MEDICINE

Polio Protection Pill

Vaccine is not available for human use yet, but success is reported in getting one strain of poliomyelitis virus to grow in chick embryo where it loses virulence.

➤ A PILL to protect children against polio is on its way, it appears from results announced by Dr. Herald R. Cox of Lederle Laboratories, Pearl River, N. Y., at the opening ceremonies of the biochemistry and virus laboratory building of the University of California, Berkeley.

The pill will contain living polio virus "tamed" by growing through many generations, first in the bodies of suckling hamsters and then in hen's eggs.

Success in getting the MEFI strain, Lansing type of poliomyelitis virus to grow in the developing chick embryo was achieved by two groups of scientists at Lederle, Dr. Cox announced.

Monkeys and chimpanzees given this virus failed to show symptoms of polio, but developed protective antibodies against the virus that had been in the hamsters and against Lansing type strains of virus from two other institutions.

This accomplishment, Dr. Cox pointed out, does not mean that a vaccine against polio will be available at once. He stressed that no prediction can be made as to whether or when such a vaccine might become a reality.

If and when made, it will probably be given in pills or some other form that can be swallowed. This appears from his statement that, in his opinion, this would be the logical way to vaccinate babies and children against polio. The reason is that the pill method would be following the natural one in which polio infection comes through the digestive route.

The safety of this method was shown by another Lederle team headed by Dr. Hilary Koprowski. They fed a living polio virus, Lansing type, of low virulence to 20 human volunteers. None of the 20 got sick or had any temperature rise, though all were watched very carefully. All that were not immune to polio virus at the start of the trial developed antibodies to the Lansing virus, though not to other types of polio virus.

Antibodies are the substances developed in the blood that protect against polio virus. Many children and grown-ups have these protective antibodies, even though they have never gotten enough polio virus to be sick. The antibodies in the blood of most grown-ups are the source of the gamma globulin tried this summer for protection of children against the disease. This kind of protection, however, is not lasting and in Dr. Cox' opinion is only a stop-gap procedure.

The scientists who have, for the first time, succeeded in getting poliomyelitis virus to grow on chick embryos are Drs. Arden W. Moyer, Manuel Roca-Garcia and Victor J. Cabasso.

This achievement is considered important because it gives a way of growing the virus free of any possible contamination by other viruses or bacteria, and because it makes possible growth of the "tamed" virus on a large scale, which would be needed for vaccine production. Heretofore, the sources of polio virus have been either the brains and spinal cords of man, monkeys, chimpanzees and certain rats, or, more recently, cultures of human and monkey tissues.

The virus successfully fed to 20 human volunteers by Dr. Koprowski and associates was prepared from the brain and spinal cord of cotton rats. Studies of the mouth route for polio vaccination are being continued, Dr. Cox said, in conjunction with the California State Departments of Public Health and Mental Hygiene and the Hooper Foundation of the University of California.

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ATOMIC CANNON—This is the U. S. Army's newest weapon, the 280-mm. gun which is capable of firing either conventional or atomic shells. Here it is firing a conventional shell in a demonstration at Aberdeen Proving Ground. The gunner at the left, standing about 75 feet from the gun and with his back turned for protection from the blast, has just fired the gun by twisting the handle on the firing key.

TECHNOLOGY

Atom Cannon Has Double Recoil Mechanism

➤ THE REMARKABLE thing about the Army's atom cannon is the double recoil mechanism that is an essentially new application in artillery.

This weapon that fires a 280 millimeter (over 11 inches) diameter shell sits down upon the bare ground whereas lesser weapons have had to be bedded in dug pits. It neutralizes the energy of the firing first by movement of the gun itself. Then there is a sliding of the carriage itself that absorbs more of the energy. The whole mechanism slides back into firing position again.

The ease with which the new gun operates, the few minutes it takes to set it up for firing and the way it travels over rough grounds are results of years of planning and design.

A famous science institution in Philadelphia, the Franklin Institute, is not generally known as an incubator for weapons of war, yet out of the brains and laborious design computations of a small group of civilians there has come the new gun that can, if need be, hurl atomic bombs about 20 miles.

This group includes F. S. Chaplin, as associate director, A. O. Bergholm and A. O. Olander as engineers, Dr. Rupen Eksergian as consultant, Dr. N. H. Smith as director of the Franklin Institute Laboratories and George S. Hoell, recently retired as associate director. They did the intricate stress analysis and engineering which Army ord-