

Warfare of the Future

The Radium Destroyer

THE European War has clearly demonstrated what a tremendous part modern science plays in the offense as well as in the defense of the contending armies. It has often been said during the past twelve months that this is not a war so much of men as of machines. Nothing could be truer. In fact, it might be said that this is a war of infernal machines against more diabolical machines.

It has been stated editorially in this journal that there will be war always, or at least till we arrive at a period when some scientific genius (or shall we call him devil?) invents a machine which at one stroke is capable of annihilating one or several army corps. When that time arrives, soldiers, no matter how courageous, will think a long time before they will offer themselves to be slaughtered by the hundred thousand.

In the meantime, probably for many generations to come, the war death-dance will go on without any doubt whatsoever. Humanity simply has not advanced to such a state where disarmament is possible. Our real civilization only dates back less than 100 years, and as human progress is extremely slow, it may take a thousand years and more before humans will learn how to trust each other implicitly. As long as we require policemen and jails to keep us out of mischief, we are not able to take care of ourselves and we cannot call ourselves emancipated—we are still held in bondage by the brute in ourselves, which threatens to break out at any opportune moment, as is witnessed in the present war.

Therefore, the pacifists, particularly those in our country who think that this is the "last war" and who go around shouting peace at any price, are not only a sorry lot, but they are cheerfully oblivious of the teachings of history as well as of human evolution.

These good people would shout murder if you dared suggest to them to dismiss at once all policemen and patrolmen of their home town, but they would trust a strange nation implicitly from making war on this country, simply because that nation pledged itself on a piece of paper not to make war!

If the present war is ghastly with its poison shells, its deadly chlorine gas, its bomb-throwing aeroplanes, its fire-spraying guns, its murderous machine guns, etc., what can we expect of the wars of the future?

What will happen when the scientists of a hundred years hence begin making war on each other?

Suppose that by that time our scientists have solved the puzzle of the atom and have succeeded in liberating its prodigious forces. Imagine that at that time one atom can be disintegrated at will, instantly into another, what will happen? The results will simply be overwhelmingly astounding and almost incomprehensible to our present minds.

It has been calculated that if we could liberate the latent energy at present locked up in a *copper one cent piece* we would be enabled to propel a train with 50 freight cars over a distance of 600 miles!

Now, then, bearing this in mind, let us imagine that 100 years hence some scientist invents a means to unlock atomic forces, and how to control them. We can see him stepping to the throne of his future War Lord (if such still exist then), addressing him in this fashion: "My Lord, with the means of my invention the world is yours;

will you make yourself the first Master of this Planet?"

The War Lord promptly asks for a secret demonstration of the new "*Atomic Gun*," and what he sees intoxicates his imagination to such a degree that he decides to make war on the entire world as soon as his generals have assured him that enough atomic guns have been manufactured to make success certain. And one beautiful spring morning our War Lord finds a perfectly logical pretext to make war on a few nations, and the latest war dance is on.

Within a few hours the first atomic gun, popularly known as the "*Radium Destroyer*," has crossed the enemy's frontier.

The Radium Destroyer is mounted on fast moving auto trucks and is controlled entirely by Radio energy. No man is within a mile of the Destroyer—it is too dangerous to be near it when in action. A young lieutenant with phones clapped over his head and who follows the Destroyer in the "*Control Auto*," and who gets his own orders from the General Staff by Wireless, guides each and every motion of the distant Radium Destroyer simply by moving certain keys and switches in front of him.

Soon his Destroyer has arrived in front of the enemy's first line of concreted steel trenches, protecting the land behind them. In front of the trenches the ground has been purposely cut up to impede the progress of ordinary vehicles. The General Staff, of course, knew this, and built the Destroyer accordingly. Our friend the lieutenant stops the Destroyer's truck and moves a lever. Immediately the Destroyer hops from the truck and begins to jump with amazing speed over the cut-up ground, in grasshopper fashion. A few hundred feet from the well-concealed concrete trenches the Destroyer is made to halt. Our lieutenant moves a few switches, turns a knob and presses a key—then lo! the inferno begins.

A solid green "*Radium-K*" emanation ray bursts from the top of the Destroyer and hits the concreted steel trench. Our front cover gives but a faint idea of what happens. The Radium-K emanation has the property of setting off spontaneously the dormant energy of the Atom of any element it encounters except lead. So when the ray hits the trench it went up in dust, concrete, steel, men and guns behind it, everything. After spraying the trench lengthwise for a few minutes it is gone completely. Only a dense cloud of vapor hanging in the air remains.

The fleet of Radium Destroyers now enters through the gap, destroying everything in their path. No gun can hit the Radium Destroyer for ere the gun can get the proper range, the Radium-K Ray has hit the gun or the ground below it and has sent it up in vapor, including the men behind it. As a demonstration, the Commanding General asks that the first town encountered, a city of 300,000 souls, be vacated within three hours. The terrorized inhabitants are forced to comply with the request, whereupon a dozen Destroyers line up on the hills and spray the unlucky city with their fearful rays. Within five minutes the entire city, houses, churches, bridges, parks and everything else have gone up in a titanic Vapor cloud; only a vast crater in the ground where the thriving city once stood remains.

After this demonstration the enemy sues for peace; resistance would be folly. The country is conquered. Within a fort-

night the War Lord has conquered the entire world and has proclaimed himself as the First Planet Emperor.

What happens afterwards when the secret of the Radium Destroyer is discovered by the War Lord's enemies is another chapter, so we will desist!

The above may read very fantastical and extremely fanciful. It is, however, not only very possible but highly probable.

Modern Science knows not the word Impossible.

ANENT WARLIKE INVENTIONS.

It is one of the anomalies of warfare that the machinery for fighting and killing has been brought to its present ghastly perfection not by swashbuckling, bloodthirsty soldiers, but by the mild-mannered, peace-loving civilians, says the *Review of Reviews*. True, both army and navy officers have exercised their ingenuity to heighten the terrors of battle, but theirs are rather academic improvements on the more daring contrivances of civilian mechanics and engineers.

Who gave us the turreted ironclad? Not a naval officer, but Ericson, a marine engineer. Who invented the machine gun, which squirts death every day on a dozen European battlegrounds? Not a colonel or a captain, but Hiram Maxim, a brilliant American mechanic. Who gave the battleship its quick-acting gun-elevating mechanism? Not an ensign or a commodore, but Janney, an American mechanical engineer. Who invented the motors for turning turrets rapidly? Not a lieutenant, but H. Ward Leonard, one of Edison's former assistants. Who planned the submarine? Not a Hull or a Nelson, but Robert Fulton, an artist.

So, one after another, the really important, the really epoch-making inventions comprising the mechanism of warfare prove to be the conceptions of romantically imaginative but lamb-like private citizens. Usually their contrivances are anything but perfect. They must be developed, and it is in their development that the professional soldier has been most serviceable.

It is thus not only with the guns and submarines of war, but also with the telephones and electric lights of peace; for the inventions that have made the United States and other countries commercially great came not from within given industries, but from without.

Always it is a dreamy pioneer, an intrepid free-lance, aflame with enthusiasm, who enriches his country with a radically new labor-saving device or way of utilizing energy. Morse was a portrait painter when he first turned his attention to the telegraph; Bell was a teacher of deaf mutes when he began his experiments with the telephone; Edison was a patentee of telegraphs and phonographs when he gave us the incandescent lamp; Marconi was a mere lad with a liking for physics when he conducted his first successful experiments in wireless telegraphy.

With the single conspicuous exception of Edison not one of the inventors who have blazed new trails gave to the world devices that could be marketed at once. Development was necessary—development by less brilliant intellects identified with the industries that were benefited.

WIRELESS ON CAPE COD.

The United States Navy will establish a wireless station on Cape Cod especially equipped to guide vessels along the Atlantic coast in time of fog.