



U.S. Marine in France learning how to adjust gas masks at a training camp. Their instructor is a French Army Officer. (Photo courtesy of Naval History and Heritage Command)

GASSED! NAVY MEDICINE AND THE POISON GAS THREAT OF WORLD WAR I

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At 0400 on April 13, 1918 shouts of “Gas attack!” could be heard across Camp Fontaine-St. Robert in the Verdun Sector of France. Located two miles from the front, this wooden hollow served as the makeshift quarters for 300 Marines and Sailors of the 74th Company, 6th Marine Regiment. Over the next four hours the unit was bombarded with yellow and blue gas shells and high explosives.

Two hospital corpsmen—Pharmacist’s Mate Third Class Fred Schaffner and Hospital Apprentice First Class Carl Kingsbury—worked under the cloak of morning darkness aiding victims and moving them to higher ground.

Unable to see clearly through their own gas masks both men would remove them. Each would pay severely for this momentary lapse in judgment.

Schaffner would die from gas exposure, becoming the first hospital corpsman casualty in World War I. Kingsbury would become incapacitated and not able to rejoin his unit.

After the attack, ninety four percent of the 74th Company had to be evacuated to the regimental aid station. Eleven percent of the company would die within 72 hours from exposure, the highest mortality



Carl O. Kingsbury (Photo from BUMED Archives)

rate due to poison gas among the American Expeditionary Force (AEF) personnel.¹

Poisonous gas is as synonymous with the Great War as shell shock, trenches, machine guns and mud. By the time the United States entered World War I, the dangers of gas attacks had been well documented. Germans had employed tear-producing agents like xylyl bromide as early as 1914 and the more lethal chlorine gas beginning in 1915.

First used by the Germans on the Western Front in April 1915, chlorine's original victims were French colonial troops entrenched near the Belgian town of Ypres. Survivors of the attack would later recall detecting a peppery-pineapple odor as a yellowish-green cloud approached their position. Within an instant they became blinded and panicky as they struggled for breath. The chlorine gas had done its job.

Phosgene—a more lethal lung irritant—would be employed by Germans against British forces at Ypres later in the year. But neither chlorine nor phosgene would be used as extensively as the so-called “king of the gases,” mustard.

Mustard gas (dichlorethyl sulfide) was named for its distinctive odor; victims sometimes described it as smelling something akin to mustard or horseradish. Unlike chlorine or phosgene, mustard was an atomized liquid vesicant that caused painful blistering to anything it came in contact with—be it skin, mucous membranes, or lungs. The longer the exposure the more severe the pain. The gas could also permeate clothing, even gas masks; and could linger on surfaces and in foxholes, dugouts and trenches weeks after an attack further complicating any notion of “shelter.”

A Navy physician visiting a ward of mustard gas victims would recall his astonishment at the toll the poison took on its victims. “I stood speechless and stunned before I proceeded down the ward between the rows of beds. Men were coughing terrifically in spasms and with many portions of the[ir] body badly burned, particularly the hairy regions where mustard gas was long retained. . . Eyes were badly burned. Pus was streaming down their faces from their eyes, their lids of which could not be fully closed due to the swelling and accumulated pus.”

In 1917, the U.S. Navy Bureau of Medicine and Surgery organized a special investigative team to explore defensive measures against the gas.² Viable treatment options on the front were, however, limited and in all cases required immediate evacuation to advanced medical facilities where showers and baths of calcium hydroxide (limewater) were made available. During the war the U.S. Army had even begun

employing special mobile gassing units, which offered contaminated military personnel showers and a change of clothes. For those suffering respiratory issues, oxygen therapy was used when available.

The cessation of hostilities on November 11, 1918 did not close the book on poison gas—in many respects World War I was only first chapter. Poison gas had forever changed the complexion of warfare and remains a concern to this day.³



88-198-I-Gas Mask Drill Painting, Gouache; by Alexander P. Russo; 1944 (Courtesy of the Navy Art Gallery)

(3) In 1925, the Geneva Protocol (The Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare) outlawed the use of poisonous gases in war among signatories.

Sources.

Notes.

(1) An officer with the 6th Marine Regiment later estimated that forty percent of the casualties had not worn their gas masks or had prematurely removed them.

(2) In 1917, to explore pathology and treatment options of gas poisoning, BUMED organized a team of medical researchers under Lt. Cmdr. Eugene DuBois. DuBois was a submarine medical officer and physiologist who would later be credited for devising new air purification systems aboard submarines. During the war, he and his team would collect data on gas attacks and explore treatment options, devise a special course of instruction on chemical warfare and release guidance and circulars on treatment options throughout the Navy and Marine Corps.

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