

PUBLIC HEALTH

Defense Against B W

The large-scale polio vaccine inoculations given last spring point up a technique that might be used in case of enemy attack by biological weapons.

► WHEN A million and a half grade school youngsters lined up last May and June for shots in a large scale polio vaccine trial, they were unconsciously pointing up part of the nation's plans for defense against germ warfare.

The polio vaccine trials were primarily intended, as stated, to test the value of the present Salk vaccine and the possibility of stopping frightening, crippling polio epidemics.

Whether poliomyelitis has been considered as a germ warfare agent is one of those closely guarded secrets of the Department of Defense. It seems an unlikely choice because of the many unknowns about how it spreads and the relatively few persons attacked even during a big epidemic.

But it is no secret, now, that mass immunization like that in the polio vaccine trials is one of the weapons we are actively trying to forge against germ warfare.

The U. S. Public Health Service proposes to give additional research grants for studies of mass immunization, Surgeon General Leonard Scheele stated in recent testimony before the Senate committee on appropriations.

"In the event of enemy use of biological weapons, bacteria or others, the ideal control mechanism, if they got in with the weapons, would be to undertake mass immunization of the population," he said.

New Yorkers who lined up at doctors' offices and clinics to be vaccinated against smallpox a few years ago gave a small scale test of such mass immunization. That incident was not one of B W (biological, or germ, warfare).

It occurred when an unvaccinated man who had caught smallpox in Mexico reached New York and had an opportunity to expose unknown numbers of the city's population before it was discovered that he had smallpox. Vaccination of all New Yorkers was considered advisable to forestall an epidemic.

Dr. Scheele, in his testimony, referred to "certain unusual problems in relation to the kinds of agents that might be used" in B W. These problems, he said, "are of a classified nature."

So long as the agents, or disease germs, that might be used are kept secret, the nature of the problems can only be guessed at.

The polio vaccine trials, which were a mass immunization procedure, give a hint of a few. Foremost would be the matter of superfast quantity production. Unforeseen and unforeseeable production diffi-

culties in connection with the polio vaccine delayed start of the trials, as everyone knows.

Manufacturers of the vaccine were working against time, to be ready before the start of the polio season. But at that, they had months, whereas in case of an enemy B W attack, there would be only days or weeks at best.

Polio vaccine manufacturers had to transfer laboratory production methods to large-scale production methods. This is sometimes difficult enough in case of manufacture of chemicals or equipment. It is very much more difficult when dealing with living material such as germs and viruses.

Of course, producers of B W defense vaccines may only be called on to produce in larger quantities vaccines which they are already making, such as smallpox vaccine, material for immunizing against typhoid and typhus fevers, and the like.

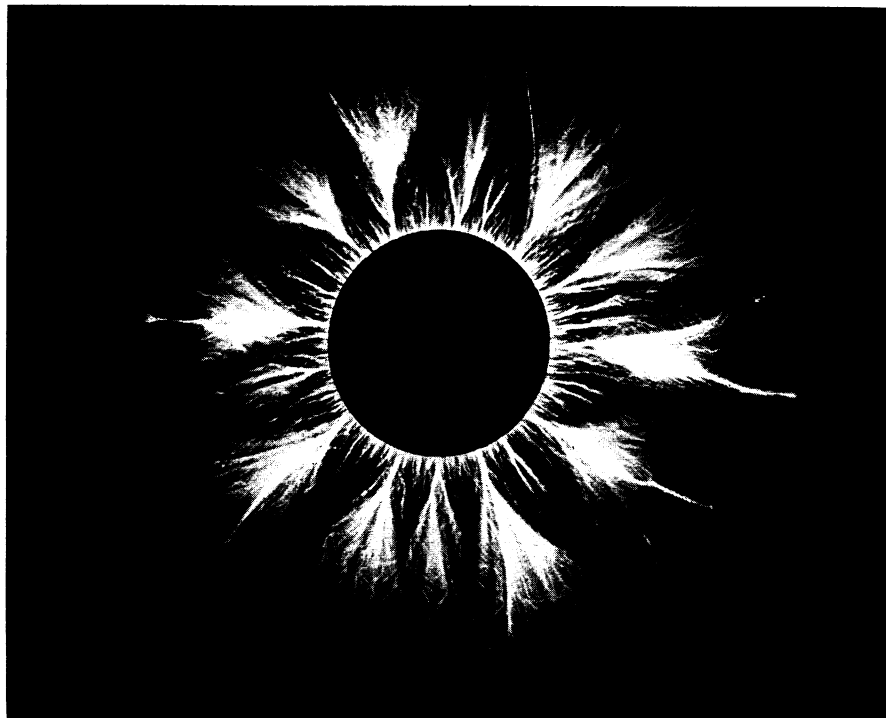
It seems more likely, however, that as in the case of the polio vaccine, entirely new vaccines, perhaps now being developed secretly in university laboratories, will have to be made. There is a good hint of this in Dr. Scheele's testimony that "we would like in this instance to give additional support to university and other laboratories to get them to intensify their programs, to expand their programs in this area."

In the case of one then relatively new vaccine, manufacturers have already put on a trial run of production against time. This was when two manufacturers each made 1,000 doses of vaccine against influenza in the record time of 22 and 23 days.

At the time, 1951, Public Health Service officials pointed out that this meant that a large number of laboratories could produce enough vaccine in short enough time to meet the needs of this country if threatened by the spread of a dangerous type of influenza from abroad. The virus used in the trial runs had been flown in from England.

So, while public interest in this year's polio vaccine trials centers around ability of the vaccine to protect our children from a naturally occurring germ enemy, more than a few scientists and pharmaceutical manufacturers are undoubtedly interested in them as practice for what might have to be done if B W is ever let loose on the land.

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ELECTRICAL SUNFLOWER—It is unlikely this "flower" will be found in any gardens this summer, but a General Electric engineer was able to "grow" it in the company's High Voltage Laboratory while doing research on lightning. He made the electrical sunflower photo during a test for measuring voltages. "Petals" of the flower are actually the electrical discharges around two terminals charged with an electrical voltage. To make the picture, photo film was placed between the two terminals, accounting for the circular center.