Scientists Had Much To Learn In Exhaustive Study of Polio

(Editor's note: Following is the last in a series of articles prepared by the National Foundation for Infantile Paralysis concerning gamma globulin and the foundation's steps toward control of polio.)

Pursuit of a control for paralytic polio began in earnest in 1938. But the road that led to gamma globulin started in a bog of misconceptions, then twisted and turned uphill all the way to the field trials of Provo, Utah; Houston, Tex., and Sioux City, Ia.

Scientists who sought to knock the paralysis out of polio had much to learn, and much to unlearn. They did know that polio was caused by a virus. But in 1938, when the National Foundation for Infantile Paralysis was born, the virology of polio was still in swaddling clothes.

Relatively few workers were qualified to conduct investigations in the polio field. Their tools were crude; their finances meager.

Serious misconceptions inherited by March of Dimes-supported scientists included the belief that the virus reproduces itself only in nerve cells and that it enters the body through the nose and mouth and then travels through the body only within nerve fibers.

So, beginning literally behind scratch, the National Foundation went to work to encourage and finance the training of more workers as well as to support basic research.

Paralysis Rare Exception

In time, these scientists learned that symptoms of polio might extend from a slight fever to paralysis or death. They learned, in fact, that a nonclinical or "silent" infection was the rule and paralysis the rare exception.

They learned that it was the digestive tract of man that served as the main portal of entry and exit for the virus; that man himself—not flies or cockroaches or bananas — was the chief reservoir of the virus; they learned the interesting fact that persons living in unsanitary, but apparently polio-free parts of the world, invariably had polio antibodies in their blood acquired from polio infections at an early age.

Much excitement was caused by the discovery that polio virus in the presence of specific antibody was incapable of causing the paralytic disease. This suggested that the role of antibodies might be employed in developing methods of polio control.

Time for Direct Attack

Throughout these years, most experiments with polio were carried out on rats, mice and a few monkeys. By 1948, with much of the underbrush of confusion cleared away, scientists supported by the March of Dimes had developed sufficient basic information and more critical tests of investigation to permit truly scientific techniques and a more direct attack on the goal of research—a method for the control of polio.

To make an adequate number of properly conditioned monkeys available for such experimentation, and to assure delivery of uniform animals to each laboratory so that the work of one laboratory could be compared with the work of any other, the National Foundation established a monkey-conditioning center.

The center provided housing for 3,000 monkeys. The supply and distribution system delivered to March of Dimes grantees more than 20,000 monkeys annually. This operation made possible many studies that have brought us to the point we have reached today.

More Than One Virus Type

At the beginning of this era, scientists had reason to suspect that human poliomyelitis might be caused by more than one type of virus. No problem has been of greater basic importance than the establishment of this fact. Any hope of controlling polio with preventive or curative drugs or vaccines demanded that science first find out exactly how many different viruses cause polio in humans.

The solution necessitated the monotonous repetition of the same technical procedures over and over again for three solid years. But at a cost of 1,370,000 March of Dimes dollars, the problem was solved. Findings revealed that there are three different types of polio virus. Scientists found that infection by one does not give immunity to the two remaining types.

We recall now the discovery that polio antibodies are present at an early age in the blood of persons living in the relatively unsanitary parts of the world where epidemic polio seldom strikes. We remember that such antibodies also are found in the blood of most adults, no matter where they live. These antibodies have been found in the blood of monkeys, after recovering from polio or after vaccination against it.

Since these antibodies in the blood are associated with immunity, it was of real importance to determine whether they form an essential link in the protection against paralysis, or whether they are a nonuseful by-product of infection.

A number of animal experiments followed. From these, scientists concluded that, if enough polio antibodies are present in the blood before infection, paralysis often could be entirely prevented.

This was the result in the laboratory. The next question—Will these antibodies protect human beings against paralysis?

Fortunately, other workers had already succeeded in extracting these antibodies from blood. This product, gamma globulin (also called immune serum globulin), had already proven effective against measles and infectious hepatitis. The Red Cross made this material available to polio researchers for the conduct of human field trials.

Human Tests Begun

As soon as gamma globulin could be made ready for use in the field, a March of Dimes grantee began tests among 55,000 children in Provo, Houston and Sioux City.

These tests yielded two important results: (a) an agent which, if it could be made available in sufficient quantity, man could use to protect himself temporarily against paralytic polio, and (b) a vastly important result—the knowledge that this protection could be attributed to antibodies circulating in the blood in such small amounts that they were barely detectable.

The bright promise of this achievement was dimmed by the fact that the protection is temporary and, even so, not nearly enough gamma globulin exists to inoculate everyone susceptible to the disease. The Office of Defense Mobilization has undertaken the difficult job of allocating the limited supply during the coming months. And, too, since gamma globulin gives protection against polio paralysis only for about five weeks, it is not the final answer. A practical vaccine, giving longer-lasting immunity, remains the goal of science in its fight to control polio.

Around Hollywood

By ALINE MOSBY
United Press Correspondent

(Editor's note: Vernon Scott, United Press Hollywood reporter, is substituting for Aline Mosby while she is vacationing.)

Hollywood —(U.P.)— The biblical bug has bitten everyone in Hollywood from DeMille to Zanuck. Now actor Tony Curtis wants in on the act.

The dark-eyed 'teen age idol who catapulted to fame in a few short years would like to play David, Israel's second king. Tony, however, doesn't want to follow in Gregory Peck's footsteps, portraying a mature monarch with a harem full of sloe-eyed wives.

"I'd like to bring the character of David, the boy, to the screen," he said enthusiastically. "My story would begin with the youth living in the clouds with a mind for nothing but poetry.

Great Climax

"It would be great," he said. "Just imagine the climax with David slaying Goliath."

Tony was reminded such a story would leave little room for romance. But the youthful actor straightened that out, too.

"There was an innocent love affair in David's life," he explained. "The young daughter of King Saul fell in love with David the first time she saw him, but it was hero-worship, sweet and naive."

Tony said he's all for a continued change of pace in his movie roles.

"I just finished work in 'Beachhead,' the first really rugged role I ever played. In the picture I'm one of two surviving marines who land on a Jap-held South Pacific island during World War II.

"But the story is so brassy and earthy," he grinned, "my romance with Mary Murphy is subordinate to the brutality of the film.

"One night some of the 'Beachhead' cast and crew started a game of charades," he recalled. "Mary Murphy made a stance, held out her hands as if she were aiming a slingshot and almost everyone shouted at once: 'David!'

Re-Read Story

"It started me thinking. David was not only romantic and dramatic, but one of the best known and most easily recognized characters in fact and fiction.

"That night I re-read his story in the Old Testament and by morning the idea was born. Now all I have to do is convince Universal-International to let me make the picture."

Phoenix Schools Schedule Opening On September 14

Phoenix — Phoenix schools, both elementary and high, will open on Monday, September 14, according to an announcement by E. R. James, superintendent of schools. The superintendent said buses will run on the same schedule as last year and he reminded parents of first grade pupils to bring their child's birth certificate and health certificate with them the first day of school.

Teachers will report September 8 for organizational meetings. The office of Grade Principal John Myers will be open the week of September 7.

Students new to the Phoenix high school are asked to register at the high school office the week of September 1 to 5. Former high school students and incoming ninth graders from the Phoenix grade school have already registered for their programs of studies and need not appear until September 14. On September 14, high school students are to report at the high school gym for the opening assembly at 9 a.m. Following the assembly they will obtain their daily program of studies, secure their books, pay their school fees and attend classes. Regular classes will get under way the following day.

Two New Teachers

Two new grade teachers have been elected for the coming year, Mrs. Jane Germer, to teach first grade and Mrs. Katharine Stancliffe, to teach the eighth grade. New high school teachers will be Byron Backes, social studies, and Ernest Skipworth, mathematics and science.

The school cafeteria will begin serving meals on Tuesday, September 15.

Classrooms and corridors have been redecorated and the grade school gym and cafeteria repainted during the summer. Old locker facilities have been replaced by new lockers at the high school.

Mrs. Marie Fisher has been employed as school secretary in the high school office.

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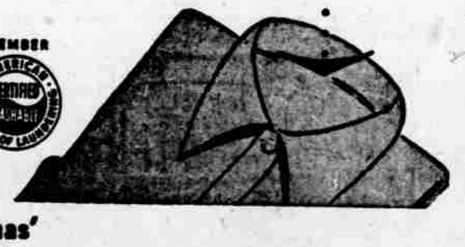
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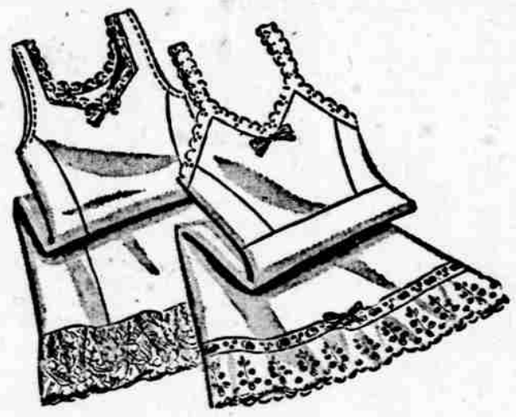

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