

## MEDICINE

# Medical Nobelists Named

Nobel Prize in medicine awarded to Drs. John F. Enders, Thomas H. Weller and Frederick C. Robbins, who discovered simple method of growing polio virus in test tubes.

► MILLIONS OF children and their parents in the United States and throughout the world will feel a close personal link to the 1954 Nobel Prize winners in medicine, because this award has been given to the men who primarily may be responsible for a vaccine to protect against the disease that makes crutch, brace, wheel-chair and iron lung cripples of many of its victims.

The men are Drs. John F. Enders and Thomas H. Weller of the Children's Medical Center, Boston, and Dr. Frederick C. Robbins of Western Reserve University School of Medicine and City Hospital, Cleveland.

These men were the first to grow the polio viruses outside the body in what the layman would call test tubes. Actually, the so-called test tubes are flasks in which body cells grow and live.

These are "tissue cultures," and the feat of growing polio viruses in tissue cultures has been called the "shining new tool of poliomyelitis diagnosis and research" by Dr. Hart Van Riper of the National Foundation for Infantile Paralysis.

These cultures, as used for viruses for the Salk vaccine now under trial, are cultures of monkey kidney and testicular cells.

Previously, scientists had believed that polio viruses could live and thrive only on cells of the nervous system in the brain and spinal cord.

Discovery by the Enders team that these viruses would live and grow in non-nervous tissue removed one of the big road blocks to development of a vaccine and, also, to a

relatively inexpensive method of isolating and identifying the polio virus and thus of diagnosing the disease in doubtful cases.

Heretofore, this could only be done by inoculating material suspected of containing the virus into live monkeys and waiting until the animals did or did not develop polio.

With the standard tests used before the Enders-Wellers-Robbins achievement, it took more than 30,000 monkeys and over one million dollars just to classify the three polio viruses.

Science News Letter, October 30, 1954

## TECHNOLOGY

## Radar Height-Finder Comes in Three Versions

See Front Cover

► A POWERFUL new radar height-finder is now being made by the General Electric Company, Syracuse, N. Y., for the U. S. Air Force.

The radar, its waves concentrated in a narrow beam like that of a searchlight, can detect planes three times as far as previous units of this type. Exact range is classified.

The radar height-finder is being used together with search radar to detect high-flying aircraft and to provide information on the distance, altitude and flight direction of these planes.

It is being made in mobile and fixed

versions, and in a radome structure for Arctic use.

The three versions are shown on the cover of this week's SCIENCE NEWS LETTER. The unit at left is mobile, the radome is in the center and the unit at right is for fixed installation in temperate areas.

The balloon-like radome is made of woven glass fabric impregnated with a rubber compound. It is supported by air pressure, about a half pound per square inch, and can withstand winds up to 125 miles per hour.

Science News Letter, October 30, 1954

## INVENTION

## Printed Batteries Power Printed Radio Circuits

► HIGH-VOLTAGE batteries now can be printed on a plastic card to power printed radio circuits.

This was revealed when patent 2,688,649 was issued to Johan Bjorksten of Madison, Wis., who assigned his rights to Bjorksten Research Laboratories for Electrochemistry, Inc., Madison.

Applied in layers, the printing "ink" contains a metallic powder of any magnetic substance such as iron, cobalt, nickel, or salts, oxides and alloys of these metals. After the layer has been printed, it is thrust into a magnetic field which aligns the metal particles and causes them to touch each other. The liquid medium in the ink dries, leaving only the metal particles, an electrolyte and a moistening agent.

Other layers then can be applied directly over the first by the same method. Since no fusion process is used to integrate the metal particles, the layers will not short-circuit. Different metals are used in alternate layers. The finished layers, which can be printed on any non-conducting surface—even paper, then are connected properly to yield a battery.

Science News Letter, October 30, 1954



DR. JOHN F. ENDERS



DR. THOMAS H. WELLER



DR. FREDERICK C. ROBBINS