

FIGHTING THE WAR OF NOXIOUS GASES

Belgian Spirit Refuses to Bow Before Germans' Campaign of Persecution

CHEMICAL WARFARE SERVICE ARMS TO BEST HUN AT HIS OWN GAME

CHEMISTRY TO THE FRONT AS AGENT OF MODERN WARFARE

IN keeping with the theory of "fighting the devil with fire," the United States has gone in for gas as a weapon and for means to combat it. Above, at the left, is Major General William L. Sibert, chief of the chemical warfare service; at the right is seen a great American disappearing gun throwing gas shells toward Metz. Below, at the left, is the American gas mask, which is admittedly superior to the German mask, at the right.



gases are convenient for war uses. A gas must be easily poured out, must not mix too rapidly with the air, must not be of high visibility nor strong odor, for this use. Phosgene and chlorine have these qualities. They will flow out over the landscape, fill the shellholes, the trenches, all depressions—go rippling down the valleys. Hills will stand up in these seas of gas like islands, trees will lift their branches into safety. Woods will hold the gases longer than open fields. They will sink into the hollows in rough country and leave the rough lands as zones of safety.

Masks Are Evolved

In the days that followed this first gas attack the women of France and England worked with frantic fingers in making the first protective masks. In strips of black veiling they sewed cotton waste. These were capable of being adjusted over the mouth and nose. They were to be dipped in "hypo" which was a chemical that would absorb the gas from the air. The man who breathed his air through his hypo could live through a gas attack. If he kept his mask properly moistened, held his breath while dipping it, used infinite care that no air entered his lungs except through it, he would live. It he made a slip, if he was careless, he died. Soon whole armies were provided with these masks and subsequent attacks became less and less deadly.

The attacks by gas clouds required the production of gas in such great quantities and were dependent upon so many other elements that they did not prove to be practicable. The dancing of heat waves in the sunshine broke up the gas blanket in the daytime and the dew of the cornfield absorbed it at night. The quiet of early morning offered its best opportunity and even then the wind might change and blow it back on the sender. The smoke cloud was a trial and an exasperation. Soon the use of gas came to be dependent on other methods, chiefly that of encasing it in shells and bursting it among the enemy. With this use appeared the "tear gases" and the "sneeze gases." These blinded the troops, or, by inducing sneezing, made the use of protective masks most difficult.

Mustard Gas Appears

Then, finally, in 1918, appeared that deadly gas with a faint odor of garlic. It had little immediate effect other than that of inducing a slight itching of the nose such as, back home, is taken for an indication that somebody is coming to dinner. They called it "Mustard gas," not that it was made of mustard but because it blistered like a mustard plaster if it got on your clothes or you sat on the ground where it had splashed. Above all, the fighting man avoids sitting on mustard gas.

All these gases are in the form of liquids as they exist in their containers.

be these cylinders or shells. When released from the pressure of these containers, the liquids turn to gas. In the case of "mono" and "tri" this trip from liquid to gas is almost instantaneous. The shell is burst upon landing by the detonation of a pocket of explosive which it contains. The liquid is atomized and turns to gas. The gas settles down into the trenches and dugouts and stifles the occupants if they don't look out.

But in the case of mustard gas the action is different. The liquid of the shells does not immediately vaporize. It may sink into the ground or hang about a forest for hours or even days. Then, when all is quiet and a shell has not come over for a long time and the Yanks and Poles and Tommies are yawning and stretching in the satisfaction of inaction, the slanting sunshine may fall upon a hillside where a mustard shell has burst a day or two earlier, its warmth may unleash the demons tied up in the liquid there spilled, and these demons may creep down the hillside delivering the calls of the grim messenger.

Gases Work Differently

So do various gases lend themselves to different sorts of strategy. If the American troops were getting ready for a drive into Hunland, for instance, they would be set about the task of harassing, wearing down, unweaving the enemy. From the howitzers, the seventy-five, the trench mortars, a constant bombardment would be carried on. Most of the shells would contain high explosives. The attempt would be under way to blast as many men as possible out of their entrenchments, to strafe them. But one shell in every half dozen might contain gas. The poison would be interspersed with the explosives. Thus would the enemy be forced to wear gas masks constantly, day and night. He would never know if he might get a breath of fresh air, would never be allowed to relax the tension of guarding against the silent death. Thus would he be worn down, exhausted, have his spirit broken. Finally when the shells went over the top they would

already have the battle half won because of the broken spirit of the enemy. But, since they had used the lighter gases which vaporize immediately, there would be no danger from their own poisons for their own men.

On the other hand, if they had used mustard gas sprinkled among their explosive shells, the fumes might lie dormant until they had gone over and taken enemy territory, and then might steal forth and lay low the very men who had sent them out for the undoing of the foe. The mustard might lurk for days in shady places and then come to life with terrible results.

So it develops that these gases have their specialties and must be used accordingly. There are many varieties and mixtures, and these may be juggled with the special strategy needed for the given occasion.

Gas Strategists In Demand

An interesting point in this connection is a call which recently came from France for a group of strategists for gas work. It was realized that it would be impossible to get any experts in gas warfare, as this was a variety of bird which did not exist. Nobody in America having ever engaged in gas warfare, there were no specialists listed at the war department.

Admitting this, said the authorities, get us a score of men who have been engaged in other callings which called for quick thinking and action and who have shown themselves masters. Give us men who can originate new stuff for the Heinies, who can plan and execute.

silently death will stalk through the trenches. The first item in protection is the mask. After that first mad rush to get in the hands of the soldiers some primitive appliance that would strain out the blighting fumes, the scientists of the nations at war proceeded in the development of a mask that might be depended upon to serve the vital purpose in hand. Passing through many stages, they finally reached the box mask of the present, guaranteed to remove from the air all gases in use or among the possibilities.

The principle of this mask is based upon filtering the air. The air that is drawn into the "wearers" lungs must first pass through a little box which rests on his chest, and which has in it the necessary chemicals to neutralize whatever gases may appear. The early masks, that would take care of "mono" and "tri," would probably be entirely useless in meeting the exigencies of the present. The masks must keep ahead of the bases or a great tragedy might occur. If either party in the war should devise a gas which the masks of the other would not strain, and should unleash it in quantity, the enemy would be decimated. Here is an opportunity for the ingenuity of the American scientist.

Masks for Horses, Too

The gas, in manufacture, is also a brand-new job. The government now has two large factories producing masks for the men, and one making horse masks, for these draft animals must be protected in certain areas or the transportation system will go to pieces. A horse, it may be said in passing, can stand much more gas than man, but still he must be protected. Certain corset manufacturers have been drafted for mask-making. Then there is the canister which contains the chemicals. It is like a tin can man from Chicago, one of the biggest in the business, is in charge of this phase of the work. They are working feverishly to keep up with gas developments. It has happened in the past that great quantities of masks have been manufactured and shipped abroad and were obsolete by the time they arrived, because of developments in the interim. It is the habit of certain critics to attempt to attribute the rejection of these masks to graft when in fact the situation is a changing war situation.

The German mask is made of leather instead of rubber, for the reason that rubber is very scarce in Germany. Masks recently captured have wire springs incased in cloth in lieu of rubber bands. Their canisters are smaller than ours, and therefore provide protection for a shorter time. So it would seem that we have the jump on them in the mask game. It is reported that the absence of rubber is giving much trouble in the matter of masks, and that the advantage in this respect is inclined to make the German regret that he broke the international code of humanity on that April day in 1915.

Gas Drill All Important

The drill in the use of the mask is one of the most carefully executed items of front line training. When a soldier is between two and ten miles of the front he wears the little satchel which contains the mask over his shoulder. When he is less than two miles of the front he wears it in the "alert" position, which is on his chest, with the flaps open. He can put it on from this position in half a minute, and he can hold his breath that length of time.

(Continued on Page Two—This Section)

BRUSSELS OBSERVES NATIONAL HOLIDAY ALTHOUGH 'VERBODEN'

By Agreement Shops Are Closed and Public Walks Quietly Abroad Wearing Flowers in Combinations to Display Belgian Colors to Huns' Consternation.

By BRAND WHITLOCK

United States Minister to Belgium

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WHEN we got back to Brussels from the front it was to learn that the latest rumor had it that Villalobar and I had been arrested by the Germans and whirled away in motors, no one knew where. Perhaps the rumor in some of its forms related the event to the Belgian national holiday which the Belgians had been celebrating that day—considering the disabilities under which they lived. We had celebrated our own national holiday a little more than a fortnight before, and the Belgians had added to the meaning of the day by the felicitations.

It had been an excessively hot day, as the Fourth of July should be, and its celebration had made a little oasis of liberty in a desert where liberty just then was unknown. I had decided against a reception or manifestation of any sort as, under the circumstances, in bad taste. But we had raised a new flag, the old having been whipped out by the winds and, as one might almost say, by the emotions of those long months, and as the lovely emblem rose and fell in the heavy, humid air and the sunlight touched its bright colors, it had seemed never so beautiful, never so full of meaning. The Belgians had silently celebrated the day with us. There was a telegram from Davignon on the part of the Belgian government at Havre. The salons were filled with flowers and all day there was a constant stream of visitors at the legation, signing the book, leaving cards and all sorts of little souvenirs expressing felicitations and reassurances. Our flag was on many a breast with the ivy leaf. It was strange that there, away across the sea, the vibrations of that wild, free music of '76 should be felt; yet not after all, perhaps, so strange, for the principles of our revolution are loved in Belgium, whose own principles are precisely like them, and they were loved passionately then because they were denied, and scorned, and crushed down, in an epoch when everybody in our western world so fondly imagined that political liberty had been won for the world.

Bourgeoisie, Lemannier and the Echevins had called, and M. Lemonnier had made a little speech, very moving by presenting to my wife a souvenir from the city of Brussels. And we had the young men of the U. R. B. at Ravenstein for luncheon, with Villalobar and Van Volleghoven, and speeches on the lawn afterwards.

Holiday of Mourning

When their own national holiday dawned on July 21 the Belgians could not celebrate it as they had in other years, in the gaiety, that happy spirit of careless freedom which I had seen in graceful play on every hand the year before when we had all gone to Ste Gudule for the Te Deum. Indeed they were forbidden to celebrate it at all and perhaps that is one reason why the day, which had such poignant memories for them in that year of 1915, was marked by such a celebration as it had.

Tells a Secret

Manufacturer of Famous Medicine Tells Ingredients. So Public Can Appreciate Pure, Reliable Medicine.

Many people fear to take medicine to check and abort colds, coughs, catarrhs, etc. This fear is groundless with all the products of The Blackburn Products Co., Dayton, Ohio. Not one contains opiates, narcotics or harmful drugs. Mentho-Laxene, for coughs, colds, catarrhs and all distress following a cold, is a compound of Wild Cherry, Tolu, Cascaro, Grindella, Menthol Ammonium Chloride, and alcohol sufficient to preserve and keep in solution. Every ingredient is in concentrated form and the medicine is so strong that only ten-drop doses are to be taken in the "raw" state. But the ideal way is to make into a syrup by emptying a 24-oz. bottle of Mentho-Laxene into a quart bottle and then fill the bottle with granulated sugar syrup, made by dissolving a pint of sugar in a half pint of boiling water. It is said by thousands that this makes a most effective home treatment for all cold troubles. The manufacturer guarantees it to please or money back. Sold by all good druggists. (Adv.)

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VILLAGE ON THE MEUSE TO WHICH GERMANS BROUGHT WAR



—Photo Brown Bros.

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