

COMPETITION X.

All Comer's Match. Open to all comers. Any military rifle. Distance, 500 and 600 yards. Seven shots each distance. Position, any. Entrance fee, \$1. Twelve prizes, value \$425.

COMPETITION XI.

Press Match.—Open to any representatives from any newspaper or periodical, each to be required to be a bona fide employe thereof. Weapon, any military rifle. Distance, 500 yards. Position, any. Rounds, seven. Entrance fee, none. Ten prizes value \$147.

COMPETITION XII.

Consolation Match.—Open to all members of the National Rifle Association and competitors in the foregoing matches, but excluding all winners therein, or at previous matches of the association. Distance, 500 yards. Weapon, any military rifle. Position, any. Rounds, seven. Entrance fee, \$1. Ten prizes, value \$240.

COMPETITION XIII.

Bennett Long range Championship.—Open to all comers. Any rifle within the rules of the association. Distance, 800, 900, and 1,000 yards. Fifteen shots each distance. Position, any. Entrance fee \$2. Thirty four prizes, value \$1000.

HAT.

THE BRUNEL TARGET.

The following very interesting description of the target invented by Col. Brunel of this city, we copy from the *Free Press*, and which has given such general satisfaction at the Dominion Rifle Matches this year.—

The targets are a modification of those used at Wimbledon in 1874.

The objects aimed at are:—

1. Greater accuracy in marking and in indicating on the target the exact position of each shot.

2. Greater ease and comfort for the markers thereby insuring better attention to their duty, and affording less excuse for neglect or inattention.

A less expensive target both as to the target itself and the cost of its accessories and the placing it in position.

4. Greater speed in marking, especially in changing the targets from one class to another.

5. Better supervision of the markers.

Greater accuracy in marking is insured by giving the markers better facilities for doing their work. The target is brought down after every hit sufficiently low to enable the markers to examine every part of it, and assure himself of the exact position of the hit. Having done so, he hangs a disc in the last shot hole, pastes a patch over the previous one, and runs up the target ready for the next shot.

At first a signal disc was put up in addition to that hung on the target, but that is now being made of marking with no other signal than the latter, which is colored so as to express the value of the shot, as well as its position. The plan has this advantage, the disc hangs on the target while the next shot is being fired, and thus the register

keeper has ample time to satisfy himself as to what it is. The marking is also quicker, and can be done by one man as well as by two.

The greater comfort of the markers is secured by placing them in open trenches instead of in the closely covered and usually badly ventilated pits, heretofore in use. A tight roof is placed over the markers to shade them from the sun and protect them from bad weather, otherwise the trench is open, and instead of having to remain in a constrained position, looking upwards at the target, he can readily hear whether the ball strikes the canvas, and he then lowers the target, and ascertains its position. His safety from the splash of the lead is due to the construction of the target as will be explained presently.

The target is raised and lowered with great ease, very much in the same way as a window sash and with as little exertion.

The construction of the target and its accessories is as follows:—

The base is a square frame of wood constructed of two inch plank, and 4 x 4 in. scantling. This is placed at the bottom of the pit. At the mid length of the front side there are two uprights of 1/2 inch round iron, shouldered and screwed at both ends. The lower ends pass through a plate of iron 1/2 in. by 3 in. and through the two inch plank, and are firmly fastened by a nut and washer underneath.

These uprights are placed two feet apart and are nine feet high. At the top they are connected by a cross plate of iron 2 x 1/2 in. From the top of each a brace 1/2 round iron goes down to the opposite corners of the square frame where they are securely bolted, and the uprights are thus made quite firm and steady.

Upon each of these uprights there is a sliding bar two feet long. To these sliding bars there is bolted a block of hardwood three inches thick and two feet three inches square. This block carries the target, and both are somewhat overbalanced by an iron weight carried by a 1/2 chain passing over a pulley suspended to the cross strap that connects the upper ends of the uprights. The preponderance of the weight is just sufficient to keep the target up. An upright grade rod of 3/4 in. iron prevents the weight swinging about during its ascent or descent, and also gives additional firmness to the frame.

The target consists of a circle of band iron similar to that of a wheel, the side presented to the shot being reduced to a thin edge, so as either to split the bullet or cause it to glance off. The circle is carried by two upright straps of 3/4 in iron to which it is firmly riveted. They are bolted to the wooden block by two 1/2 in. screw bolts, readily rimmed, and as much of them as can be hit, have their front edges twisted so that either the bullet will be split or cut in two. By the removal of the bolts by which these straps are secured, one target is easily changed for another, the time necessary for the operation being not more than three minutes.

The circumference of the circles above described is pierced near the back edge of the iron by small holes about 1/2 of an inch in diameter, and two inches apart. Upon them there is stretched a disc of strong canvas which has eyelet holes in its edge, corresponding with the holes in the iron circles to which it is firmly laced, so as to be stretched quite tight. The lacing should not be continuous, as in that case, if the bullet happened to cut the lacing in one place, the whole would be loosened. In the

Rideau targets, there is a separate place for two holes.

Upon the canvas the stretched paper with the divisions of the targets printed on it, is pasted. This may be removed as often as is found necessary. The holes made by the bullet are covered as they are made by patches of black or white paper—as the case may be—pasted over them, and when required, the canvas itself is strengthened by having a heavy piece of factory cotton pasted over its whole surface on both sides. In this way, the canvas will stand a long time. Those on the Rideau targets promise to last beyond the present match.

The discs used for marking are of stout pine-board covered with paper of the proper color. A piece of cloth is pasted on the centre of them to which a wire hook is firmly secured.

The chief difference between the Wimbledon targets and that now in use at the Rideau range, consists in the greater simplicity of the latter. At the Wimbledon a dummy target formed of wire work was used, to which the signal disc was suspended. This dummy target went up as the target itself descended. Then another disc was hung in the shot hole, so that there was a double system of marking. Major Bland pointed out the inutility of this, but it was still persevered in. At the Rideau ranges there is no dummy target, nor does there appear to be any necessity for it. So far the marking on this target has been most satisfactory, not a single one being questioned. The markers are perfectly satisfied as to their safety from splashes of lead, and they greatly prefer their open trenches to the close pit. No sign can be discovered of any splash of lead having been thrown back from any part of the framework.

One of the advantages aimed at in the new target is the better supervision of the markers. The open trench can be constructed across the whole of the ranges, or when that is not possible, across as many as terminate at the same distance. A non-commissioned officer, or, if necessary, an officer, can then have charge of the whole squad, and see that they carry out their duties properly. A notable instance of the necessity of some such supervision was afforded yesterday by the discovery that a marker was asleep in one of the old butts. The whole squad had of course to fire over again, for, although there were the marks of the bullets in the target, it was impossible to say who had fired them.

The cost of the new system of targets is not yet ascertained, but they will not cost one fourth as much as the old ones. There is only a quarter of the iron in them, and there is no necessity for monthly plate glass covered pits, and other costly accessories heretofore necessary. There are some minor details which admit of improvement, and Col. Brunel has them under consideration. He also expects still further to reduce the cost. The principle is an admitted success.

The rocks named Pons Anapiasi by the Romans, and known in later days as the Iron Gates, which have for ages obstructed the stream of the Danube about the point where that river enters the Turkish dominions, are now about to be removed at the joint expense of the Turkish and Austrian Governments. The perfection to which the art of engineering has reached, combined with the immense power of modern explosives, has rendered that possible which defied the Romans, great as was their skill in mechanical operations. The cost is fixed at a low sum £360,00.