

MEDICINE

Debate Polio Virus Vaccine

THE LIVE VIRUS POLIO vaccine may soon make its debut.

Scientists have met to consider endorsing it for general use.

Behind whatever decision is reached by a National Foundation Committee will be the mass of information gathered at the World Health Organization's conference on live polio virus vaccine. (See SNL, June 27, p. 405; July 4, p. 3.)

The National Foundation brought together, in New York, the committee that recommended the field trial of the Salk vaccine. The committee was asked to determine whether or not the live virus vaccine should be recommended for general use.

The vaccine upon which the committee is expected to express an opinion was developed by Dr. Albert B. Sabin of the University of Cincinnati.

Dr. Sabin and the developers of two other strains of the vaccine, Dr. Herald Cox of Lederle Laboratories, Pearl River, N.Y., and Dr. Hilary Koprowski of Philadelphia's Wistar Institute, pooled information with leading experts from other countries using these strains. The meeting was called by the Pan American Sanitary Bureau and the World Health Organization. Evidence presented at the conference revealed that:

Mass vaccination with live virus vaccine on 2,250,000 persons in Russia went smoothly and safely. This was the summary of the report presented by Dr. M. P. Chumakov of the Academy of Medical Sciences, Moscow.

Use of the vaccine in Poland, Czechoslovakia, the Belgian Congo, Finland, the Netherlands, and in South American and North American countries, although on a smaller scale than the Russian program, resulted in protection against all three types of paralytic polio for those vaccinated.

Small scale trials in the U.S. revealed that the Cox strain, a single dose in cherry-flavored syrup, protected pregnant women from all three types of polio. The vaccine, taken by 139 pregnant women, the most susceptible to the disease, created safe antibody levels in 96.5% of the volunteers.

Another U.S. trial involving 550 showed that all three types of virus could be combined into one dose and still effectively produce polio fighters in the blood. It has been feared that the three types would interfere with each other's growth in the intestinal tract when fed in a mixture. Blood sample checks of 241 of the 550 persons indicates that the trivalent vaccine is 93% effective, Dr. Cox said.

Not all of the papers presented were glowing reports of the effectiveness of the vaccine, however. Dr. G. W. A. Dick, Queen's University, Belfast, Ireland, raised several questions to dampen the spirits of the researchers.

For instance, it is known that the live virus spreads from the vaccinated to persons in the immediate area. Whether or

not the virus, on its route from person to person, can revert to an active, crippling virus is not yet known. There have, so far, been no reports of such a case. On the other hand, there has been no proof that this does not or cannot happen, Dr. Dick emphasized.

He asked the three developers to suggest methods by which trials could be conducted to test every questionable aspect of the vaccine.

The United States Public Health Service is not entirely "sold" on the vaccine, either. Tests to date reveal that the vaccine is capable of producing paralytic polio in monkeys when injected into their spinal cords, Dr. Roderick Murray of the National Institutes of Health, Bethesda, Md., warned enthusiastic colleagues.

"We have a multitude of evidence to study now," Dr. Murray said. "The fact that it (the vaccine) causes paralysis in monkeys, which is one of our best tests of the vaccine's virulence, places it in a questionable position."

Even if the National Foundation backs the live virus vaccine for general use, it cannot be used in the United States until the Public Health Service grants a license to manufacturers. The PHS will not approve manufacture unless every questionable aspect of the vaccine is settled to its satisfaction.

Many scientists prefer the live virus vaccine to the Salk vaccine that contains killed virus because:

1. It produces longer immunity, possibly for a lifetime whereas the Salk vaccine protects for only several years.

2. The live virus vaccine can easily be given to adults and children—they simply swallow it.

3. It kills any polio infection in a person, preventing him from becoming a carrier of the disease to the unvaccinated.

4. The three types of polio virus can successfully be combined into one effective dose.

Meanwhile, as the number of paralyzing polio cases continues to climb this summer, the PHS has urged everyone to take advantage of the now available Salk shots.

Science News Letter, July 11, 1959

ASTRONOMY

Big "Eye" to Watch Stars Late This Summer

See Front Cover

THE WORLD'S second largest telescope should be looking more than a billion light years into space before the end of summer.

The mirror of the 120-inch "eye" at the University of California's Lick Observatory at Mt. Hamilton, Calif., is being coated with aluminum only two-millionths of an inch thick, equal to one-tenth of a wavelength of green light. After testing of the coated surface and installation of instruments, the telescope will start scanning the heavens.

It will explore much of the same region of space now within reach only of the 200-inch Mt. Palomar giant. By tackling problems different from those studied at Palomar, it is expected that the telescope will accelerate the pace of knowledge-gathering and understanding of the universe.

The telescope will be devoted at first primarily to studies of stellar evolution, especially through the observation of young stars, and to studies of faraway galaxies, the universes beyond the Milky Way that dot the depths of space.

The telescope project was started in 1947, and has been financed by appropriations amounting to some \$2,500,000 from the California legislature.

Dr. A. E. Whitford, director of Lick Observatory, said that the aluminizing step means the astronomers and opticians are finally satisfied with the optical qualities of the mirror. Grinding of the mirror started in 1953, and during the process some 900 pounds were removed from the four-ton mirror blank.

The painstaking job of giving the mirror an optical surface with an accuracy to at least five millionths of an inch, was supervised by Donald O. Hendrix, Mt. Wilson and Palomar Observatories, who did the final correction of the 200-inch mirror at Palomar.

The photograph on the cover of this week's SCIENCE NEWS LETTER shows Mr. Hendrix, now temporarily on leave to Lick Observatory, using a hand polisher on the mirror surface. The circle-and-triangle pattern is the ribbed back structure of the glass disc which will later be covered.

Science News Letter, July 11, 1959



VIRUS MAKING—Dr. George W. Sharpless of the Lederle Laboratories withdraws 1 cc. of weakened "seed" virus, later adding it to a special bottle containing monkey kidney cells. This is part of the live polio virus vaccine manufacture.