

which American firms helped build in 1972, have been spotted in military use in countries such as Poland and Afghanistan.

Consultations are now under way with COCOM members to get them to stand behind the tougher U.S. policy. Officials expressed confidence that our allies would cooperate in the program and that the new initiative will make it a lot harder for the Soviet Union to obtain the high-technology items it wants. The officials did not speculate on what we would do next if our allies do not cooperate, but, said one, "We are committed to seeing that this kind of material does not reach the Soviet Union."

## What Is Siberian Ulcer Doing in Sverdlovsk?

After 2 days of bluster and denials, the Soviet Union has acknowledged that there was an outbreak of anthrax, a deadly cattle disease, among the citizens of the closed industrial city of Sverdlovsk last year. However, they contend that the disease resulted from eating infected meat and not from a germ warfare explosion, as the U.S. government has intimated. The State Department believes several hundred people died in the episode, but the Soviets have not confirmed any fatalities.

There has been speculation that the publicizing of the alleged disaster is part of an attempt by the U.S. government to stir up anti-Soviet sentiment following the Afghanistan invasion, a notion supported by a senior intelligence official, who told the *New York Times* that the timing of the news was "no accident."

However, a Russian science journalist told *Science* he believes the reports are true and that had it not been for a last-minute wind shift, many more people might have been killed. Mark Popovsky, who immigrated to the United States last year, said that in January he received underground communications from friends in Sverdlovsk who believe there was an accident at a nearby bacteriological warfare institute. "My sources told me the wind blew toward town but then turned around," said Popovsky through an interpreter.

According to Popovsky's friends, an explosion in a military compound north of the city created a poisonous cloud carrying anthrax bacteria. A number of employees of a nearby brick factory perished before they could be brought to the hospital, and victims died with high fevers. The epidemic lasted a month, causing about 1000 deaths. The friends reported that the government denied everything, then said a mistake had been made. They also said citizens of Sverdlovsk were subsequently vaccinated twice against anthrax. Popovsky said they recalled an earlier accident that occurred in the same place in 1958, in which fatalities were kept down by another wind shift. Said Popovsky, "They ask me until what time will God continue to save the city by changing the wind."

Popovsky, who spent several decades collecting information on the Soviet science establishment—much of it contained in a book, *Manipulated Science*, published last year—said the Soviets have been actively engaged in bacteriological warfare research ever since the signing of the first agreement to halt such work in 1925. He says a special secret bacteriological institute operated outside Moscow in the 1920's and 1930's and then was moved to an island in Lake Seliger, where it was camouflaged as an institute of cattle disease until World War II. When the war began, Stalin ordered the institute moved to Kirov, and subsequently a chain of institutes was established to study germ warfare. When Popovsky left the Soviet Union early last year, he says, he had definite knowledge of two such installations, in Kirov and Sverdlovsk, and tentative knowledge of two others, in Kalinin and Novosibirsk. (A British magazine carried rumors last October of a germ warfare accident in Novosibirsk.) "Everything I have said," concluded Popovsky, "gives me a basis to believe that what the American press is reporting is true."

Meanwhile, the sources of the State Department's information about the alleged accident remain obscure. Reports of the explosion first appeared in a German tabloid, *Bild Zeitung*, last October. But since then department spokesmen have indicated there has been corroboration from other sources. The matter is currently under discussion in Geneva, where the 1975

protocol against production or use of bacterial warfare agents is under review.

## Psychiatrists Study Three-Mile Trauma

The first anniversary of the Three Mile Island episode is now upon us (the accident officially began at 4 a.m. on 28 March 1979) and there is no end in sight to the postmortems. One of these is a study which is probably the first of its kind: a disaster survey of a nondisaster. Studies of the psychological aftereffects of natural disasters are common. But Three Mile Island is a case where no physical damage to the population or environs occurred; only psychologically does it rank as a trauma.

The President's commission on the accident reported, 6 months afterwards, that the incident had a demoralizing effect on large numbers of people. Now the National Institute of Mental Health is directing a survey to identify long-range psychological effects on those regarded as the most vulnerable members of the population. The study, headed by Evelyn Bromet of the Western Psychiatric Institute and Clinic in Pittsburgh, involves 1000 people living in the vicinity of Three Mile Island. They are divided into three groups: mothers of small children born within the year prior to the accident (most of whom followed the governor's advice to evacuate), unionized plant employees, and clients of the public mental health system who had been in treatment within 6 months prior to the accident.

Bromet's team of interviewers—all of them screened for antinuclear bias—have already completed phase one of the survey, in which respondents were asked general questions related to their emotional well-being and primary social relationships over the previous year.

Phase two, currently under way, involves reinterviewing all these people, with the idea of gaining a picture of their emotional well-being over the entire course of their lives. (Women who were pregnant at the time of the accident are not included in the survey because the state health department is conducting its own survey with them.)

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