

MEDICINE

Flu Vaccine Available

Is of the same type used by the Army this fall and winter, and is effective against Type B virus. If epidemic grows, demand may exceed supply.

► VACCINE against influenza Types A and B, the kind used to vaccinate all Army personnel this fall and winter, is now on the market for civilian use. This vaccine is effective against the Type B virus now causing outbreaks in various parts of the country, totalling some 150,000 reported cases during one week.

Replies to inquiries by telephone and telegram brought the following information: Eli Lilly and Company, the Lederle Laboratories and Pitman-Moore Company have the vaccine available now for civilian use. Pitman-Moore states all its branches are being supplied. Parke Davis will have its vaccine available to civilians before January. The Squibb vaccine will be available for civilian use about Feb. 15.

If the current epidemic grows and creates a sudden demand for large quantities of the vaccine, however, manufacturers may not be able to keep up with the demand. The vaccine cannot be produced overnight. Its production involves growing the influenza viruses on chick embryos and it takes from two to three months to get out a batch of vaccine.

When the manufacturers had supplied the Army's order, they slowed down or stopped production altogether because they had no idea whether there would be any civilian demand. The vaccine is barely out of the experimental stage, physicians were not expected to prescribe it for their patients unless an epidemic developed, and until the last week of November, no signs of an epidemic had appeared in official health reports. Consequently no company has a big supply of the vaccine on hand.

Lederle Laboratories, said to be the biggest producers of influenza vaccine, have enough on hand to vaccinate about 200,000, Dr. Herald R. Cox, associate director of research in charge of virus and rickettsial diseases, said. This company has started up production and will be making about 25,000 doses daily before Christmas, but it will be another month or two before they have any sizable quantities.

The vaccine must be given at least a week or 10 days before a person is ex-

posed to influenza to allow time for immunity to the disease to be built up in the body. At first the dose was set at a single "shot" but this may be changed to two injections each of half the amount or of the full amount. A better immune response is always obtained, Dr. Cox explained, if the immunizing substance, or antigen, is divided into two or three doses. The first one acquaints the body with the new protein material and after that it is used to it and more readily accepts the substance and develops the proper response to it.

The protection given by the vaccine will last six months to a year, it is hoped. Actually scientists are not certain about this point because they have not had enough experience with it.

The vaccine was developed by Dr. Thomas Francis, Jr., and associates of the University of Michigan. It got its first major trial during the influenza epidemic of 1943-44 when controlled studies of it were made by the Army's Commission on Influenza on thousands of men in the Army Specialized Training Program units at eight different universities in different parts of the United States.

Results showed that the ratio of influenza in the unvaccinated to that in the vaccinated was four to one. So authorities expect the vaccine to protect about 75% of those vaccinated and to reduce the severity of the illness in the other 25%.

Science News Letter, December 29, 1945

MEDICINE

Blood Plasma Supply Stretched by Using Gelatin

► THE SUPPLY of blood plasma, probably dwindling since donors are no longer stimulated by war's urgency, may be stretched by substituting a gelatin solution in some cases, it appears from a report by Drs. T. H. Seldon, J. S. Lundy, R. C. Adams and E. N. Cook of the Mayo Clinic.

Its use without adverse effects in more than 400 cases, they report in the Proceedings of the Staff Meetings of the Mayo Clinic, was not as a source of protein for nourishment but solely as

a plasma substitute to increase the blood volume.

Some of the patients had a little bleeding after operations but not enough to warrant transfusion of whole blood. Others had been given two to three pints of whole blood for shock or hemorrhage and needed more fluid in their veins but not necessarily blood or plasma. Elderly patients whose blood pressure tended to fall and other patients who needed supportive treatment after operations but not necessarily blood or plasma were also given the gelatin solution.

Science News Letter, December 29, 1945

CHEMISTRY

Naming New Elements Is Problem to Discoverer

► NAMING the two newest and heaviest chemical elements, numbers 95 and 96, is proving quite a problem to their discoverer, Dr. Glenn T. Seaborg of the University of California and the University of Chicago.

One difficulty is that the astronomers have not discovered any planets of the solar system beyond Pluto and therefore the newest transuranium elements cannot be named by following the system used in naming number 93, neptunium, named after planet Neptune, and number 94, plutonium, named after planet Pluto. Plutonium is one of the elements that can be used in making atomic bombs.

One possibility might be to rely on some property of the new elements in



DR. GLENN T. SEABORG

naming them, Dr. Seaborg said, speaking as guest of Watson Davis, director of Science Service, on the "Adventures in Science" radio program over the nationwide network of the Columbia Broadcasting System. Dr. Seaborg indi-

cated that he might shortly name element 95, at least.

He has already received many suggestions for naming the new chemical babies.

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MEDICINE

Cleft Abdomen Baby Lives

Prompt operation in which silk stitches were used to pull together gradually the sides of the opening, saves life of baby boy.

➤ IN RICHMOND, Va., in July, 1942, a baby boy was born with the rare, usually fatal condition of cleft abdomen. His liver, gallbladder, stomach, colon and small intestines pushed through a five-inch wide opening that extended from the lower end of the breastbone to the navel.

Today, he is a normal three and a half year old child, one of the six babies recorded in medical history who have survived being born with this defect. His case was reported by Dr. Frank S. Johns, of the Johnston-Willis Hospital in Richmond, at the meeting of the Southern Surgical Association.

Prompt, efficient operation to repair the defect plus careful handling by the obstetrician, Dr. M. Pierce Rucker, when the baby was born, saved his life.

Dr. Rucker noticed the defect as the baby was born. He took care that the thin membrane covering the organs that pushed through the cleft was not broken. Compresses wet with salt solution were placed over the cleft abdomen and the baby was sent immediately to the surgical department.

Within a half hour after his birth, the baby was under ether and Dr. Johns was carefully pulling together with silk stitches the upper and lower ends of the cleft. He had first tried to force the liver, stomach and other organs gently back into what should have been their normal position.

At every such attempt, however, the baby would stop breathing. Finally, he put in the silk stitches and gradually pulled the sides of the opening together, leaving the unbroken membrane as a permanent overall covering. In the center, where the cleft had been almost five inches wide, a space about an inch wide was left open.

Adhesive strips were placed over the entire length of the wound, a dressing put on, and the baby returned to the

nursery. The entire strapping was kept on for about six weeks or until there was complete granulation under it.

On the fifth day after the operation, the baby was put to the breast. He had previously been given lactose feedings and diluted breast milk as well as injections of normal salt solution and, later, of plasma from his father's blood.

When 13 days old he went home from the hospital, weighing six pounds five ounces, a satisfactory gain over his birth weight of five pounds eleven and three-fourths ounces.

The first known case of cleft abdomen was reported in 1557. Dr. Johns found reports of 87 cases altogether. Of these 58 were stillborn monstrosities. In 20 cases the baby was living at birth and normal except for the abdominal defect, but no attempt was made to repair it and these children all died. In nine, including the present case, attempts were made to repair the defect but only six of the babies survived.

The condition, which has the technical name of gastroschisis, is believed to be a structural abnormality and not one of growth. It originates in the embryo. If there is not enough liquor in which the embryo normally floats freely, or if the embryo or its sac is sticky, the embryo and the sac become united and that part of the embryo cannot develop normally.

This theory is believed to explain not only abdominal cleft but other abnormalities with which babies are sometimes born. Pressure from tumors in the mother's abdomen or deformities of the uterus are other possible causes of congenital abnormalities and monstrosities.

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Brazil nuts, shaped like segments of an orange, grow a dozen or more in a pod; this accounts for their shape.



LAST TRIP—The roadable autogiro, developed by the Pitcairn Autogiro Company ten years ago makes its last trip down North Capitol Street on its way to the Smithsonian Institution. CAA photograph.

BIOCHEMISTRY

Acid of 1080 Found in South African Plant

➤ NATURE ANTICIPATED man in manufacturing the stuff that makes the new super-ratbane, 1080, the deadliest thing that has yet hit the rodent world. Long before American chemists made a synthetic combination of sodium with fluoroacetic acid, which is the basis of 1080, a poisonous plant in South Africa was producing the same acid in its living tissues. Not only that, but the natives had found out that they could use the plant to poison rats.

The plant, which bears the Boer-Dutch name "gifblaar" (poison-blister), was analyzed for its poisonous principle by a South African scientist, Dr. J. S. C. Marais. He found that its toxicity was due to fluoroacetic acid, and suggested that this acid and its chemical relatives might be a source of valuable poisons and insecticides. American scientists, working under wartime pressure, made an independent discovery of the value of the same acid and its compounds without knowing of the previous work.

The botanical name of the poison-producing plant is *Dichapetalum cy-mosum*. It is a kind of second cousin to the euphorbias, most of which are also poisonous.

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