CHEMISTRY

New War Gases

New class of blistering agents known as nitrogen mustards is reported by Army officer. They burn skin and, if they get into eyes, cause blindness.

➤ THE PRESENT conflict has introduced a new class of war gases known as the nitrogen mustards, a group of blistering agents, Brigadier General Alden H. Waitt, author of the new book, Gas Warfare, states. (*Infantry Journal,* March.)

If the nitrogen mustards get into the eyes, they may cause blindness. Their vesicant action (blister-causing) is not quite as bad as that of the mustard gas used in World War I. Like the well-known mustard gas, they have a delayed action of several hours before the blisters appear—more or less after the fashion of poison ivy. If heavy concentrations of the nitrogen mustards are breathed into the lungs, a fatal action, which may be delayed as much as four days, may result, General Waitt reports.

One of the greatest sources of danger, with these chemical warfare agents, is the difficulty of detecting them. They are nearly odorless, at most having a faintly fishy smell, instead of the rather strong garlic scent of "straight" mustard gas. If nitrogen mustard bombs are dropped during a blitz with high explosives they are very likely to go undetected. Several color tests with sensitized papers, crayons, etc., now available for other war chemicals, will detect the presence of nitrogen mustards as well.

They can be kept out of eyes and lungs by prompt use of the gas mask, and they can be prevented from contact with the skin by means of the same kind of protective clothing that has been devised for use against the older mustards. Soap and water are good decontaminating agents for clothing; bleaching powder solutions and light petroleum extracts for buildings, furniture, etc.

Like the older mustard gases and lewisite, the nitrogen mustards are not really gases. They are liquids, or even easily melted solids, but because they are thrown into the air in the form of an impalpably fine spray or mist they are called gases for convenience. They can be dropped in bombs, thrown in artillery shell, or sprayed from special containers on airplanes.

Gen. Waitt gives concise first-aid directions:

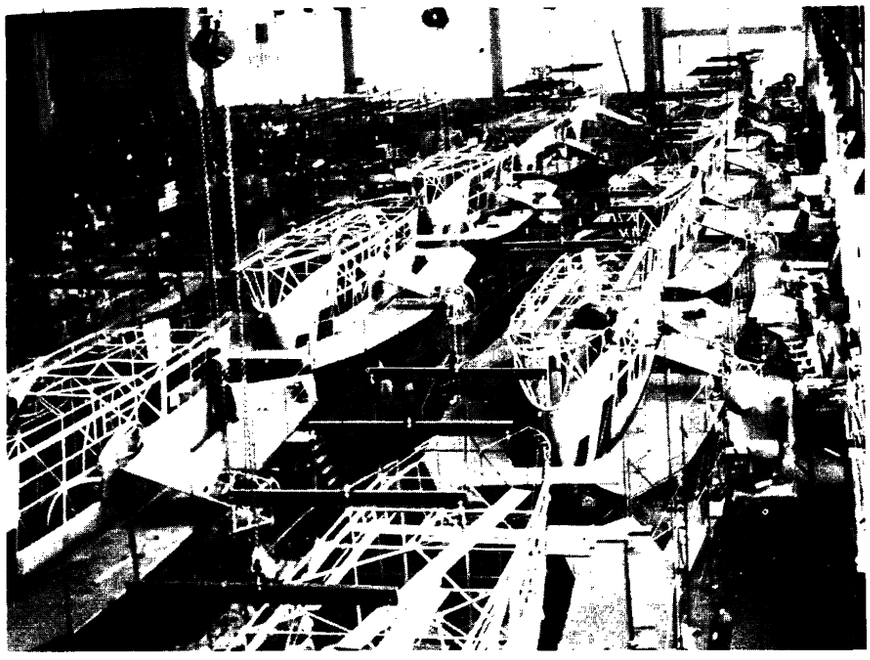
"The gas mask should be put on as soon as the gas is detected, and worn continuously until all danger of exposure has passed. As in the case of other vesicant agents, liquid-splashed clothing should be removed at first opportunity. A nitrogen mustard casualty should not remain in a heavily contaminated area unless the tactical situation makes his removal impractical.

"If liquid agent has entered the eye, it must be washed out as quickly as possible, using water from the canteen for this purpose. This irrigation can be done most effectively by another man. But in the absence of immediate help, the individual must attempt to flush his own eyes without delay. This is best done by lying on your back. The affected eye is pulled open by traction on the lower lid with the left hand, and water is slowly poured into the eye from the canteen held close to the eye with the right hand. The eye should be moved from side to side, and up and down, during the washing. This process should be continued for about five minutes if sufficient water is available.

"Protective ointment should be used as for other blister gases. Since the ointment merely dilutes but does not destroy nitrogen mustard, it is necessary to wash off the film of ointment with water, or preferably with soap and water. If the contamination is positively identified as nitrogen mustard, soap and water alone may be used for decontamination, but it is safer when doubt exists to use protective ointment first, followed by soap and water, or plain water. If redness has appeared on the skin the use of the ointment should be omitted, and soap and water alone used. Blisters should not be opened until medical treatment is available."

Where eyes or skin have become contaminated this mischief has already been done, Gen. Waitt states. However, there are standard eye and nose drops in the Army first-aid kit that will afford relief from pain in eyes and nose and an ointment that will ease itching and irritation of the skin.

Science News Letter, March 6, 1943



BLIMP CARS—This is just a portion of a long production line at the Goodyear Aircraft Corporation plants in Akron where the streamlined control cars for U. S. Navy blimps are being assembled. Construction at the beginning of the line starts with the cars inverted. Half way through, they are turned over, as shown here, for attaching the motors to the outriggers and for other final touches.