

Deadly Gases in War.

The following letter was written by Lieut. J. S. Milliken from Camp Jackson, S. C., to his parents here:

We have just heard a series of lectures on war gas and thought that it might be interesting to you. Will only state a few of the important facts.

There are more than forty different gases used in the present war but all of them come under one of three general groups, viz: (1) Lachrymating. (2) Asphyxiating. (3) Paralyzing.

The principle of lachrymating gas is chlorine. Chlorine is a constituent of table salt and may be obtained from salt by the use of electricity. This group of gases only affect the eyes. The mucous membrane lining and the lids swell enormously, the pain is severe; vision is cut off and the victim is temporarily totally incapacitated. Then the enemy charge and do not meet with any resistance. Notwithstanding the fact that there is a great deal of pain and discomfort following an attack with this group, these gases are the most humane forms, for usually the discomfort is only temporary, there being no permanent ill effects, the sole object being to temporarily incapacitate the enemy, this being immediately followed by an infantry attack.

The next and most popular group are the asphyxiating gases. They are also the most inhuman forms. The most popular one is phosgen. This gas is sometimes accidentally produced by leaving chloroform exposed for a time to the light in a colorless bottle. This group of gases destroy the lining membrane of the smaller air passages. The victim usually drowns in his own secretions, the lung has lost its function. The only remedy so far known are enormous doses of morphine and absolute rest; patient not even allowed to move his hand or turn over in bed. If they recover from the attack they are usually ruined for life, tire easily on exertion, short of breath. The changes in the lungs produced by these gases are permanent.

The paralyzing group is the most fatal group. The chief one is hydrocyanic or prussic acid. In exceedingly minute quantities it may be obtained from the kernel of a peach seed and is one of the most deadly poisons known to science. One or two breaths of this gas mixed as one part of the gas to 20,000 parts of air is fatal, death being instantaneous. No medical aid can be rendered these victims, even were the physician present, for death comes too quick, besides there is no antidote for prussic acid except fresh air and in a gas attack fresh air is conspicuously absent.

Defensive gas attacks come under the head of the medical department and offensive attacks under the engineering department. The different gases are made in this country and are sent to France under pressure in tanks of varying sizes. Some claim that practically two-fifths of all shells made now are gas shells. Some of them contain liquid gas. When the shell explodes the liquid is scattered over the ground and gives off poisonous fumes for several hours. Liquid gas is also put into glass containers and is dropped from the sky by aviators.

But to go back to the offensive gas attacks. The engineers under the cover of darkness dig holes about 300 yards from enemy trenches and place one of the tanks in and cover it over leaving the stop cock of the valve exposed toward the enemy. They may have to wait for days for a suitable wind. Wind must be blowing toward the enemy and from 7 to 15 miles per hour.

Now these tanks are usually 30 yards apart. When the signal is given the stop cocks are opened in all the tanks and the gas rushes out with a noise like escaping steam. They only leave valves open for a few seconds three times at 10 minutes intervals. Ten minutes after the last one the enemy is charged.

Our men carry two gas masks. The first will last 12 hours, the other one 4 to 6 hours. The mask fits tightly around the face with covered eye openings. There is a clamp which is placed over the nose so that the soldier is forced to breathe through a tube which runs from the mouth to a can containing purifying chemicals. Leading off from this tube is a valve which closes air tight on inspiration but opens on expiration. One cannot talk or see any direction except straight in front. On a hot day they are very uncomfortable.

Now every soldier going to France will be trained to put a mask on and they have to do it in 6 seconds. He must hold his breath until the mask is on and in position when order, "Masks on," is given. You can readily understand why this is so very important for in some gases one breath is fatal. Every man, both officers and enlisted men, when in one mile of the enemy's trench, must wear the mask in the so-called "gas alert position;" that is, mask open, the mask container in front, high up on chest. It never leaves this position; eating or asleep it has to be worn all the time when one mile from the enemy. They are inspected daily by the company commander.

When anyone hears the escaping gas (same can be seen approaching the trenches as a yellow cloud clinging to the earth) the order is given, "Masks on," and they absolutely have to stay on until they are given orders to take them off, possibly several hours later. Officers give the commands by taking deep breath, removing tube and give parts of the orders at a time, then placing tube back in the mouth in time for inspiration. The gas is heavier than air and gravitates to the dugouts and trenches and will stay for hours unless cleaned out. This is accomplished by building small fires or by shoveling it out. Two men have big shovels and follow each other through the trench and shovel the gas over the edge of the trench just as we do snow. There is usually a man on edge of the trench to shovel it away so that it cannot drop back into the trench again. When the officer

thinks it safe he designates a tester to see if air is safe, by inhaling a minute quantity of air through one nostril. If safe, the order is given. "Masks off"

Just after a gas attack all metal has to be gone over, scraped and oiled. Twelve hours later the process has to be repeated, even to telephones and wire connections. Guns have to be taken apart. Those pieces that cannot be reached have to be sent to the rear to a factory located there for that purpose. These gases have a powerful corrosive action and any metal not attended to within 12 hours is ruined.

The liquid gas is the most inconvenient of them all (Of course any gas at the proper temperature and pressure can be made a liquid) When the shell explodes the liquid escapes over the ground and gives off fumes for several hours. This can only be overcome by covering the entire area with dirt.

Anyone exposed and overcome by gas is spoken of as being "gassed," and at first opportunity are taken to the hospital where they are treated with morphine, oxygen and absolute rest. In all trenches are supposed to be white mice and canary birds. Horses wear masks as the men do.

Deadly Gases in War ~ Letter from Lieut. J. S. Milliken from Camp Jackson, SC to his parents in Pittsboro.

5 Dec 1917, *The Chatham Record*