

NEW YORK, SUNDAY, NOVEMBER 27, 1921.

VIPER WARFARE THAT WOULD ANNIHILATE NATIONS
Terrors of Poison Gas, Planes and Submarines Stagger ImaginationScience Has Developed Engines of Destruction So That Cities Would Be Obliterated in a Few Moments With Tens of Thousands of Tortured Victims Amid Their Ruins—
Fleets Face Sinking Without Warning by Perfected Torpedoes, and Bombs From Above Would Kill Struggling Crews With Gas

WHAT VIPER WARFARE REALLY MEANS.

Those stealthy creations of hell, the submarine, poison gas and the fighting plane, should be swept from the world.

In another decade the airplane will have the world at its mercy, and can then destroy armies, navies, cities, industry, commerce and civilization itself. A fleet of these monster airships laden with poison gas shells and powerful bombs could annihilate London or Paris or New York in a single night, with unspeakable human carnage.

The time to throttle this monster is before it overwhelms the world.—From an editorial in *The New York Herald*, November 18, 1921.

Special Correspondence to THE NEW YORK HERALD.

Copyright, 1921, by THE NEW YORK HERALD.

By DONALD M'GREGOR,
Formerly Captain U. S. Army.

New York Herald Bureau,
Washington, D. C., Nov. 26, 1921.

THE next war will claim its toll of death in tens of thousands where thousands have fallen in the past.

It will be brief, a war in which all the developments of science will be employed, quickly, surely and with grim precision.

The next war will see whole cities obliterated within an hour. The end will come swiftly to the civil populations. Non-combatants, such as women, children and invalids, will gasp and fall dead in their tracks. Poison gas is no respecter of persons.

The bodies of the victims, the agony still showing in their faces, will be burned. Phosphorous bombs dropped from airplanes will set the cities aflame so that only smoky stone and concrete framework of monstrous buildings will be standing amid the ashes as monuments to the dead.

The next war will find engines of death steeling through the night to envelop a magnificent battle fleet. The torpedo, unsimed, but with a mechanical device that steers it on its course to the steel armor of a warship, will send a crew of 1,500 officers and men to death in the seas. Those who struggle gamely for life amid the floating wreckage will be smothered with gas.

Armies, selected from the superior manhood of the nation, will be destroyed by the newest overpowering weapons that science has devised. The next war will take away the last vestige of individual bravery—sportsmanlike warfare, if you please—that has in a sense marked war in the past.

The stirring days of 1861 are well within the memory of many. Out of the North and the South there marched young men in blue and gray to shoot at one another with rifle and cannon. Individual bravery counted for much in those times, leadership, marksmanship with the rifle, close contact with the bayonet and the sabre. This was true during the Revolution, the War of 1812 and the war with Mexico. The Spanish-American war had many of the same elements, and the nation looked on the soldier as one who went forth to do his part against the enemy, not as the unit in a great scientific machine for wholesale killing.

Machine warfare to a certain extent characterized the world war, but science did not get fully into its stride until the closing days. The appalling methods of dealing out death were fairly well developed, but not to the highest point, when the armistice came. It has been since that eventful date in 1918 that the greatest advancement, if advancement it may be called, has come about in the scientific ways of killing men.

These terrible new instruments are the



How science has developed viper warfare vividly portrayed, with the test tube mightier than the cannon and its product more deadly than any army. Above at left is Brig-Gen. A. A. Fries, Chief of the Chemical Warfare Service, who recently told of new poison gas infinitely more horrible than any used in the war. At right is a "buddy" on kitchen police in gas strewn area.

airplane and the bomb, but while the means of using them has developed there have been some very important, although less spectacular, improvements in the use of submarines. Altogether they constitute what now are being called the "weapons of the viper."

They are so deadly, so complete in their destruction that the Conference on the Limitation of Armament now gathered in Washington will be asked to call a halt. The delegates of the civilized nations of the world will be appealed to to forbid their use, to stop their further development, so that if war ever comes again all mankind will not be annihilated.

The airplane and the bomb go hand in hand. One is ineffective without the other. Further, the bomb is the only successful method of handling poison gas.

It is obvious of course that if poison gas is to be released it must be sufficiently far from those who release it so that there be no back action. Anything so deadly easily might result in the death of those who are attempting to administer it. The result, therefore, is that it can be put out in one of two ways, when dropped in containers from airplanes or when hurled through the air in canisters as a shell from artillery.

This last never has been successful.

There are many elements to be considered in regard to a shell; one being its bursting ability when it hits. Another feature is the inability except in the largest shells to carry any poison gas in quantities worth while. These features are overcome in the airplane, which may drop a thin wall bomb full of poison gas with the assurance that on hitting the ground the container will break, thereby releasing the gas.

The poison gases that have been developed by the United States Army are the most deadly in the world. It has been estimated that a single drop will kill immediately on contact. The gases are of various kinds, however, and their results different. They have been worked out by the foremost chemists of the nation, scientists in the fore rank, who have gone at the matter coldbloodedly to develop the most deadly vapor in the world.

America never went into the question of poison gas until the start of the world war. Then in the rush to be prepared for the conflict a group of chemists was called to Washington to give the benefit of their knowledge. There developed then as a unit independent of the Ordnance Department what is known now as the Chemical Warfare Service, which has been retained as a separate staff corps.

It may as well be said frankly that the name "Chemical Warfare" was selected to avoid the word "gas." The army itself felt it would be unbecoming to retain the name originally intended, the "gas and flame" service.

Of course, the Chemical Warfare Service has gases other than poison gases. The variety includes some which are not so deadly, tear gas and gases which merely burn, without leaving permanent injury. The names of the various chemicals used in modern warfare—it is too inexact and loose to say poison gas war, chemical warfare being much more accurate and descriptive—are too familiar to warrant repetition. Chief among these now familiar weapons of shell is mustard gas, which caused far more casualties in the last war on both sides than any other chemical employed. Without question, our military men agree, developments of mustard gas will be a prime weapon in the war of the future, if there is to be another war.

Mustard gas has this frightful characteristic: Sprayed over an area of ground into dugouts or underground retreats, cast anywhere in any manner, it absolutely makes that territory uninhabitable by living creatures for at least a week, and often ten days.

Brig-Gen. Amos A. Fries, now Chief of the Chemical Warfare Service and acting as chemical war adviser to the conference, is inhibited by his present duties from chemical warfare discussion, but it is unlikely that he has changed his views recently given. At that time Gen. Fries most vividly portrayed the ruin and desolation that could be brought on any land by even a few airplanes freighted with even a few tons of mustard gas alone.

The vision of this competent authority embraces a picture of a great city, say New York, at night. Five million persons are sleeping peacefully. Twenty thousand feet above a million homes a squadron of fast flying planes is circling. Long before, the pilots and the gas bombers, perfectly equipped with maps and directions, have plotted the vulnerable points of the metropolis, knowing to a hair where to place their devastating fluid to do the most damage.

At a word from the squadron commander levers are tilted, which release over central Manhattan, over Harlem, over the lower East Side, over the upper West Side, thousands of pounds of poison gas. Within three minutes the city is screaming with terror and pain. Those not blinded are burned. There is a rush for the infected areas. The deserts themselves are



not less habitable. Fires start and there is no means of quenching them. Great districts fall into blackened ruins. It is impossible for the military, the police or volunteers to come within effective distance of this active, functioning poison.

That is one picture.

There is another, still partly imaginative, it is true, but which is being translated into fact in more than one laboratory of the great Powers. For many years chemists have dreamed of some radioactive substance which would continue almost indefinitely to throw off burning, deadly force. Before the last war closed there was more than a hint that some such substance was in process of development. H. G. Wells in one of his novels used the idea with dramatic force. If that substance is ever found warfare will become as impossible as cannibalism. Any country, no matter how small or weak, will have the resources sufficient to equip itself with that savagely destructive weapon.

Without going into the future, however, another glance or two into the recent past is revealing. Of the 275,000 casualties of the United States Army in the last war more than 31 per cent. were caused by the various gases used, with mustard gas the most hurtful.

Advocates of chemical warfare insist that the use of gases is the most humane method of attacking an enemy. They base their contention on the fact that as a rule the great majority of gassed men recover under skillful treatment with little evil effects. They argue that it is infinitely more humane to asphyxiate a few thousand men temporarily, thereby putting them out of action and accomplishing a desired tactical stroke, than it is to shatter their bodies with shrapnel or machine gun bullets.

Without speculating too much on the probability, it is worth while saying that many thoughtful persons in our military service and in the scientific departments of the Government would like to see unlimited experiment and development in chemical warfare methods because they believe that very rapidly chemical warfare weapons would be perfected to such a dreadful menace as to make war utterly unthinkable.

They say, too, that with this chemical weapon ready at need in our great dye factories, the United States need have no fear of foreign armies or foreign navies.

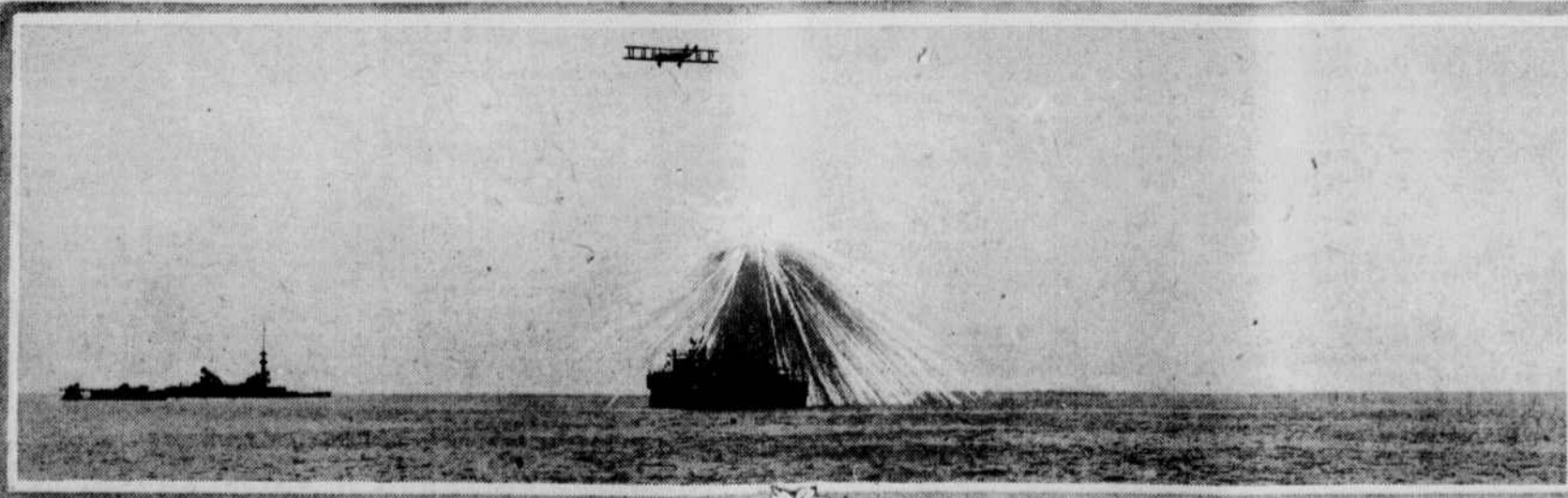
But it is not only poison gas that is dropped from airplanes. There are many other types of bombs which wreck damage, making this new scientific warfare more terrible.

There are bombs that set fire to cities, cantonments and fields, bombs filled with phosphorus, in the flames of which nobody would be able to exist. These were demonstrated not long ago in the army tests with the obsolete battleship *Alabama* in Chesapeake Bay. The flames enveloped the ship and it was demonstrated that such an attack on a vessel of a fleet would kill the crew, of course putting the vessel out of action.

There are other types of incendiary bombs, large canisters, that contain flares which, bursting on the way down from the sky, are scattered along for a considerable distance, igniting everything with which they come in contact. And the officers who devised this deadly bomb declare confidently that not a fire department exists which could cope with such an attack.

The ease with which armies could be destroyed with aircraft has been demonstrated time and again at the army proving grounds at Aberdeen, Md., with a type of bomb which explodes on hitting the ground and sends great quantities of shot in all directions, mowing down line after line of soldiers.

In their development of this bomb those



This photograph shows a phosphorous bomb weighing only 100 pounds hitting the maintop of the old battleship *Alabama*. It was dropped from the airplane. Naval experts said this hit would have eliminated the ship from action by destroying the fire control crew.

Continued on Following Page.