

# EXPERTS BLAST MYTH OF GAS WAR HORRORS

1,000 Planes Would Require  
Many Days to Wipe Out  
People of New York

By George T. Schreiber

APRIL 22, 1915. A quiet day on the Ypres front, where the French salient joined that of their British brothers-in-arms. Suddenly from the German lines rolled a heavy yellow cloud. A few moments later it reached the Allied lines. Men choked and hundreds died. It was the first use of gas in the world war, strictly forbidden by the Hague treaty of 1907. It caught the allied armies totally unprepared and, as might be expected, inflicted many casualties.

But there was nothing particularly new about the use of chemistry in warfare. In the 7th century Callinicus, a biochemist, devised a liquid fire which the Byzantines used successfully to defeat an armada of 1,800 Arab vessels. A few years later the Roman empire was saved for the time by the use of "Greek fire," a more western adaptation of Callinicus. Centuries earlier the Chinese had used smoke pots to poison their enemies. The Greek armies, spread out before the walls of Troy, had similar weapons.

As the world war progressed, more than twenty-five different chemical agents were tried out, but in the final test only three or four were retained. These still are the basis for the chemical weapons in modern armies.

Statesmen assembled in disarmament conference still talk about the outlawing of chemicals in war, as they did at The Hague in 1907, but every modern nation is experimenting along both defensive and offensive lines. Soldiers say chemistry—gas and smoke—will play even a



A smoke screen laid over New York. The object of the screen is to protect the city from bomb carrying and map making enemy planes. Protective screens also are used in the field to cover troop movements.

larger part in future wars than it did in the European conflict. But will it be so terrible? Will entire cities be wiped out by gas dealing airplanes? Will whole armies be exterminated in a matter of minutes? Experts, and there are many in the United States, say no. To kill the entire civilian population of cities the size of London or New York would require the efforts of a fleet of 1,000 airplanes, visiting the cities on many successive nights. Soldiers are adequately protected by gas masks and gasproof clothing, pictured on this page. If needed, and such need seems unlikely, similar protection will be provided for civilians.

Chemicals in use in warfare today fall into the following classes: Lung irritants to affect the breathing apparatus; sternutators, or sneezing gases; lacrimators, or tear gases, which have daily use by policemen; vesicants, or blistering agents, which cause burns much the same as does fire, and incendiaries, which are used for smoke screens in one form and destruction of property in another. These agents can be disseminated by cylinders under pressure (pictured here); by artillery shell, which includes chemical mortars (also pictured); by airplane bombing, spraying, or sprinkling, and the ordinary grenade.

The present day army gas mask, adaptable to both man and animal, is adequate protection against all these agents.

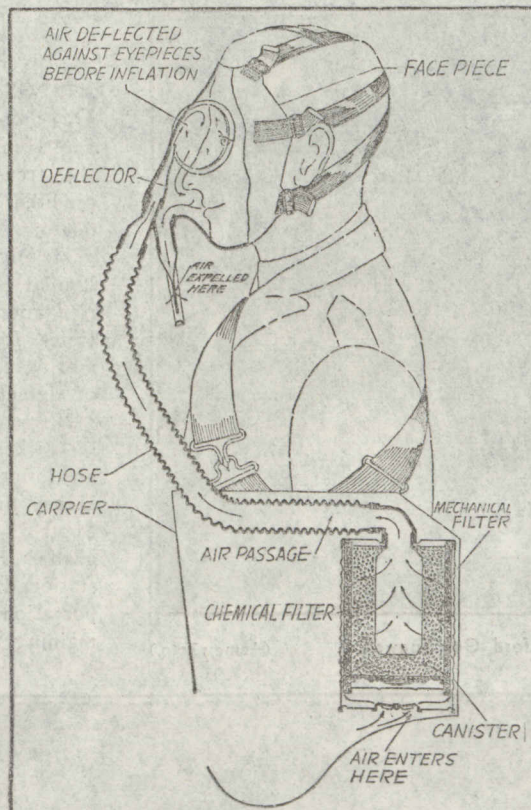
One of the most widely known gases in the war was mustard, but there is no mustard in its formula. It is made of chlorine, the basis of

most war gas, and ethylene—the latter merely ethyl alcohol, with water removed—and sulphur. It is called mustard because it burns.

The charge has been made that gas is a cruel weapon. Soldiers deny this and cite world war casualty figures (dead and wounded) to prove their point. There were 224,089 American soldiers wounded and 34,249 killed. Of the 224,089 treated in hospitals, 70,552, or 31.4 per cent, were affected by gas; and of this number, 1,221, or 1.73 per cent, died. Of the remaining 153,537, or 59.4 per cent of casualties suffering from wounds produced by weapons other than gas, 12,470, or 8.1 per cent, died. Of those killed on the battlefield, there were not more than 200 deaths due to gas. Miscellaneous gun missiles wounded 33.4 per cent; shrapnel, 15 per cent; shells, 7.8 per cent; sabers, .00005 per cent; rifle bullets, 9.1 per cent.



The Stokes chemical mortar, which is used to throw gas and smoke shells. The shell has a detonating charge in the base and is exploded when the soldier drops it down the mortar barrel.



How the army gas mask works. Air is drawn through the purifying canister, up through hose, and into face piece. Here it is breathed and exhaled through an outlet valve.



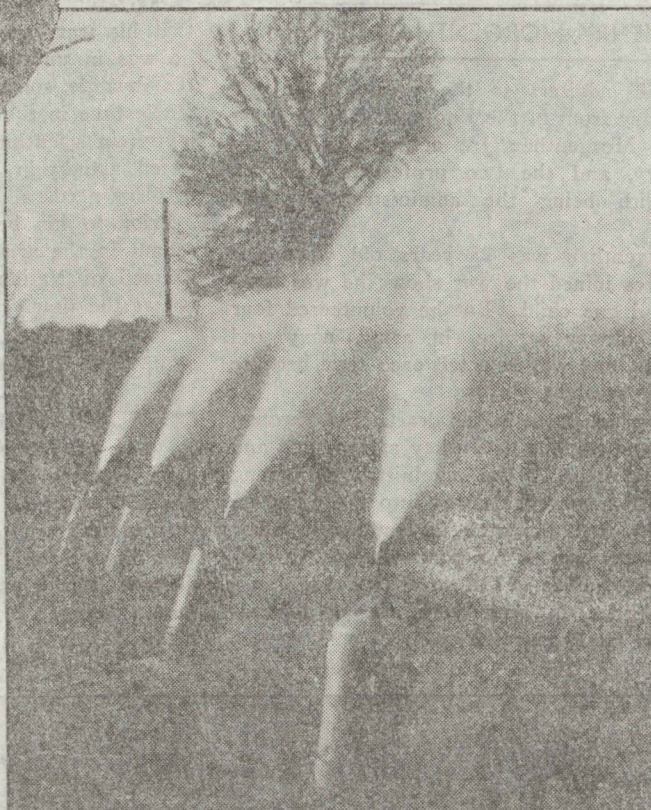
The soldier of the future. He is wearing gas proof clothing for protection against agents that burn. Ordinarily troops abandon gas-filled areas, but when it is necessary for them to stay they don such clothing. It hampers efficiency somewhat.

The modern United States army gas mask, a protection against any known chemical agent. It is comfortable to wear, and a soldier can adjust it to his head quickly.

(Photos by courtesy of Chemical Warfare Service, U. S. Army.)



Animals as well as soldiers come in for protection from chemical agents in war. This horse mask allows the army beast of burden to be used in areas where there is a high concentration of gas. Horses are not as strongly affected by gas as are humans.



One of the methods of disseminating gas is through the use of cylinders of the agent released under pressure. The wind carries the gas to the enemy line. Weather conditions must be right for this attack.