30 June 1971, thus essentially closing down the biological research facilities. Detrick could still be saved by a last-minute infusion of funds from any number of sources—the White House, the Office of Management and Budget, the Congress, or even the Defense Department itself. But Detrick's supporters on Capitol Hill acknowledge that the installation's fortunes are "at a low ebb" and that the prognosis is not particularly favorable.

Meanwhile, the staff and facilities are shriveling away. The number of degree-holding scientists and engineers has dropped by roughly 25 percent, from about 400 to about 300, since Nixon's announcement 14 months ago, while the total number of civilian employees has dropped by 33 percent, from about 1600 to about 1050. (There are also about 160 military personnel at the laboratories, a number which has not changed greatly over the past year.) With the exodus of personnel, 63 of Detrick's buildings have been vacated, including 21 laboratory buildings which have been decontaminated to render them safe for occupancy by another tenant. Ironically, two brand new facilities—a $1.6-million microbiology wing and a $2.2-million animal holding laboratory—could end up being abandoned shortly after completion.

In the eyes of some scientists who know Detrick well, mothballing the facility would amount to a blunder of tragic proportions. J. Roger Porter, chairman of microbiology at the University of Iowa College of Medicine and chairman of the Academy team which looked into Detrick, considers the facilities "one of a kind in the world." Porter told *Science* that Detrick is a "national asset" which could easily be converted to civilian work and he expressed "disappointment" that Detrick seems to be withering away because of "interagency squabbling" over who is willing to pick up the tab for operating the place. "The whole damn bureaucratic system is so bogged down that it's producing a sad situation for science and for everyone else," he complained. Similarly, another prominent scientist who has looked closely at Detrick called it "very shortsighted" to let the place close down for lack of a few million dollars in annual operating funds. "If Detrick is mothballed or dismantled it will probably be a long time before that kind of capital investment is made again," he warned. "In a number of fields, facilities such as those at Detrick will be required before important progress can be made."

Riley Housewright, former scientific director at Detrick and former president of the American Society for Microbiology, is even more emphatic in his denunciation of the fate that seems to be befalling Detrick. He says it would be "a blunder—a terrible mistake—to let all those facilities just rust because no one has had the forethought to plan for conversion." Housewright is rather bitter that the pressures to abandon biological warfare became so great that the Administration was "more interested in seeing Detrick closed than in making any constructive move to determine what else it could be used for." As a result of discouragement over the nation's repudiation of the kind of work he had performed at Detrick for 26 years as well as discouragement over his inability to line up any substantial amount of civilian work for Detrick, Housewright resigned his position last summer to take a job as vice-president and scientific director of Microbiological Associates, Inc., a private firm in Bethesda, Md. "I didn't care to preside over the demise of the place," he explained.

What Detrick Has

What has Detrick got that makes some scientists wax so enthusiastic over its potentials for civilian use? The answer is that it has some facilities which appear to be unique, at least in terms of scale, and others which are certainly scarce. It also has a competent research staff, which has pioneered in the science of aerobiology, developed a number of vaccines and toxoids, as well as lethal germ weapons, and published some 1400 or 1500 papers in the open literature since 1946. However, most scientists who proclaim Detrick's possibilities think primarily of the extraordinary facilities and only secondarily of the personnel.

Detrick occupies some 1230 acres of federally owned land, about half of which is used for buildings and half of which is open land currently leased to local farmers. The post contains some 460 structures, with a total area

of 2.2 million square feet, ranging from sophisticated laboratories to decaying housing to a bowling alley. The replacement value of the land, buildings, and equipment was estimated at $190 million on 30 June 1970.

The part of the installation which is in danger of being mothballed is that which has been exclusively concerned with biological warfare. The post also has several smaller tenants—an Army medical research institute devoted to infectious diseases, an Army reserve armory, and a Signal Corps communications center—that will apparently not be affected by whatever happens to the main part of Detrick.

The installation's most striking facilities include the following:

► The most sophisticated containment facilities for handling infectious materials that Housewright has ever seen or heard of. Many Detrick laboratories are a maze of barriers designed to permit men, animals, equipment, air, liquids, and solid wastes to move in and out without permitting the passage of microorganisms. The buildings are subdivided into areas of different degrees of contamination; the movement of air is always from less contaminated to more contaminated areas; and there are ultraviolet air locks, change rooms, and disinfectant showers separating the various zones. Detrick makes wide use of the so-called "Class III" safety cabinets—gas-tight enclosures which have rubber gloves attached and a system of pass boxes and autoclaves (superheated steam devices) designed to contain hazardous materials completely. All effluents—liquid, air, and solid—are heat or steam sterilized, and local lore has it that a post commander once offered to drink Detrick's sewage to prove to skeptical reporters that, while it might taste bad, it was perfectly safe to ingest. Detrick's safety features are considered so advanced that a two-volume book of design criteria developed at Detrick has been used as a model for building such other high-hazard facilities as the Lunar Receiving Laboratory in Houston, the National Cancer Institute's Emergency Virus Isolation Facility, and the Department of Agriculture's National Animal Disease Laboratory, among others.

► A 1-million-liter gas-tight sphere which an official Army publication claims is "unique in the free world." The sphere is the largest in a series of chambers at Detrick that have been used for studying what happens to aerosols of pathogenic microorganisms under varying conditions of humidity, temperature, and pollution. Animals can be exposed to controlled aerosols in many of these chambers and then held for subsequent observation and testing. One laboratory has a mirror which follows the sun and directs its light into an aerosol chamber so as to observe the effect of sunlight on airborne organisms. Detrick scientists believe the various spheres could be used to study the transmission of respiratory diseases or the behavior of air pollutants.

► Pilot plants which can produce bacteria, viruses, and tissue cultures on a scale which "very few places, if any, can match" in Housewright's opinion. Housewright notes that work on several viruses implicated in cancer has been seriously slowed by lack of a large supply of the viruses. "People doing the work have had to stop and grow them," he says.

► Extensive animal facilities. In addition to the new $2.2-million holding laboratory, which is designed to house animals that must be observed for months or even years, Detrick has an animal farm which can produce annually some 900,000 mice, 50,000 guinea pigs, and 2500 rabbits and can at the same time condition some 4000 monkeys. There is also a large "corral" area for holding larger animals such as horses, cattle, and sheep.

Roadblocks to Conversion

If Detrick is such a red-hot facility, what's been blocking its conversion to civilian uses? The chief problem, it seems, is money. Pentagon officials say the Department of Agriculture has agreed to take over a tiny part of the complex devoted to plant studies. And the National Institutes of Health has said it would like to perform a small amount of research at Detrick. But apparently no agency wants to divert from its existing budget the $15 million or more needed to keep Detrick functioning at a reasonable level. And neither the Office of Management and Budget nor the Congress has thus far been willing to provide special funds to any agency to take over Detrick. Last year the Senate passed an amendment, sponsored by Maryland senators, that would have given the Department of Health, Education, and Welfare (the parent agency of NIH) $15 million to operate the facility in fiscal 1971, but the amendment was killed in a budget-paring House-Senate conference.

Other problems which are said to be blocking the conversion of Detrick include Detrick's inconvenient distance from metropolitan Washington; the reluctance of some civilian scientists to be associated with a place that once engaged in the "dirty" business of biological warfare; and the fear by some agencies that Detrick, once taken on, would become an albatross that could not easily be dropped should budgets get even tighter in the future.

Detrick Too Exquisite?

Another key problem—cited by officials at NIH, the agency which has generally been regarded as most likely to find use for Detrick—is that "Detrick may be more than we need—it may be just a little too exquisite." Leon Jacobs, assistant director for collaborative research at NIH, said NIH probably "couldn't use" the 1-million-liter aerobiology sphere effectively in the study of airborne infections, though some of the smaller chambers might serve admirably. Moreover, contrary to some opinions expressed, Jacobs said Detrick is "not the hottest facility in the world. It needs a lot of repair work. Just because it's there doesn't mean it couldn't be improved upon considerably if you started from scratch." Jacobs also said that while some of Detrick's personnel might fit into any program NIH mounts there, he did not contemplate that NIH would want to take over the entire Detrick staff.

Still, the Detrick facilities could obviously be of unique value. NIH, in fact, has concluded that several high priority studies could be performed as well or better at Detrick than anywhere else, and the agency would consequently be willing to fund these studies out of its own budget. The studies would include research on extremely hazardous viruses, such as the Machupo, Marburg, and Lassa viruses; research on certain "slow" viruses which may cause chronic disease in man but which can only be studied if there are facilities for long-term holding of experimental animals; and various studies that would benefit from Detrick's large-scale pilot plant production of bacteria, viruses, and tissue cultures. Robert Marston, director of NIH, told *Science* this work would probably cost only $2 to $3 million a year—not enough to provide a "critical mass" at Detrick. Marston also said that if NIH were given additional funds and a particular justification, beyond the scientific opportunities presented, for using

Detrick (such as the desire to make Detrick a "model" of conversion), then NIH could do additional "useful work" there.

A number of separate forces are still struggling to save Detrick. Maryland's two Republican senators—Charles McC. Mathias and J. Glenn Beall—were recently joined by Democratic Senator Edmund S. Muskie, of Maine, in advocating conversion; a group of young microbiologists at Detrick has formed a committee to lobby for conversion; and some labor union officials have recently been exploring the possibility of locating a new occupational health institute at Detrick. The Defense Department is also considering several plans to keep certain unclassified research at Detrick so as to avoid shutting the place down completely. Several knowledgeable officials doubt that there will be any special money allocated for the conversion of Detrick in the fiscal 1972 budget that President Nixon will soon make public. But the question of an allocation for Detrick will definitely be considered by Congress during appropriations hearings on that budget later this year.

The ultimate fate of the installation thus remains to be determined. But the Detrick case has already made one thing painfully clear: conversion from war to peace is difficult to accomplish —even when one is dealing with a scientific facility that could redirect its programs almost overnight.

—PHILIP M. BOFFEY

Harvard: New President's Task To Unify, Preside Over Change

Cambridge, Mass. The appointment of Derek C. Bok, dean of the Harvard Law School, as the 25th president of Harvard University, is the first indication that the nation's oldest, richest, and most prestigious educational institution has begun to bind its wounds and enter an era of fundamental changes. Bok will take office in June replacing Nathan M. Pusey who has served since 1953. Pusey's tight-lipped conservative style has caused leadership in educational reform to pass in the last few years to a more dynamic counterpart at Yale, Kingman Brewster. Many Harvard students and faculty feel the appointment of Bok will mean that the Harvard president will again be a leading voice in American education.

Pusey took office during the McCarthy era when universities across the nation were under attack from the government. His skillful defense of the university during the middle 1950's provided comfort and inspiration to colleges around the country. Ever since 1961, however, when a major controversy reduced his prestige among the students, faculty, and powerful alumni, Pusey has become a more and more solitary figure. That incident involved the request of a Jewish couple to use the Harvard chapel for a marriage ceremony. Pusey denied the request despite the fact that Harvard and its chapel are nondenominational. Pusey's action aroused the ire of alumni, students, and faculty; a few of the senior faculty members even picketed Pusey's house to protest the action.

Since that incident, there has been a general feeling in Cambridge that Pusey has steadily lost the confidence of his students and faculty and has been reluctant to make public his views on political, educational, or other matters. The heaviest blow to his prestige came in April 1969 when he ordered police onto the campus to expel students who had occupied University Hall.

The effect on the college administration was severe. By June of 1970 all three of the top administrators—the dean of the faculty, the dean of the students, and the dean of the college—had resigned and Pusey himself had announced his intention to leave by June 1971, 2 years before he reaches the mandatory retirement age.

Against this background the Harvard Corporation set about looking for a new president. The corporation, comprised of seven alumni, is Harvard's top policy-making body. It grants tenure to faculty members, determines how Harvard's billion dollar endowment will be invested, and allocates income from that endowment to the various faculties at Harvard. The corporation also picks a new president, subject only to perfunctory approval by the Board of Overseers, an honorary body of alumni.

The corporation itself has come under attack during the last 3 years for being unresponsive to the needs and wishes of the college. The most notable example occurred last year during Campaign GM when the corporation, a large GM stockholder, voted to side with the management of GM despite the overwhelming opinion of the faculty, students, and alumni in favor of Ralph Nader's efforts to reform the company. This distrust of the corporation made its efforts to solicit student opinion difficult. Most of the more radical students at Harvard feel that the choice of the president makes little difference and that the problems of the university are inherent in its composition. They feel that any man the corporation would choose would serve the corporation's interest and that those interests are inextricably tied to the government and big business.

When the corporation set about looking for a replacement for Pusey it sought a man who could repair the deep divisions in the university. But the new president would have to deal with more than division. A whole range of issues would confront him upon taking office, issues on which Pusey had avoided taking a firm stand:

Curriculum Reform. The dean of the college, Ernest May, announced last year that he was considering major reforms in the undergraduate curriculum and asked for suggestions from members of the university. The suggestions he has received have been radical: reducing the 4-year requirement for a B.A. to 3 years; abolishing the B.A. degree altogether; and instituting a nonresident B.A. whereby students would take jobs across the country and return to Cambridge only to discuss their work and write papers on it. The faculty has already voted to permit students to create their own