

difficult to estimate the effect of firing when the guns and targets are on the same level. It is probable that a good range could be found east of Toronto between Scarboro' and Whitby—say at Duffin's Creek. The shore line is tolerably high, and the range would be unimpeded. It is suggested that an officer be selected to inspect these localities and report. A day or two would be all that is required, and the locality, if found suitable and near a railway station, would seem to offer advantages as to economy and centralization.

The treasurer's statement showed that there was a balance of over \$500 at the close of the financial year. The reports were adopted.

The prizes gained at the last competitions were then presented to the representatives of the various batteries by his Honor the Lieutenant-Governor. The list was as follows:

Field Batteries—Aggregate scores; 1st, Ottawa Field Battery, 575, \$75; 2nd, First Guelph Battery, 561, \$50; 3rd, Welland, 536.

Individual scores—Gunners Cowan, Ottawa, 39, \$15; Knowles, No. 1 Guelph, 38, \$10; McMahon, Durham, 35, \$5; Gray, Ottawa, 35; Ingram, Ottawa, 35; Mereweather, No. 2 Guelph, 35.

Drivers—London, Clumfrith and Claypole; 1st Guelph, Foster and Riley; 2nd Guelph, Hawes and Anderson; Welland, Philips and Meyer; Toronto, Page and Spriggs; Durham, Bray and Patten; Gananoque, Timent and King; Ottawa, Gray and Johnstone.

Gzowski shifting prize—Durham, 1.55, 1st; Montreal, 2.01 1-5, 2nd; Ottawa, 2.08, 3rd.

His Honor, after presenting the prizes, expressed the gratification he gave him to do anything in his power, both in his official and individual capacities, which would promote the cause of so valuable an association to the country as the Ontario Artillery Association.

The council then met and discussed a number of subjects in connection with artillery practice and ranges. The recommendation to adopt a permanent range, such as Port Colborne, will be considered at the annual meeting of the association.

Revolvers.

C. F. Lowe in "The Rifle."

THE practice of revolver shooting has only received attention in Europe within the last few years. According to the information at the disposal of the writer the first public competition which took place was at the Tir at Versailles, near Paris, in 1879. It was not until July, 1885, that the first revolver competition was set on foot at Wimbledon, thanks to the persistent advocacy of a volunteer officer, Major Ford. The competition was confined to officers, but no enquiry was made whether any officer competitor had ever handled one of these dangerous weapons before putting in his appearance at Wimbledon at the single target, provided for his accomodation, at 20 yards' distance. The arrangements at Wimbledon, in 1885, were very crude and very inconclusive, and those in 1886 were very little better.

The National Rifle Association simply invited gun-makers to send military revolvers to Wimbledon, and the Enfield authorities, hoping to pick up a few wrinkles, sent a few Enfield revolvers and a supply of ammunition and an official to look after the business. No competitor was allowed to bring his own revolver. So dissatisfied were they with the arrangements at Wimbledon, in 1885, that in 1886 Messrs. Colt refused to enter their pistols for the competition, so the field was left clear for English revolver-makers.

Following the lead of the English National Rifle Association, the Commission Directrice of the Belgian Tir National set on foot a revolver competition at their prize meeting in August, 1885, open to all comers with any revolver, at 25 metres, and three target frames, each mounted on a small trolley, which ran on a rail and controlled by a windlass, were provided.

The experiment was a success. Some 7,600 shots were fired with the revolver without any accident; and in the official report for 1885 it is said: "The institution of a revolver competition has been generally considered to have been an excellent measure, for whatever doubts may have been entertained in the first instance have been entirely dispelled, and the success of the experiment has been so marked as to fully justify its repetition." Accordingly, in the winter of 1885, a revolver club was started at Brussels, under the presidency of Mons. Achille Valche, the indefatigable secretary of the Brussels Tir National, and they meet once a month (tell it not in Gath nor publish it on the streets of Boston) on *Sundays* for practice.

In 1886 the sphere of operations at Brussels was enlarged, the number of targets was increased from three to six, and the mechanism improved; some 1,400 tickets were sold, and some 8,500 shots fired without any accident; and the official report of 1886 says: "We remarked last year on the favorable reception with which the institution of a revolver competition met, and expressed our intention to repeat the

experiment. The progress made in a single year, in this new species of competition, is very remarkable, and will astonish those who will take the trouble to compare the results of 1885 with those of 1886. In 1885 the percentage of hits was 58 per cent., while in 1886 it rose to 81 per cent., and the scores were much higher. But, on the other hand, no change was made in the arrangements at Wimbledon, except to provide another target.

Several of the rifle clubs in England turned their attention to revolver-shooting, but with a limited degree of success, arising from the principal competition, that at Wimbledon, being confined to officers, so that if the redoubtable Mr. Ira Paine had appeared at the firing point at Wimbledon, although, as a matter of international courtesy, he might have been allowed to shoot, he could not have taken a prize, and the Wimbledon authorities actually found themselves in this disagreeable fix: A deputation of French riflemen came over to inspect the arrangements at Wimbledon, and fired at the revolver targets; but although they shot well, they were not eligible to take prizes because they were not officers in the British service. Mons. Valche, the secretary of the Belgian Rifle Association, the president withal, of the Brussels Revolver Club, was likewise at Wimbledon; but he was good enough not to place himself in a false position.

If the English military authorities have made a mess of the big guns, blundered about rifles, bayonets and swords, the worst muddle has been made about revolvers. While American cow-boys and others use Colt's frontier pistol with forty grains of powder, the full service charge for the English regulation pistol is only 18 grains, and yet, owing to the faulty balance of the English models, the recoil is nearly as severe in its results as with the heavier charges of the Colt's pistol; while, on the one hand, the balance of the Colt's frontier pistol, American model, is superior to that of the English model, the interior mechanism of the frontier pistol is capable of several improvements, even as a single-action revolver. But the internal part of the Colt's double-action pistol are very inferior to the newest models of English revolvers. According to the writer's information the American War Department are not satisfied with the efficiency of any self-extracting apparatus, on account of the liability to blow open, and the inherent weakness of the system as compared with the solid-framed Colt, and will only purchase revolvers of that description; but it is admitted that if a satisfactory mode of fastening a self-extracting revolver should be invented the solid-framed revolver would soon become a thing of the past, just as the muzzle-loader has been superseded by the breech-loader.

It is claimed that the problem has been solved by a new pattern-fastening invented and patented by Messrs. Webley, of Birmingham, very strong and simple. If the catch is home it is quite impossible for the revolver to blow open; if the catch should not be home, one of three things happens: (a) the fall of the hammer drives it home before the point of the striker can touch the cap; (b) the fall of the hammer drives the catch against the end of the limb in such way as partly to open the revolver, and puts the base of the cartridge out of reach of the striker; (c) the catch itself receives the blow of the hammer, and stops it before the striker can reach the cap,—so the general result is, that it is impossible to fire a cartridge unless the revolver is safe.

One of the great faults of revolvers is that they are sighted in such a manner as to throw the bullet over the object aimed at, so that at 20 yards it may be necessary to aim nine inches or a foot low, and generally the tendency is to throw to the left. The trigger of the Colt revolver is too narrow; it should be much broader, and should be slightly roughed, to give a better grip to the forefinger, which often gets greasy from the lubrication of the pistol or the ammunition.

It is an open question whether the buckhorn backsight and a square tipped foresight, like that of the Springfield, are not superior to the angular notch and foresight of the Colt revolver.

English revolvers have a lump, which is called the prawl, which comes between the thumb and forefinger of the right hand; it is put there with the object of preventing the shooter from holding the revolver too high up. The result sometimes is that the muzzle rises in the air, and this prawl is driven against the hand, and the shooter is wounded; and two or three instances of this have occurred within the writer's knowledge. There are or were in Her Majesty's service three distinct types of ammunition, as follows:

Mark.	Powder.	Lead.	Calibre.		Remarks.
			Bullet.	Barrel.	
I.	13 grains.	225	.450	.450	
II.	18 grains.	265	.455	.450	.005 difference.
III.	18 grains.	265	.476	.450	.026 difference.