SCIENCE NEWS

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A PREVENTIVE OF MEASLES

THE War Department announces that it has on hand large supplies of a new, effective measles preventive that can be given soldiers exposed to the disease. The preventive is known scientifically as gamma globulin. It is being obtained from plasma from the blood collected by the Red Cross for the armed services.

Research by Dr. Edwin J. Cohn, of the Harvard Medical School, led to the development of this measles preventive. Dr. Cohn has succeeded in separating from blood plasma by chemical means various components or fractions. One such fraction is fibrin foam, now being used to stop bleeding in surgical operations. Another is the gamma globulin, which contains the antibodies developed in the blood to fight an invasion of measles germs. Presence of these antibodies developed in the blood during an attack of measles explains why as a rule no second attack occurs.

Since most grown-ups have had measles, the blood they donate to the Red Cross contains these antibodies and also antibodies against other diseases to which they may have built up immunity.

Measles has so far been a very slight problem in the Army, with a very low occurrence rate compared with that of the last war, when at one Army camp alone hundreds of new cases developed day after day and every arriving troop train had from one to six cases in the eruptive, very infectious stage.

Memory of these thousands of soldiers who had measles, many of them dying from the pneumonia that followed, led to establishment in 1940 of a Commission on Measles and Mumps under the direction of Dr. Joseph Stokes, Jr., of the Medical School of the University of Pennsylvania.

This commission and nine others making up the Board for the Investigation and Control of Influenza and Other Epidemic Diseases in the Army, with Dr. Francis G. Blake as president, function under the direction of the Preventive Medicine Service of the Office of the Surgeon General.

For over a year members of the Commission on Measles have studied the new measles preventive. Most of the work, according to the announcement of the War Department, was done at Army camps, but a significant study was carried out during an outbreak of measles at an eastern girls' college. Among 67 students given the globulin, only one developed an average case of measles, while 18 out of 38 not given the globulin developed average measles.

ITEMS

CITRUS fruit juice may be concentrated to about one fourth of its normal volume to save space in storage and shipping by a new method developed by Dr. A. L. Stahl at the Agricultural Experiment Station of the University of Florida. Adding three quarts of water to one quart of the concentrate, will give a gallon of normal juice. The juices of mature fruit are extracted by reaming, then placed in a constant freezer and frozen to a slush consistency. The water in the juice freezes, while the minerals and other dissolved solids and other valuable parts remain in a semi-liquid state. The partly frozen mixture is then placed in a centrifuge revolving at moderate speed. The action separates the juice from the icy part of the slush. The process is still in an experimental stage. A pilot plant is to be set up by the State Citrus Commission and the college station to develop commercial production methods.

A METHOD of producing isoprene, the basic building block of natural rubber and important ingredient of synthetic rubber, was described at the Chicago meeting of the American Institute of Chemical Engineers by J. M. Mavity and E. E. Zetterholm of the Universal Oil Products Company of Chicago. Heretofore the isoprene needed for commercial use has been derived from turpentine, but when the new process is put into action the oil wells of the nation will supplant the pine trees, saving valuable turpentine for other vital uses. By the new process isoprene will be formed from readily available petroleum hydrocarbons by chemical methods, in one simple operation. The authors stated that isoprene will play a far more important part in the synthetic rubber field in the future.

A NEW type of fuel tablet has been developed by the Quartermaster Corps, U. S. Army, in collaboration with the Office of Scientific Research and Development. This fuel tablet will enable the soldier in the field to prepare a quick, hot meal from the "C" or "K" combat rations. The new tablet is a synthetic compound, known as trioxane, colored to distinguish it as non-edible. It has several advantages over the previously developed square paraffin candle. The new fuel tablet heats faster, is lighter in weight, is more compact and has a less luminous flame. The tablet is flat, weighs a little more than one ounce, and will heat a can of English style stew ("C" ration) in six or seven minutes.

THAT chlorine dioxide, a bleach known to be two and a half times as powerful as chlorine, is now available for industrial use by means of a process developed at the Mathieson Alkali Works was reported by E. R. Woodward at the Cleveland meeting of the American Institute of Chemical Engineers. Up to the present time, the industrial use of chlorine dioxide has been impracticable because it does not keep. The new process, described by Mr. Woodward, overcomes the difficulty by providing a simple process by which the user can prepare the strong bleach in any quantity right at his plant, from chlorine and sodium chlorite. Chlorine dioxide has already proved to be of specific value in the food, starch, soap, paper and textile industries.