

IMMUNOLOGY

Protection From Measles

Children can now be protected against measles with gamma globulin and vaccine simultaneously. Ten years may pass before vaccine alone can do the job, Faye Marley reports.

► CHILDREN can be safely and effectively protected against measles, it has been found.

Children, 1,500 of them, have been happy human "guinea pigs" to test the immunization methods, which consist of into-the-muscles injection of gamma globulin simultaneously with vaccine made with a live but weakened measles virus.

The tests were made in Baltimore, Md., and St. Joseph, Mo.

Dr. Fred R. McCrumb Jr. of the division of infectious diseases, University of Maryland Department of Medicine, Baltimore, told SCIENCE SERVICE that the real contribution of his group of researchers was in proving that the combination did not lessen the immunization power of the vaccine.

Gamma globulin is a blood plasma component that has long been used to weaken or modify the effects of measles, sometimes responsible for serious complications such as deafness and encephalitis, or inflammation of the brain.

But it was not until January, 1960, that Dr. McCrumb and his co-workers decided to try simultaneous injections of gamma globulin and a new live attenuated measles-virus vaccine, developed by Samuel Musser, associate director of biological research for Research Laboratories of Philips Roxane, Inc., St. Joseph. They did their first work in St. Joseph with 12 children and gave the gamma globulin injections at first from three to five days following the vaccine.

Dr. McCrumb said that all measles vaccines had been based on the original work done by Nobel Prize winner Dr. John F. Enders of Harvard University. The Balti-

more scientists have also worked with a vaccine made by Parke, Davis and Company.

A report of the first 158 tests on susceptible school children in St. Joseph, done with the cooperation of the Board of Education and public and parochial schools, appears in the American Journal of Diseases of Children, June, 1961, published by the American Medical Association.

Of this group, 143 children, or 91% were immunized by this method without an appreciable number of significant reactions such as rashes and high fever.

"Until a further attenuated virus vaccine is perfected, which may take from five to ten years," Dr. McCrumb said, "the only practical method for large-scale immunization against measles is the combined procedure."

The Baltimore tests have been carried on with the cooperation of pediatricians working with hundreds of child patients susceptible to measles. Both the St. Joseph and Baltimore tests are continuing at present.

Working with Dr. McCrumb have been Drs. Richard B. Hornick, Sheldon Kress (now in the U. S. Army), Ann E. Schluederberg and Merrill J. Snyder, with a medical student, Thomas Bigbee, all of the division of infectious diseases.

Dr. McCrumb has reported his work to the National Institutes of Health, and hopes to have 6,000 tests ready to report at the international conference of measles immunization to be held at the National Institute of Health, Nov. 7-9, 1961.

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SPACE

Explorer VIII Results

► EXPLORER VIII provided 500 pieces of information for every second of its 54-day life and scored several firsts.

It took the first experimental measurements of the shape and dimensions of an ionized cloud around it. The cloud was formed mostly of positively charged atoms, or ions, in front of the satellite and negative ions behind it. The effects such clouds could have on radar tracking and the lifetime of satellite orbits are now being studied.

Explorer VIII went 1,450 miles into space to gather information about the ionosphere. It measured the temperature of electrons (charged particles) and found them generally like uncharged parts of the ionosphere.

The satellite also showed that oxygen is the predominant gas in the atmosphere up to 650 miles. At that point hydrogen takes over.

Several cosmic dust experiments were

made with Explorer VIII. Together with Vanguard III, the Explorer satellite has measured several thousand micrometeorite (tiny meteors) hits. It has also picked up a large number of micron-size dust particles similar to those recorded by Vanguard III.

The indication from the Vanguard satellite in November, 1959, was that this dust was associated with major meteor streams. It is believed possible that the Explorer, launched Nov. 3, 1960, sampled the same stream. Information on micrometeorite particles near earth will tell spacecraft designers how much protection is necessary for space vehicles.

Another important result of the Explorer VIII trip will make it possible for spacecraft to orient itself without optics. "Traps" for ions and electrons caught the charged particles, and a circuit provided a signal

from which the satellite orientation in space could be determined.

The Explorer VIII contained ten experiments in all, the National Aeronautics and Space Administration reported in Washington, D. C.

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ASTRONOMY

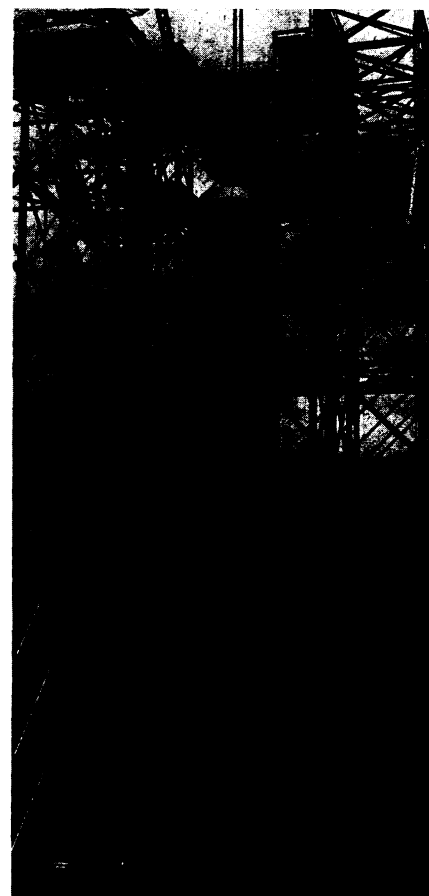
Fast Tracking Telescope Planned in Britain

► AN 80-FOOT radio telescope with a tracking speed faster than that of the world's largest, the 250-foot at Jodrell Bank, is being planned in England.

The radio telescope will be used to study radio noises from the sun and planets. It is expected to be finished by the end of 1963.

The high accuracy and fast tracking speed of the telescope are essential for following earth satellites and determining orbital data, British Information Services reported in New York.

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SATURN TEST STAND—A Saturn booster is lowered into its 204-foot test stand at George C. Marshall Space Flight Center, Huntsville, Ala. Mechanical features, temperature effects caused by liquid oxygen or nitrogen and effects of simulated flight vibrations can be tested in the 600-ton stand.