

NOTES OF A LECTURE, DELIVERED TO THE OTTAWA FIELD BATTERY.

SUBJECT:—The Military Machines of the
Ancients.

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It appears that the word Artillery, was applied in times past to all offensive weapons. This may be gathered from the English translation of the Old Testament Scriptures; for on reference to the Book of Samuel, we find that Jonathan gave his artillery unto the lad.* It won't do to let ourselves be deceived by words. The learned men who translated the Old Testament into English often used words in English, to express the meaning in the original language, which would be understood by the people, but are not a correct translation of the Hebrew; thus it is said that "wine is ruddy in the glass," and we hear in Isaiah of the "looking glasses of the women," whereas we know that in that day there was no glass; when the Old Testament was translated glass was known among civilized nations, and the name of the material was given to the utensil. The word glass in the first quoted instance is, in the original "cup," and in the last "mirror,"—the cup may have been of metal, or of clay, or other material, and the mirror was of polished metal, the mirrors described in Exodus, as the "looking glasses of the women" which were given to Moses to be melted up for the great brazen laver of the Tabernacle.

It is not very certain what is the origin of the word "Artillery." It has been stated by a French writer that it comes from "*Artiller*," a word signifying to fortify, and now disused in the French language, but Vossius, a very learned man, on the origin of languages, gives his opinion that the word is simply a corruption of *Arcualia*, or machines in the form of, or on the principle of, the bow and arrow, the Latin name for Bow being "*Arcus*."

However this be, the fact is, that the word has been for many centuries employed to denote Engines or Machines of war, and though originally not understood as we now understand it, it was applied to cannon not long after their invention.

The object of the lecture to-night, is to give you some idea of what the engines were which were used in war before the application of the explosive composition known as Gunpowder, to the bronze, or iron tube, which we now call a gun or cannon.

The subject cannot be treated as I would wish to, for I am obliged to depend on memory, there being in Ottawa no public library containing works on antiquities, but I think I can give you a simple account of the principal engines, or, as the old Greeks and Romans called them, Military Machines, which you will readily understand, the more so that the most of my gunners are good mechanics.

But a few preliminary observations are necessary. In order to form a correct notion of the mode in which these engines were used, you must have some idea of the ancient method of fortification.

I am always fond of referring to the Bible, because, independently of its divine origin, it is the oldest historical record that we have, and we find that we do not go far into the sacred

record without discovering that fortification was of very early origin. In a very short time after the flood we find mention made of the erection of the City and Tower of Babel, and it may not be uninteresting to know that we have just received some information which leads to the conclusion that the Tower of Babel has been discovered in the plain of Arbela in Asia Minor. At least a ruined building has been discovered there of such height that it is visible at a distance of forty miles across the plain, and people who understand these matters are inclined to think that it is the remains of the mighty tower spoken of in Genesis.*

In the same Scripture we continually hear of cities fenced, rude were they no doubt at first, but gradually improving, as man made progress in the arts, but the same architects who built the everlasting Pyramids of Egypt would have had no difficulty in constructing the walls by which a city should be fenced in.

Accordingly we find, as we descend the stream of time, that history records the fortification of great cities, records their sieges, their triumphant defence, or their disastrous capture.

The plan of fortification pursued with various but unimportant modifications for many ages, until the invention of gunpowder and cannon compelled an alteration, was to surround the place to be defended with a deep ditch, and a vast and lofty wall, built of the most solid masonry, with a broad top, or rampart, on which its defenders stood, and a parapet in front, towards the enemy, by which they were covered. It is not necessary to enter into details—to show how this wall was further defended by lofty towers arising far above its summit; of the gates, barbicans, bridges and other defences; I simply wish you to understand that the main defence was a very high wall. You will think of this hereafter when you are told in a future lecture that the wall which is to resist cannon can hardly be too low.

In order then to get into this place defended by a ditch, and lofty wall, flanked by high and projecting towers, it was necessary to fill up the ditch, and then either to scale the wall and get over it, or break it down and get through it.

There were several ways of doing this. If there was no ditch, which was often the case, the besiegers commonly tried to take the town by storm after this fashion. They sent out archers and slingers who tried to beat away the defenders of the wall from its broad summit by a shower of arrows and stones; by means of the machines which will be described hereafter they hurled great stones upon the ramparts, and vast iron pointed darts; they then formed themselves into a column; the men raised their large shields, four feet long and two and a half wide, over their heads, and so locked them together, that they formed a roof, perfectly impervious to missiles from the wall. The first party, some fifty files deep, thus covered by their shields, advanced to the foot of the wall, closely followed by another. The rear files then knelt down, all the files in advance stooping down from the rear towards the front until the covering of shields was sloped like the roof of a house. The second party then dashed forwards covered in the same way by their shields, and mounting over the others, in fact standing

on their heads, came to a hand-to-hand encounter with the enemy on the wall. If they got in, it was well, other parties followed them in the same manner, and the rampart was won, if beaten back by the weight of the hostile weapons, they retired, still covered by their great strong shields, to re-form for another assault.

This mode of attack was called the *testudo*, or tortoise, from the resemblance of the column with its locked shields to the upper shell of the turtle, or tortoise species.

If a town was defended by a ditch, a more tedious process was used. The ancients understood military mining as well as we do, but having no gunpowder they were obliged to resort to a different expedient. They too, like us, sunk a perpendicular shaft into the earth, and from it drove a horizontal gallery towards the enemy's walls, till they penetrated beneath them. As the gallery was pushed on, the roof was supported by wooden props and planks.—When they had ascertained by computation that the gallery of the mine had passed underneath the wall, they filled the whole passage, around and among the wooden pillars, with faggots of light wood, and other fiercely burning combustibles, set fire to them, and as a natural consequence, when the props were burnt through, the weight of the wall brought it down into the chasm, a mass of confused ruin. The storming parties, who were held in readiness, rushed up the breach to the assault, just as we now do when the wall has been brought down by the fire of Artillery.

The next mode was to surround the town, or the attacked part of it, with a rampart of earth, either for the purpose of starving out the garrison, or as the first step in a more prolonged, and more scientific fashion of assault. This rampart which was covered by a ditch was generally at about 400 yards from the wall of the besieged town. It was further protected by rows of sharp sticks driven into the earth, and by holes dug in the ground and slightly covered over, to form traps for the enemy in case they sallied out.

The next step was to commence from the rampart of the besiegers a mound of earth, stones, faggots, and other available material, extending towards the wall, to which it was gradually advanced, and continually increased in height, until it equalled the height of the wall. This was done with comparative safety to the besiegers, because the head of the mound as it was advanced being its highest part, naturally covered the workmen. One of these mounds constructed by Julius Cæsar for the siege of Avaricum was 330 feet broad and 80 feet high. When the mound was completed up to the ditch, another process was commenced. A kind of frame of wood, mounted on wheels, and covered over with strong planks, was placed at the commencement of the mounds, in the besieger's lines, or several of them, according to the breadth of the mound, its front towards the enemy being also guarded by thick planks, and the whole affair further protected against fire by a covering of raw hides. Under the protection of this covering, workmen smoothed and levelled the top of the mound, while the garrison was kept in check by scattered archers and slingers. While the mound was in progress a huge wooden tower had been constructed by the artificers of the army. This tower moved on wheels, the motion being given to them by

* BABEL.—STORIES OF THE TOWER OF BABEL were prepared, I had only just glanced at the account of the pretended discovery of the ruins of BABEL. On a close examination I believe the whole story to be "faby."