

MEDICINE

Vaccine Against Viruses

➤ A VACCINE which gives mice "a high degree of protection" against the Lansing strain of infantile paralysis virus subsequently injected into their brains is announced by Dr. Albert Milzer, Dr. Franz Oppenheimer and Dr. Sidney O. Levinson, of Chicago (*Journal, American Medical Association*, July 8).

Human application of a similarly prepared vaccine is not even hinted at in the report. The vaccine for the mice was made by a new method of ultraviolet irradiation using a newly developed lamp as source of the ultraviolet light. With this lamp and technique the infantile paralysis virus, and also some other viruses and larger disease germs can be inactivated within one second. This destroys their disease-producing power.

The chief stumbling block to human application of the new vaccine, though not mentioned in the scientific report, would be lack of a supply of infantile

paralysis virus to irradiate and make into a vaccine for humans. This virus cannot be grown in test tubes and a supply developed, as can be done, for example, with germs of typhoid fever. The only sources of infantile paralysis virus for vaccine-making are ground-up brains and spinal cords of human, monkey and mouse victims of the disease. This material would not furnish enough virus to make vaccines for human use.

The importance of the new vaccine consists in advancement of knowledge on the problem of immunity to viruses. The vaccine has the power of mobilizing in the blood of the vaccinated mice antibodies which neutralize the infantile paralysis virus. Viruses have this antigenic power only while they are living. The only viruses, apparently, which have antigenic power after they have been killed are the equine encephalomyelitis (so-called horse sleeping sickness) virus and, to a certain extent, the rabies virus.

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MEDICINE

Dysentery Treatment

➤ A RAW EGG white treatment for one kind of dysentery is suggested by experiments reported by Dr. Arthur L. Schade and Miss Leona Caroline, of the Overly Biochemical Research Foundation (*Science*, July 7).

Raw hen's egg white, they found, checks the growth of the *Shigella* dysentery germs and of other microorganisms, including a member of the staphylococcus family. The egg white achieves its effect by depriving the germs of iron. Germs which do not require much iron apparently are not affected. The Flexner type of dysentery germ is among those unaffected by the egg white.

Avidin, substance in egg white which produces serious sickness in some animals by depriving them of the vitamin, biotin, is not connected with egg white's effect on the microorganisms, so far as Dr. Schade has been able to observe.

For treatment of *Shigella* dysentery, Dr. Schade suggests giving the egg white by mouth in capsules coated so that they will pass unchanged through the stomach and reach the intestines where the germs are, or using the egg white in high colonic irrigations.

The new finding about egg white may also prove useful, he suggests, in studies of nutritional deficiency diseases and anemias because of the involvement of iron in the picture.

When iron is added to raw egg white in the concentration of the experiments, a tan to brownish color appears. The amount of the germ-growth-inhibiting factor in egg white can be determined by the depth of the color, Dr. Schade has found in studies continued after the report to *Science* was sent to press. Eggs vary in the amount of this factor.

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INVENTION

War-Winning Ideas Wanted From Civilian Inventors

➤ WAR-WINNING ideas are not necessarily all concocted by gold-braided generals and admirals at solemn staff conferences in Washington. Individual civilians sometimes turn in suggestions that can be translated into deadly blows against the Axis; and the National Inventors Council is now on the hunt for more

of them, with a new list of 35 specific military problems for which solutions are being sought.

Means for both attack and defense are included among the items on the list—in some cases the Council wants both thrust and parry for the same weapon. For example, they invite submission of formulae for odorless poison gases, and at the same time they want a design for a gas mask that will permit the wearer to use his voice easily in giving orders and transmitting information. They are also interested in ointments that will protect the skin against drops of blister-causing chemicals like Lewisite.

In another department of chemical warfare, there seems to be no special present demand for more effective flame-weapons, but there is a definite call for fireproof clothing that will give protection against burning pieces of white phosphorus, as well as for protection against flame throwers. Also requested are suggestions on how to hold back fires in the interior of disabled tanks long enough to permit the crews to escape.

At the opposite extreme of requirements are requests for better protection of flyers and men at sea when plunged into icy water. Design of a life vest that will automatically inflate itself and turn the wearer on his back is needed for the preservation of men thrown violently overboard, unconscious from concussion. Desirable also are methods of carbon dioxide inflation of life rafts within 30 seconds, at temperatures of from 20 to 40 degrees below zero Fahrenheit.

Making the attack more effective receives particular stress in the new list of needed ideas. Getting the men ashore is a prime requisite, so that clearing of enemy obstacles is one field in which ingenious minds can find plenty of work. These obstacles may be either on or off shore; they may be boldly visible, concealed with camouflage on land, or submerged in the water.

Camouflage is another objective. Green paint now used will fool the human eye, though special camera filters tell readily enough which is real vegetation, which painted cloth. What is now wanted is some kind of aid to the human eye that will do the same thing instantly, without waiting for photographic films to be developed.

Pillboxes are still proving to be very tough nuts to crack. The Council list asks simply for "location and destruction of concealed enemy emplacements, pillboxes and similar strong points."

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