Real Life Safety Heroes: Dr. Cluny Macpherson

The gas mask is the progenitor of much of the modern respiratory protective equipment that workers exposed to hazardous airborne substances rely on to guard their lungs. Gas masks have been around for centuries. In 1799, the German scientist Alexander von Humboldt produced a rudimentary gas mask for use by miners. Firefighters began using the mask soon after.

A New Use for Gas Masks

The gas mask became a piece of military equipment in World War I. At the start of the war, the armies issued masks to protect soldiers against carbon monoxide emitted by unexploded shells. Such concentrations were particularly dangerous in the trenches and confined spaces where the soldiers spent most of their time.

Sadly, gas masks would soon be put to a new use. On April 22, 1915, the German army introduced the use of toxic gas as an offensive weapon during an attack in Ypres, Belgium. Soon, both sides were using deadly chlorine gas known as mustard gas because of its yellow color. The first gas attacks caught the armies unprepared. Canadian soldiers were advised to urinate on rags and hold them to their face to avoid breathing in its vapours.

The Macpherson Respirator

Both sides worked feverishly to develop more effective protection against gas attacks. Among the scientists mobilized for this critical duty was physician Cluny Macpherson, principal medical officer for the first Newfoundland Regiment of the St. John's Ambulance Brigade. Working from a contraption created by the Germans, Macpherson devised a canvas hood helmet treated with chlorine-absorbing chemicals and fitted with transparent plastic eyepieces.

The Macpherson "smoke helmet" became the most important piece of protective equipment during the war saving the lives of countless Allied soldiers. The British manufactured more than 2.5 million of them by June 2015. As the war progressed, the gas mask was modified for use against other poison gases used on the battlefield, such as phosgene and chloropicrin. After the war, Macpherson was made a Companion of the Order of St. Michael and St. George.

The Respirator's Impact on PPE & Workplace Safety

Macpherson's safety legacy would continue for decades after World War I. The Macpherson respirator became the basis for new and improved gas mask designs incorporating advancements in materials and filtration allowing for protection against a wider range of hazards and applications, including use as workplace respiratory PPE to safeguard workers against exposure to hazardous substances. I guess we'll never know how many workers in factories, shipyards, mines, healthcare facilities, and countless other work sites owe their lives and respiratory health to that doctor from Newfoundland.

By Glenn Demby