

PUBLIC HEALTH

Cutter Vaccine Mystery

Public Health Service, in long-awaited report, concludes that live polio virus in lots of vaccine from Cutter Laboratories caused some of the 79 cases of infantile paralysis.

► THE CUTTER Laboratories polio vaccine mystery is likely to remain a mystery.

This is clear from the facts given in the long-awaited report from the Public Health Service, Department of Health Education and Welfare.

True, the report concludes that development of polio in some of the 79 cases which developed after getting Cutter vaccine was the result of the presence, in infective amounts, of live polio virus in some distribution lots of Cutter vaccine.

Discovery of Type I polio virus in some of the vaccine by Public Health Service and other laboratories supports this conclusion.

This, however, had been pretty strongly suspected long before the official report of the 90-day study. The big question has been, how did the live virus get into the vaccine that was given to the children? (An estimated 401,000 children were reported to have gotten Cutter vaccine, although most of the polio cases were associated with only a few lots.)

That question is not answered by the report, which states:

"The exact reasons for the presence of infective amounts of live virus in some lots of Cutter vaccine could not be found."

If not found after the long and thorough study, the reasons are not likely ever to be found.

Details of Cutter Laboratories' method of making the vaccine are not given in the report. This may be for legal reasons, as given in the following note at the end of the report:

"Federal Law (18 U.S.C. 1905) prohibits public disclosure, not authorized by law, by officers or employees of the United States of information concerning business processes or operations obtained by them in the course of investigation."

The details of Cutter polio vaccine production that are not given are the ones doctors and other scientists might want to scrutinize to determine whether:

1. The vaccine became contaminated.
2. Manufacturing methods failed to kill the virus.
3. Safety tests of the final product were adequate.

On these points the official report states nothing was found to indicate that contamination was the trouble but that the study "did produce data suggesting the combination of inadequacy of virus inactivation and failure of the safety tests as responsible for live virus remaining undetected in the finished vaccine."

Before May 27, however, there were "fundamental weaknesses" in the safety testing procedures in general use, the report

points out. Also, other manufacturers had found inadequate inactivation was not unusual.

Whether Cutter Laboratories were having more trouble than other manufacturers and whether they should have asked the Public Health Service for help with this trouble are questions the report does not answer.

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METEOROLOGY

Tornadoes Made In Laboratory Box

► TORNADOES and the spiraling whirlwinds often accompanying intense forest fires have been made in miniature in a laboratory box by a New York University scientist.

James E. Miller, professor of meteorology in NYU's college of engineering, reports his experiments with the weather model in *Weatherwise* (Aug.).

A shallow pan of water fits in the center

of a circular box about two and a half feet across. A roof fan draws air from the chamber.

To make a model tornado, the water is heated, then fresh air is blown through two vertical slits in the wall so that it spins around the center. Steam from the pan begins to rotate slowly, and suddenly forms a sharply defined vertical column an inch or two in diameter with a hollow core.

Wisps of steam at the column's edge spiral upward quickly. Water in the pan bulges up a half inch or so in a miniature waterspout, and droplets are thrown violently outward.

To make the fire whirlwind, a can of Sterno, "canned heat," replaces the pan of water. Soon after the Sterno is lit and the blower turned on full force, a reddish circular column of flame roars upward about 18 inches.

In the model tornado and fire whirlwind, centrifugal force in the core clashes with rotational drag of air spiraling toward the center.

The laboratory model is based on ideas set forth by W. H. Dines, a British meteorologist, in 1896.

If a small balloon about an inch in diameter is dropped in the pan of water, Mr. Miller reports, the air circulation draws it toward the center, where it spins rapidly. Later it is picked up by the strong updraft in the center. Then, almost instantaneously, it is carried straight to the top of the chamber and thrown outward.

Science News Letter, September 3, 1955



MAN-MADE TORNADOES—A spiraling column of steam rises from a pan of hot water in the "tornado chamber" built by Prof. James E. Miller, who is at the controls. The scientist, a meteorology professor at New York University, has also reproduced the fire whirlwinds that often accompany forest fires in his laboratory box.