

According to the *Herald* correspondent, the War Department has information of a new system of harbor and coast defence invented by E. O. Rudebeck, a Swedish engineer. It is claimed for it that it offers no obstruction to trade, and is free from danger to vessels engaged in defence. It consists of a system of torpedo towers for the outer harbor, and of vertically ascending torpedoes and bottom mines for the inner channels. The torpedo towers are cylindrical, with conical or cupolashaped roofs, and they rest upon piers, masonry, or the natural bottom, according to circumstances. They are invisible to the enemy, their upper surfaces being several feet under the water. The towers consist of several stories, and the torpedoes are arranged in each story and are projected horizontally by a spring, electro-magnetism, or any motive power. In the centre of the tower a vertical channel affords communication between the several stories. The officers charged with the defence are stationed in casemates ranged on the side of the harbor. Electric cables are laid from each casemate to the towers, and on the approach of an enemy's vessel the angle which its course makes with a line drawn from the casemate to the tower is telegraphed to the officer in the latter. This determines which of the torpedoes shall be projected. The embrasures or the towers are protected by shutters, which are so arranged as to open the moment the torpedo is projected, and to close again immediately afterward. The electro-magnetic machinery is said to be very simple. Where it is necessary to use mines it has been shown by several experiments that a very small quantity of dynamite is necessary to sink an iron clad when exploded within three feet of the vessel's side. The inner harbor is defended under the system by torpedoes that ascend rapidly from the bottom, or may be projected horizontally, and are fired by electricity. In order to protect them from destruction by the enemy, they are collected below the deck of submerged pontoons, which are furnished with machinery for projecting them either vertically or horizontally. By this device the inventor believes that he has overcome all danger of having the torpedoes dragged out or exploded by the enemy. Use or both systems may be employed, according to the formation and condition of the coast and harbor. *U.S. Army and Navy Journal*.

Interesting and highly important experiments with dynamite and compressed gun-cotton continue to be made and deserve to be recorded. The other day, says the *London Engineer*, a series of experiments were made under the superintendence of the inspector-general at the Engineers' Polygon at Arras, on the comparative effects of gunpowder, dynamite, and compressed gun-cotton. Two wooden bridges built on piles were blown up; beneath one of them was placed a barrel containing 1 cwt. of powder, carefully pitched outside, and an electric spark being passed a violent explosion occurred, which produced a magnificent cascade of water, smoke, and broken timber. The second bridge was then tried with dynamite—quantity unfortunately not stated—which was placed in a cavity and not over one of the principal supports of the bridge, the consequence was that the injury done by the explosion was superficial. Afterwards a small charge of dynamite was placed on one of the trestles which support these military bridges, and shattered it to pieces. The next experiment was very conclusive; the explosion of the barrel of gun-

powder in the first case had left the piles intact, and the destruction of these piles is of course, of the greatest importance to a retreating army. Several dynamite cartridges were now attached to a small wooden frame, which was slipped over a pile and allowed to fall to the bottom of the stream. When the cartridges were fired the pile was snapped off and shot up violently into the air. Another experiment was made on a large poplar. The tree was surrounded by a canvas collar as big as a German sausage and filled with dynamite, and when fired the tree was cut through very cleanly where the collar had been, so cleanly indeed that the upper portion remained for a second or two poised upon the lower and then fell with a crash. Charges of compressed gun-cotton and of dynamite were then laid against a section of permanent way prepared for the purpose, and the effect of two explosions was almost identical, each tearing out a piece of rail about half a yard long. When another charge of compressed gun-cotton was laid against the joint of two rails, and covered with bags of earth, the effect was far greater; the ends of the rails were broken off, and the rails themselves wrenched out of position. An experiment was then made by firing a ball against charges of dynamite and gun-cotton took fire, but the dynamite resisted. This result was not in accordance with former experience, and the opinion was that the dynamite must have become injured in some unknown manner. The experiments terminated with the explosion of a mine containing a ton and a half of powder, buried in three separate portions, at a depth of 16 ft.; an immense irregular dome, composed of earth and stone, rose majestically and hung for a few seconds in the air, the soil stifled the greater part of the noise of the explosion, but a violent shock was left at a long distance. The ground was torn up in an extraordinary manner, and presented a gaping gulf 12 ft. to 20 ft. deep, about 100 ft. long, and 30 ft. wide.

How one of the most astonishing *canards* of the late war gathered credence as ultimately adopted by the French government is amusingly related in the *Figaro* and translated by the *Army and Navy Gazette*. It will be remembered that while terrible fighting was going on round Metz the news arrived in Paris that Prussian *corps d'armee* had perished in the quarries of Jaumont, and the most sensational accounts for this fearful tragedy appeared in the papers. Correspondents, who had visited the spot some days after the catastrophe, found there a still palpitating mass of men and horses, some dead, others dying, and the whole heap of mangled and crushed victims swaying about with the efforts of those still alive to escape from their terrible fate. It appears that there are quarries at Jaumont out of which Metz and its cathedral were built; but this is how the *canard* was hatched, on the 19th August, 1870, at the Rheims station: A peasant of Amanvilliers, who had come from Verdun early in the morning to tell the *Maire* about the battle of St. Privat, which had been fought the day before, was taken before General Guerin de Waldersbach. This peasant, in order to revenge the death of his son, caused the soil to give way beneath the feet of the German hosts, who were precipitated into the quarries. The *Maire* interrupted him, and said that the story was an old tale of the siege of Metz by Charles V., polished up for the occasion. However, the peasant repeated

his account in the market place, and the news flashed through the town, and reached the railway station. General d'Exea was there with his staff, and he received the legend with distrust. The quarries of Jaumont, too, were not marked in the maps which he had at his disposal. However, M. Louis Noir (who was the author of many wonderful tales respecting the Crimean war) was present with a map drawn from the time of Louis XVI, and in it the famous quarries were placed at the spot indicated by the peasant. M. Louis Noir showed this map to General d'Exea, who then forwarded a dubitative despatch to the War Minister, who made the following announcement in the Chamber on the 20th August. "I have shown to several members of this House despatches which state that, instead of having obtained any advantage on the 18th, three *corps d'armee* which were opposed to Marshal Bazain were, according to various accounts which appear worthy of belief, driven into the quarries of Jaumont." Before the news reached Paris the original *corps d'armee* had become three *corps d'armee*; but it is now acknowledged that no one fell into the quarries, from which the Prussians are now drawing stones for their new forts. Concerning these works destined to protect their latest acquisition it may be mentioned that Prussians are constructing two large iron clad batteries, one on each side of Fort St. Privat, which will command and sweep the valleys of the Sella and the Moselle.

The *Cologne Gazette* is enabled to state that an improved model of the Manser rifle has been definitely selected as the German infantry weapon of the future. The choice was really made ready a year ago, though it has hitherto been kept secret. The original has, however, been so largely improved upon that the new gun hardly deserves to be called by its name. The weapon is highly spoken of. Even before its manifold improvements it could be fired twenty six times in a minute, which is twice more than the Werder rifle, and even men unused to its handling could in action be trusted to fire twelve or fifteen rounds a minute. The rifle is constructed on the central fire system, and the cartridges are cased in metal. It is lighter and considered more handy than the Chassepot, and answers in truthness of shot to the improved needle-gun, which in other respects it surpasses. The shape of the bayonet is still undetermined. It will be either an ordinary triangular bayonet or a sword bayonet. Government is so anxious to arm the infantry with the new gun that large orders for component parts have been given to private makers, among others to a sewing machine manufactory in Berlin; but the finish will invariably be given in the Government works at Suhl and Amberg. Even with these helps the work cannot progress as rapidly as is desired—namely, so as to enable the army to be completely served within two or three years.

The English people, not content with rifle-matches, boating, cricketing, and the Derby Day, have introduced a new game, called "polo," which is only a game of "hockey" or "shinny" in which the players ride ponies. It is of Oriental origin and bids fair to be quite popular, since the necessity for having a pony will make it an aristocratic game.