

MEDICINE—PUBLIC HEALTH

Battling a Plague

Scientists, Liberally Financed From President's Ball, Seek Protective Vaccines, Sprays, and Immunity Tests

By WATSON DAVIS

NEVER before did men fight a disease plague with such planned scientific determination.

Never have two score disease fighters, good, careful and unemotional scientists, all of them, banded together so closely and yet so independently to learn all they could about a human ill—and perhaps to conquer it.

Never has a birthday done so much to make safer the lives of the little children of years to come.

It is Jan. 30, 1935. Music, dancing, gay young couples and distinguished men and women—it is a ball, festival of rejoicing to honor the President of the United States on his birthday—but more important a rally to fight a plague. F. D. R. has known and overcome infantile paralysis. No better birthday present to him could be imagined than provision of support for the fight upon infantile paralysis.

So after the ball was over, there was a war chest—not just funds for the careful nursing and reconditioning of bent bodies back to health, not just support for the hospital at Warm Springs, Ga., and dozens of similar local human repair shops—but money for research.

Dollars where pennies were lacking before—thousands of dollars and each dollar perhaps to save a life of a child yet unborn. It was \$241,000—thirty per cent. of the President's Birthday Ball proceeds. Dollars that meant crucial experiments could be made promptly and on a wide scale.

Militant Band

A militant band came into existence—a group of leading medical researchers marshalled by Dr. Paul de Kruif, bacteriologist-writer, he of "Microbe Hunters," and steered by an advisory medical committee consisting of Dr. George W. McCoy of the U. S. Public Health Service, chairman, Dr. Max B. Peet of University of Michigan, Dr. Donald B. Armstrong, of Metropolitan Life Insurance Company, and Dr. Thomas M. Rivers of Rockefeller Institute for Medical Research—disease fighters all. And Jeremiah Milbank,

well-known philanthropist, is acting chairman of the Research Commission.

Back of "The President's Birthday Ball Commission for Infantile Paralysis Research" is the Georgia Warm Springs Foundation itself with President Franklin D. Roosevelt as president; Keith Morgan, Equitable insurance executive, as vice-president; and Basil O'Connor, formerly President Roosevelt's law partner, as treasurer.

Money, hard work, imagination and enthusiasm do not necessarily assure the conquest of a disease. Scientists may work for years and not produce the preventive and curative measures that are so earnestly needed and desired. So the renewed attack on infantile paralysis that began in 1935 was made hopefully but with no guarantee of success.

The scientists knew that it was an infectious disease, but exactly how and why were riddles. They knew that if experimental animals could be protected, then there was a chance that the method would be safe and simple enough to use in combatting the epidemics that every year threaten our children.

Vaccine?

In fact, distinguished investigators brought forth evidence that vaccines prepared from the virus would protect experimental animals. Should they be tested on little children? That was the first great decision of the anti-polio campaign.

Vaccination prevents smallpox, typhoid fever is not contracted by those who have anti-typhoid inoculations, and there is successful immunization against diphtheria.

It was only logical to hope to develop similar protection against infantile paralysis. And over a period of years scientists had been working toward that goal when the President's Birthday Ball Commission of the Georgia Warm Springs Foundation began to finance the research on this disease on a more adequate scale in 1935 than ever before.

There were many riddles and much divergence of opinion.

Would a vaccine made from the virus, unseen and unknown because its size is beyond the reach of the microscope,

protect monkeys, only experimental animals that will contract the disease? Yes, said two groups of experimenters, and we are ready to immunize children.

Hold on, said other equally reputable scientists, infantile paralysis attacks relatively few children in a given community. It would be wasteful to vaccinate all of them. And for some reason entirely mysterious the bulk of the children, even young children, are naturally immune to this plague. Perhaps we can find some way to put our fingers upon endangered children and then immunize them if we find out how.

Actual Trial

There was an epidemic in 1935 and experimental protective vaccines were deemed ready for human trial by their protagonists. Two sorts were used rather extensively. One, the Park-Brodie vaccine, was given field trials in epidemic areas with the financial support of the President's Birthday Ball Research Commission.



ANCIENT

An important official family of sixteenth century Virginia—as the society page might say—is pictured here. They are the wife and charming daughter of Chief Pomeoc painted by John White for Sir Walter Raleigh. Note the Elizabethan doll with feathered hat carried by the little Indian girl.



MODERN

Miss Nellie Courtney, who is "one-half Kiowa Indian," examines one of the finer portraits in the Smithsonian's historic collection of painted Indians. The big chief with the pipe is Touch the Cloud, a Sioux, painted by Henry Ulke in 1877.

The vaccines did not do what was expected of them; they did not protect. Here was "negative knowledge." Scientists, good scientists, are quick to drop even pet projects when seemingly good ideas, careful work and high hopes are proved wrong. Enormous time, energy and money have been wasted in many fields of medical science by the perpetuation of use of various erroneous remedies and alleged preventives not subjected to critical scrutiny of other workers.

Inside a year research decks were cleared for new research. Grantees of the Commission, checking the original work, were unable to support the claim that formalinized vaccine protected monkeys or produced immunity in their blood. And the unvaccinated children of the 1935 North Carolina epidemic produced virus-neutralizing substances about as fast as the vaccinated.

Still Hope

Does that mean there is no hope of immunizing against infantile paralysis? Not necessarily. Dr. Sidney D. Kramer of Long Island Medical College, for instance, has a treatment that makes monkeys, normally 100 per cent. susceptible to the disease, immune. Half to three-quarters of those treated are protected. It is a very simple spraying of the nose

with a mixture of a pituitrin extract, ephedrine and adrenaline. And he is working also with a vaccine, an ingenious mixture of virulent virus with a serum that holds the paralyzing, fatal activity of the virus in check. These may be the solution. Tests will tell.

Chemical warfare is the present hope of preventing infantile paralysis. Nose and throat specialists are spraying noses with a chemical, zinc sulphate solution, to blockade the path of the submicroscopic marauders through the nerves of smell to the spinal cord and brain where they produce paralysis and sometimes death.

Immunization attempts had failed, both the earlier treatment with so-called immune blood serum and the later vaccines made from the virus. Probably one of the troubles was that the infantile paralysis virus lives in and destroys nerve tissue. It cannot be reached through the blood. Two research groups, one consisting of Dr. Maurice Brodie of New York City and Dr. Arthur R. Elvidge of McGill University, the other of Drs. E. W. Schultz, Harold Faber and L. E. Gebhardt of Stanford University, had demonstrated that it is through the delicate, hairlike endings of the nerves of smell high in the roof of the nose that virus invades the victim.

On two sides of the continent, quite independently, two investigators—Dr. Charles Armstrong of the U. S. Public Health Service at Washington, D. C., and Dr. E. W. Schultz at Stanford University, Calif.—hit upon the same idea. Would a simple, safe chemical applied to these nerves of smell protect the monkey or child against the disease?

Chemical Experiment

It did, in monkeys. Both found that alum or tannic acid would do the trick. Then both—and working independently still—found picric acid was even better. Dr. Armstrong and Dr. W. T. Harrison used the picric acid spray in the human epidemic in Alabama, Mississippi and Tennessee in the summer of 1936. And last winter and autumn Dr. Schultz searching for a chemical, better, conferring longer protection, and if possible less irritating, discovered that weak solutions of zinc sulphate sprayed in monkeys' noses conferred almost 100 per cent. protection against overwhelming inoculations of otherwise fatal infantile paralysis virus. And the protection lasted one or two months, not just a few days.

The experience resulting from the use of Dr. Armstrong's picric acid-alum preventive used in the South's 1936 epi-

ETHNOLOGY

Material In Museum For Gallery of Indian Art

THERE'S the makings of a national gallery of old American portraits at the Smithsonian Institution in Washington.

In other words, Indian paintings—hundreds of historic portraits—are scattered around the walls of curators' offices or stored carefully away. A few weeks ago, Herbert Krieger, curator of ethnology, selected a couple of hundred choice specimens, and made up an exhibit, so the streams of tourists who drift through Washington can get an idea of what a real Indian art gallery would be like.

First European artist who went in for Indian portraits was John White, who was told by Sir Walter Raleigh to make records of the strange natives in the Virginia colony region. White's pictures are treasured by the British Museum. The Smithsonian once had a painter copy them, and is almost as proud of the fine copies as if they were originals.

White was a better observer than artist. He once painted an Indian with two right feet.

Whatever you think of White's art, you can learn a lot about old-fashioned Virginia and Carolina Indians from his portraits. On many occasions, these Indians wore more paint than clothes, and White shows how varied were the body decorations. Looking at his pictures shows you why museum curators find it hard to be helpful when some historic-minded person writes in anxiously to say he is going to be an Indian in a southern historic pageant, and what should he wear.

Most prolific of historic Indian painters was George Catlin, whose brush recorded 3,000 figures, in portraits or scenes. The Smithsonian has 550 original Catlins.

An extraordinary person, George Catlin early in the eighteenth century grew so interested in Indians that he left his law office, his books, and his wife and set out to paint nothing but Indians. Journeying by canoe and packhorse, he got around the Plains country and the Great Lakes region and other Indian haunts, and managed to paint 48 different tribes.

Science News Letter, October 9, 1937

demic was encouraging. There was evidence that mass sprayings by mothers and fathers, certainly not skillful or positively protecting, nevertheless caused an