

animals given the serum than in those without it. However, these scientists do not think their results disprove the stimulating effects of the serum. The reticulo-endothelial system of a healthy animal is probably working at its maximum anyway, Dr. Nickerson pointed out to me, so it is not surprising if it cannot be stimulated further. Tests on animals weakened by chronic infection might show a different result.

At the University of Texas at Galveston, Dr. Charles M. Pomerat and asso-

ciates, Drs. Ludwik Anigstein and Edward H. Frieden, have studied the effect of ACS on cells growing outside the body as well as in the body and have made chemical studies in a search for the chemical nature of the active substance in the serum.

In Los Angeles Dr. Reuben Strauss has found that broken bones produced experimentally in rabbits form stronger, bigger calluses, which means they knit better, when ACS is given to the rabbits.

*Science News Letter, April 27, 1946*

"A final mention must be made of the work on the dissipation of fog on landing fields. The problem of landing a plane under conditions of low visibility is of course ultimately to be solved by radar, but this problem was a very serious one in World War II. No simple economical solution was reached on this problem. Air conditioning the atmosphere is a job whose magnitude can be realized if one remembers that one cubic kilometer of air weighs 1,000,000 tons."

*Science News Letter, April 27, 1946*

*Cedar paper* containing DDT has been developed as a lining for clothes closets and storage chests to protect against moths and other insects.

#### MEDICINE-CHEMISTRY

## Medical Gas Masks

War research on toxic smokes should bring protection against flu, pneumonic plague, hay fever. Smokeless, dustless homes foreseen.

► A FILTER, like those in modern gas masks, to protect hay feverites from pollens; another such filter for protection against influenza, pneumonic plague and other air-borne diseases; homes free of smoke and dust—these benefits should come from war research on toxic smokes, or, as the layman would call them, poison gases, Dr. W. H. Rodebush, of the University of Illinois, declared at the meeting of the National Academy of Sciences.

"The modern gas mask," he declared, "is a practically perfect defense against poison gases and smokes which act on the nose, throat and lungs.

"It is without question due to this protection that chemical warfare was not used in World War II," he continued.

World War I gas masks stopped poison gas with a dense bed of fine charcoal particles but the charcoal can not stop smoke. That, Dr. Rodebush explained, is why the blue cross shell became one of the most dreaded and effective weapons used by the Germans. It was filled with a sneeze gas in the form of a smoke. Its particles went right through the charcoal and caused intense irritation of the nose.

Several types of filters which were very effective in removing smoke without at the same time making it more difficult to breathe through the gas mask were developed by the aerosol section of the National Defense Research Committee, Dr. Rodebush reported.

"It is an interesting fact," he said "that most of the very toxic substances which have been suggested for use in future wars are aerosols and, insofar as they depend upon penetration of the respiratory tract for effect, the filter is an ade-

quate protection.

"The principles of filtration which have been studied are likely to prove of great use in civilian life. It should be possible, for example, at small cost to remove all traces of smoke and dust from the air in our homes, thus enormously simplifying the problems of housecleaning and greatly increasing the comfort of breathing for the dwellers therein, particularly in our large cities where so much inconvenience and discomfort is caused by the smoke-laden air.

"It would be neglecting an important part of the Aerosol Section work not to mention the insecticide aerosols, such as DDT. It is an interesting fact that the most efficient insecticides are in the form of aerosols. The reason for this is clear on a little thought. A certain minimum dosage is required to kill the insect. If the insecticide is dispersed in droplets of the proper size in a cloud the insect cannot fly through the cloud without encountering one or more of the particles which are adsorbed through the body surface and prove fatal.

"The aerosol cloud behaves as a fine meshed window screen with this difference. In the screen the meshes must be smaller than the insect's body, but in the cloud one can easily make a statistically exact calculation of the size and dispersion of the cloud so that only a negligible percentage of the insects can fly through the cloud without coming in contact with enough of the droplets to give a toxic dose.

"It is, of course, possible to use a toxic gas to kill insects but it turns out that the gas concentrations required are far greater than are concentrations of aerosols.

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