

MEDICINE

Steps to Polio Conquest

Earlier polio vaccines have been tried, but they failed, probably because not enough was known about the viruses that cause the disease.

► POLIO VACCINES have been made and hopefully tried in past years, only to fail. The road to conquest of poliomyelitis, or infantile paralysis, has been long and full of pitfalls.

Before Dr. Jonas E. Salk of the University of Pittsburgh was able to start the research toward his vaccine, many scientists had to dig for facts about the disease and its virus cause.

One of the early vaccines was made, as the present Salk one is, by killing the polio virus with formaldehyde to make it incapable of causing disease. First tests of that vaccine seemed highly promising. Some scientists think it might have succeeded if enough had been known about polio in those early vaccine-making days.

A second early vaccine was made from live virus, treated to weaken it. The scientist who made this one thought the virus had been weakened enough so that it could safely be given. Unfortunately, this proved not to be the case. Numerous cases of polio and numerous polio deaths occurred among children given that vaccine.

The disastrous results put a stop to all polio vaccine-making for a time. Conservative medical scientists grew even more conservative about the very idea of a polio vaccine and only as more knowledge of the disease and more research funds became available did they begin again to try for a vaccine.

Now, with greater knowledge, one has dared again to make a live virus vaccine though no large scale trials have yet been risked.

In the interval between vaccine attempts, chemical prophylaxis was tried. In this period, scientists almost all believed that the polio virus entered the body through the nose, and then traveled along the nerves of smell to the brain and spinal cord to kill nerve cells and thus paralyze. So some scientists tried a chemical blockade of the smell nerves.

This attempt to prevent polio failed, as did numerous attempts at treatment with various drugs to kill the virus after it got into the body.

Discovery of polio virus in intestinal wastes from patients and also, in a few places, in water supplies, led to the idea that epidemics might spread through drinking water, like typhoid fever. Flies and other insects were also, at this period, incriminated as carriers of the polio virus. Anti-fly campaigns and drives for purer water started. These undoubtedly were useful for improving hygiene and sanitation, but they did not stop polio.

Breaks that led to Dr. Salk being able to make his vaccine were:

1. Discovery that there are three strains of polio virus and that being attacked by one does not protect against the others. The Salk vaccine, therefore, is made from the three virus strains.

2. Discovery that the polio virus circulates in the blood stream for brief periods before the onset of illness. This explained how there could be polio antibodies in human blood and dispelled the old, handicapping idea that only substances that got directly into nerves could fight the polio virus.

3. The Nobel Prize-winning discovery of a way to grow polio virus outside the body in non-nervous tissue. This gave a way to get enough virus to make the vaccine for the large scale trials last summer and, if it works, for vaccination of countless children in the future.

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Polio Is Ancient Disease

► POLIO IS no new disease. It took its first victims thousands of years ago. No matter how it is called, poliomyelitis, infantile paralysis, or polio for short, it is a scourge that has long been acrippler and killer.

To many Americans, polio history starts with the "strange epidemic" that hit the headlines in early summer of 1916.

But this sickness was crippling people, and killing some, thousands of years ago. Ancient Egyptian murals show pictures of persons with the familiar crippling that we see today in polio victims. A skeleton discovered in Egypt which archaeologists date at the period of 3700 B.C. shows bone formation of a kind that looks as if polio had crippled the limbs.

Whether polio struck in epidemics that long ago is not known.

The first record of a polio epidemic was in England in 1835. The first epidemic in the United States was in Louisiana in 1841. The number of cases, four in England and 10 in Louisiana, seem small by present standards.

Even now the total number of cases in an epidemic year is small by comparison with many other diseases. In 1952, the last big epidemic year, for example, polio cases totalled 57,879 while measles struck 683,077 and streptococcus infections hit 113,677 persons.

MEDICINE

Finds Kerosene Popular Children's Drink Today

► KEROSENE IS "one of the more popular drinks among children these days," Dr. Julian P. Price of Florence, S. C., declared at the meeting of the American Academy of General Practice in Los Angeles.

As a result, he said, every doctor knows how to treat child victims of kerosene poisoning. When a child eats rat poison, however, the doctor has the problem of determining what poison was in the rat killer, finding an antidote and then watching for complications.

Dr. Price urged the family doctors at the meeting to be prepared to treat this and other kinds of accidental poisonings. Accidents or accidental poisonings are the cause of one out of every three deaths in children over one year of age, he said. Each year 2,000,000 children are involved in an accident requiring medical attention. About 12,000 die and another 40,000 or 50,000 are permanently crippled or disabled.

Doctors should become safety minded in prescribing drugs. Dr. Price urged that specific directions be given the family and the druggist and that the mother should be told what the drug is for and how and when to give it.

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But the paralyzing, crippling deformities which the ancient Egyptians showed in their wall paintings and the fact that small children are so often the victims has made polio one of the most feared diseases of modern times.

Adding to this fear, until recent years, has been the helplessness of medical men to do much for polio victims, much less to stop epidemics or prevent the disease. Not even the sulfas or the antibiotics, so-called mold remedies, which have proved life-saving in so many serious diseases, have been able to rescue a single person from the onslaught of the polio virus.

In fact, it is less than 50 years since scientists first discovered that poliomyelitis is caused by a microorganism so small that it will slip through the tiny pores of a porcelain filter and which, therefore, belongs to the virus family of disease germs. It is only in the past decade that they discovered that there are three, but no more than three, polio virus strains, and that many polio-like summer ailments are not mild, non-paralytic cases of polio but are due to other viruses.

But in the past 50 years, and particularly in the past 25, scientists have learned many things that could be done to help polio victims survive and live useful lives in spite of paralyzed legs or arms.

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