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# The Volunteer Review

## AND MILITARY AND NAVAL GAZETTE.

A Journal Devoted to the Interests of the Military and Naval Forces of the Dominion of Canada

VOL. VI.

OTTAWA, (CANADA,) MONDAY, OCTOBER 14, 1872.

No. 42

### NEWS OF THE WEEK.

English advices state that a further rise in the price of coal has taken place, that the Belgian coal masters cannot supply their contracts, owing to want of labor, and a threatened strike.

A disastrous explosion has occurred in a coal mine at Morley, by which *forty* lives were lost. Another mine has been accidentally flooded at Wrexham, by which it is rendered useless for the present.

A firm in Birmingham has contracted with the Prussian Government to supply 150,000 rifles of an improved pattern. That don't look like peace.

Eighteen coal masters are about closing their works, pending a reduction of wages.

The London newspapers mention that in the course of a month or two, there will be placed a line of very large and powerful steam tugs at both entrances of the Straits of Magellan, for the purpose of towing sailing vessels bound to and from the west coast of South America through the Straits, thus doing away with the difficult and oftentimes dangerous voyage round Cape Horn. It is believed that the services of this new steam tug company, will meet with the patronage that the venture deserves, and that, in future, the disasters to the vessels making the passage round the Horn will be few and far between, as the cost of towing a vessel through the straits, will, it is estimated, be not more than £200 to £250.

The price of finished iron has been reduced two pounds sterling per ton.

Gambetta's speeches at Grenoble and other cities has gained him much influence, and it is probable that he will be put forward as a candidate for the Presidency of the French Republic.

It is reported that President Thiers intends, at the next session of the Assembly, to urge Conservative deputies to support a proposition for the definite establishment, by proclamation, of a permanent Republic based on strictly Conservative principles. It is said that Casimir Perier is now using his influence with the Right Centre of the Assembly to bring it to accept the President's views.

There has recently been laid before the French Geological Society a project for cutting a canal across the Isthmus of Panama. The plan originated with a French engineer M. Levy, who has lately been occupied on the survey of the Nicaragua canal. Fourteen routes have been proposed through New Granada, but none actually decided upon. Mr. Levy favors an inter oceanic canal, beginning at the Atlantic side at the mouth of the San Juan river, which takes its rise in Lake Nicaragua. It is asserted that the river and lake can be used as a canal at a trifling outlay, while the distance from the western part of the lake to the Pacific is a few miles only. Such a canal if properly constructed, would revolutionize the commerce of the Pacific, and raise its termini from paltry villages to great commercial cities.

The *Escorial* at Madrid, the palace of the Spanish kings, built by Philip II of Armada memory in the form of a gridiron, on which its patron St. Lawrence was roasted (pleasant people in his days.) has been on fire, as far as architectural beauty is concerned, the loss would not be great if it had been subjected to the actual scorching of its traditional prototypes. But as it has a valuable library, and some of the most interesting records of European nationalities, its loss in a literary point of view, would be irreparable. Luckily the fire was extinguished after doing some small amount of damage.

MADRID, Oct. 4.—Information reached Madrid at a late hour last night, that the fire in the *Escorial* had been extinguished. Two of the towers and a portion of the roofing have been destroyed. The amount of damage is estimated at three millions of reals. All the sacred objects which it was thought would perish in the conflagration are reported safe.

Spaniards do not seem to be the most orderly or obedient subjects to reign over,

Last evening while his Majesty King Amadeus was walking in the Plaza del Orient, two men who were concealed behind the statues, throw several large stones at him, crying out at the same time, "Vivo

lo Republica." The desperadoes took flight immediately after committing the act. They were pursued by a number of policemen, but succeeded in making their escape. The King was not hurt. The occurrence causes great excitement in Madrid."

In the Cortes, the President decided that under the rules of the House a debate on the motion to amend the address to the King, by inserting a paragraph, asking for the abolition of slavery was out of order.

After the shop keepers manifestation yesterday, which temporarily subsided on the promise of the Alcalde that the tax on show bills would be reconsidered, crowds again collected on the streets, hissed the members of the City Government, who were trying to allay the excitement, and assailed the police with clubs and stones. The civil force being unable to suppress the disorder, and the rioters becoming more violent, a battalion of National Guards was called and cleared the streets. Several persons were injured but none were killed. Order was restored and the city to day has been quiet.

The Congress by a vote of 161 against 57, has refused to consider the amendment offered by a Republican member to address the King asking for the emancipation of the slaves.

A general strike of working men is expected in Belgium, the *Internationals* having succeeded in stirring up the phlegmatic Flemings.

A telegraphic despatch from India states that a Russian force is marching on Khiva, the next step will bring them into collision with our subjects, allies or dependents in India. Will Mr. Gladstone's friend John Bright & Co. attempt to settle the little difference by arbitration, or send a peace mission to St Petersburg, as they did in 1854?

A cheque for £100, from Mr. Thomas Brassy, England, has been received by Mr. Gzowski, with the object of doubling the Brassey prize in the Canadian Rifle Association prizes.

The celebrated W. H. Seward late United States Secretary of State, died at Auburn New York, on the 19th inst.

## THE AUTUMN MANŒUVRES.

## THE SCENE OF OPERATIONS.

(From the Broad Arrow, August 21.)

The scene of the approaching manoeuvres and the probable incidents of strategy suggested by its special features, formed the subject of the following remarks in the *Observer* last Sunday:—

"In one sense Salisbury Plain is well known, for every English speaking man has heard of the wonderful prehistoric monument of the Stonehenge, and carries by association in his mind a general idea of the character of the surrounding country; while those who take an interest in the progress of army reform, and still bear in mind the special reports and discussions last year on the choice for the site for the autumn manoeuvres, to which the preference was given by many to the plain over the wastes of Surrey and Hants, will not be surprised that it has been selected for the work of the present autumn. A noble expanse of open downs, with very little cultivation and no enclosures worthy of the name, seem to indicate Salisbury Plain as the natural scene for one large body of troops to manoeuvre against another; but it lacks one element—but for that the *terrain* would be perfection as a *Champs de Mars*. The absence of any vegetation but the short sweet grass on which vast flocks of an excellent breed of sheep are fed is an indication to those who begin to reflect that the country before them is waterless. The French are beginning to investigate a subject, which they call subterranean hydrology, or the science of discovering streams or reservoirs of water beneath the surface of the soil, if their researches lead to any definite result, and they can indicate the existence of any large quantity of this hidden treasure beneath Salisbury Plain, this year will not be the last time that British generals will demonstrate their strategical and tactical ability on ground otherwise so suitable. Lack of water was the great point urged against the selection of this site last year, and at one time there was every prospect that the idea of utilizing Salisbury Plain for our peace manoeuvres would have to be abandoned altogether. Fortunately careful inspection and investigation of the hydraulic capacity of the district, made within the last few months has turned the scale in favor of giving it a trial; but there seems no doubt that with all the care and scientific skill which will be brought to bear, the meagre water supply in the district must seriously hamper the commanding generals in their movements, if it does not make the possible strategy on either side almost a foregone conclusion. This difficulty is the more to be regretted, as, setting aside want of water, the site is eminently suited for its general fitness for this annual culmination of army drill and training, which the good sense of the country has decided shall be annual. With perfect freedom of movement the fault would be in the generals if the manoeuvres were not made valuable instructively, both as regard strategy and tactics. Last year many who thought themselves qualified to infer the strategic object of any military manoeuvre sometimes got fogged even with the "general ideas" in their hands. The fault, however, was not so much with the strategists of the campaign as with the difficult character of the ground which must of necessity influence peace manoeuvres in a much greater degree than it would the operations of real war. As regards Salisbury Plain, however, the general character, of

the strategic problem is so patent that he who runs may read. The possession of the fine old cathedral city would be an object of prime importance to an invader landing anywhere to the south and west of it, for until it was in his hands he could not safely march to invest Portsmouth, much less make any progress towards his grand objective, the possession of the capital. A glance at the railway system of the south and west of England shows that Salisbury is a most important strategic junction station, for at this point the South Western line, one of the two, and the most direct means of communication between Plymouth, Exeter and London, is crossed by the principal line connecting Bristol, Gloucester, and South Wales with Portsmouth and the whole of the South Wales coast. Salisbury, therefore, is the key of the communication between the south and west, and under our new localization scheme, its possession by an invader would practically isolate the forces of those two districts. Once in possession of the city, his flank would be safe for an advance on London, and the course would be smoothed for further local operations of a most important kind. No time would he then lose in swooping at Bristol, and if his stroke was successful, this new base and the large supplies he would acquire would make dealing with the whole of the west of England a matter of ease. His first object therefore, after a successful landing in the south would be to detach a force to obtain the possession of Salisbury; and as we should certainly do our best in the same direction to defeat his object, a number of probable strategic problems are at once suggested which make thoroughly tracing out the strategic capabilities of the district a by no means unprofitable expenditure of military energy. The area of ground marked out under the Military Manœuvres Act of the present year sounds ample in the extreme for the forces that are to be pitted against each other. Speaking roughly it may be said to be forty miles in length from north to south, and twenty in width; but a considerable deduction must be made from this on account of the southern portion being much enclosed, and altogether unsuited for anything but the mustering one part of the force and comfortably encamping them as they perform a couple of marches to bring them within the fighting area. This may be defined as lying principally north of Salisbury. With Stonehenge as a centre, a radius of ten miles would take in all that is usefully available to the north of this famous monument of Britain's early antiquity though the sweep of the compasses would have to be extended nearly half as much again to include all the good strategic ground on the south and west. The whole of Salisbury Plain proper is included within these defining limits, and though much open ground exists in the south, and notably in the direction of the New Forest, it is too much cut up by the land under cultivation to be fought over without making the damages under the Autumn Manœuvres Act rather heavier than the country would care to pay. Several good and sufficient reasons exist why we may anticipate that the great battles of the campaign will take place north of the great chalk ridge which runs nearly east and west from Salisbury on the one side and Shaftsbury on the other. In the first place either general will be likely to edge away from the boundaries, unless some entrenched camp is prepared, like that of Chobham last year, in which, though close to the defining line, he can take shelter from impending defeat, with the certainty that the umpires

would rule that his position was unassailable. Otherwise the loss of a battle might force him into neutral ground, and the campaign would be prematurely brought to a close by a catastrophe similar to that which befell Bourbaki's army on the borders of Switzerland. The main military reason, however, is the situation of the streams at this district, which will be seen to be five in number and to converge, running through the centre of so many valleys towards Salisbury. Only two of these however, the Avon and the Wiley, are of much importance, though the others, if mere brooks, are not without value, seeing that the rising ground defining their basins affords a successive series of defensive positions which it would cost an enemy dear to force. All finally merge into the Avon at Salisbury, which thus becomes naturally and topographically, the objective of the operations of an invader, whether made from the south, west or north. The present position of the Blandford army, which, of course, is to play the *role* of the invader, suggests an attack from the south. Then the long chalk ridge to which reference has just been made, which forms a sort of hog's back, eleven or twelve miles long, and goes under different names at different parts of its length, would become the bulwark of the defence. All along its positions are to be found against which an enemy would require plenty of pluck and great numerical superiority if he anticipated success from a front attack. But while all are good, there is a position *par excellence* above Bishopstone and Combe Bisset, where an enemy would have to pass the Long Brook to close with the defenders under such a fire that he would have good cause to rue the day, whatever might be the result. But if he succeeded, the city would fall into his hands. The defenders once driven from his post of vantage, would not have time to wheel and fall back on Salisbury. Their strategical flank would be sure to receive the attention of the enemy, and that being defeated or turned, there would be nothing for it but to fall back across the Nodder, probably under fire, and with heavy loss, and take refuge somewhere on Salisbury Plain, and pull themselves together as soon as possible, so as to threaten the enemy's flank, on his attempting an advance from his newly acquired position, either on London or on Bristol, or on Exeter, if he determined to make all safe in his rear before attempting to attain the great object at which an invader would always aim—the speedy possession of the capital. So favourable is the ground, that, assuming what would be the most likely thing in the world, namely that an enemy who had landed in the south had sent a detached force to Salisbury, and that we had sent an equal force to try and prevent him, half a dozen strategical schemes may be worked out, none of which would violate probability. Such a one as we have suggested might be carried out, and the defenders might then fall back into the valley of the Wiley, defending the successive positions which occur as they retreated on Warminster, until, on the supposition that they had been reinforced by the *corps d'armes*, which, under the new organization, the west of England would supply, they were in turn able to take the offensive, and drive the invading enemy back on Salisbury."

## THE SOUTHERN ARMY.

On Saturday Mr. Cardwell, accompanied by Sir Henry Storks, and Mr. Glyn, M. P., at whose house close by they were staying, paid a visit to the southern army encamped on Salisbury Plain. They went first to the headquarters camp at Franco Farm, where

they were received by Sir J. Michel, the general in command, and his staff. After inspecting the arrangements of the control Department at headquarters, they were taken to the cavalry camp at Franco Down and Camp Hill, where, a correspondent says, they must have been struck by the fine appearance of the Dragoon, Lancer, and Hussar regiments in their respective camps. They rode over to the Race Down camp where the whole of the infantry are quartered. All but two battalions of the Regulars and Militia had arrived, and the form and dimensions of the camp were clearly seen. Mr. Cardwell appeared to be much pleased with the appearance of the troops, and especially of the Militia regiments from West York and the County Down, both of which have their ranks filled with very fine men. Sir Henry Storks was particular in his inquiries at the control depots, which are so admirably organised that everything promises to work well during the campaign. The party dined that evening with General Sir J. Michel at the head quarters staff.

The scene for miles around Blandford was one to be long remembered for its animation and interest. Far as the eye could reach the turf was covered with countless clusters of bell tents, while here and there, in neat rows, were picketed the horses of the cavalry and artillery. The weather was all that could be desired, and as a correspondent wrote, he must indeed have an unpoetical soul, or be suffering severely from a fit of dyspepsia, who could fail to be struck by the beauty of the scene. The water difficulty, of which we heard so much some months ago, has by the efforts of the Royal Engineers been successfully overcome. The artillery on Buzbury Rings have about a mile to go to water, but the troops who are quartered on the other side of the valley are somewhat better off in this respect. Tanks and pumps have been erected at various places, by which a good supply of water can readily be obtained. The condition and spirits of the force are all that could be desired. We hear of very few hospital cases, and these are principally from slight accidents, such as are inseparable from a march of large quantities of men and horses. Strict orders have been issued with regard to the sanctity of private property; more especially as regards troops trespassing in and damaging woods and plantations. There are several covert in the neighborhood of the camp which are very strictly preserved, and the outskirts of these are carefully patrolled day and night by pickets, and by the civil and military police. Pickets are also placed on all the roads leading into Blandford, to prevent any soldiers unprovided with a pass from entering the town. The Crown Hotel—the principal hostelry of Blandford—must be doing a thriving business, for it has been the head quarters for some time past of various officials connected with the army, and the stable yard is constantly thronged with staff officers, orderlies, contractors, constables, and others who have business either with the Control Department or with some general or brigadier. The auxiliary transport train from Woolwich is already doing good service, and the horses belonging to the regiments in camp are being utilised in every possible way, so as to lighten as much as possible, the stress put upon the Control. So far the Supply Department appears to have given satisfaction. The rations are sufficient and of good quality and the forage is not stinted, though a larger proportion of corn has to make up for a smaller quantity of hay than the horses are accustomed to in their own stables. Some militia regiments—including one from Ar-

gylshire and another from County Down—are encamped on the race course with the infantry regiments of the Line. The Guards and the 4th battalion of the Rifle Brigade, are close together, and near them are the 2nd Battalion 17th Regiment, the 23rd and 7th Fusiliers, and the 50th and 95th regiments. In the evening bands play, and attract a certain number of spectators, but these latter are principally composed of the inhabitants of the neighboring villages, and of such visitors as take advantage of the numerous omnibuses, frys, and vehicles of all sorts which run "to and fro" between Blandford and the camp.

The correspondent of the *Daily News* wrote on Sunday:—"The southern army is now complete with the exception of the contingent of Volunteers, who does not join before the end of the month. While as yet the mobilization was in progress, very little work in the way of drill was attempted, the regiments as they successively came into camp being allowed to shake themselves in to what to so many was a novel kind of life, without being called upon to turn out in battle array, and be marched and counter-marched on Blandford race course. There have been, of course the usual daily parades and the various regiments have been inspected by the generals commanding brigades. The cavalry have not been quite so idle as the infantry. The three most recently arrived regiments, the Carbineers, the Bays, and the 7th Hussars, have not as yet tested the elasticity of the turf of the Race Down, but on Friday the 3rd Dragoon Guards, the 10th Hussars, and the 12th Lancers were out practising evolutions in the open, and one of the regiments engaged in a little *vidette* duty round the infantry camp. The four Militia regiments which swell the strength of this force are the objects of universal admiration, and men of the regulars, who hastily judged of the Militia by the specimen seen in last year's manœuvres, have already seen cause to alter their opinion. Of the 1st West York I have already spoken. The Royal South Downs—which hail from the north of Ireland, and are not to be supposed to be denizens of the chalk hills where the sheep of the same name have their origin—are very fine fellows, for the most part tall, fairly broad-shouldered, measuring well round the chest and by no means badly set up. Considering that five years elapsed during which the annual training of the Irish regiment was suspended, and that it was only last year that they were resumed, the condition both of the County Downs and of the Kilkenny men in the matters of drill and discipline is very creditable. Comparatively few of the men in either can date the period of their enlistment prior to the commencement of the five years of suspension, and therefore the present state of the regiments may be said to be the result of a single annual training period. It remains to be seen how they will be found in brigade work, and they will probably require very considerate handling in the early days; but they look like men determined to improve and to do themselves credit; and there is much to be done in the way of acquiring steadiness and composure, and a general knowledge of field work, in the course of the ten days which have yet to pass before the march forward for the actual manœuvres. Everywhere throughout the army, work begins in earnest to-morrow (Monday). The two divisions are to strike their camps on the Race Down, and march away separately, in different directions, carrying with them all their impediments, as if they were about to take the field. Arrived at a convenient spot—

one will probably resort to Launceston Down, the other in the Critchill direction, camps will be pitched, and dinners cooked, the divisions then striking tents, marching back to the Race Down, and repitching their camps on the ground they now occupy. If not to-morrow, on the following day, there will be a divisional sham fight, and throughout the week there will certainly be no time for indulgence in the *dolce far niente*, which the hot dry weather now set in would make so pleasant. Yesterday the camps were visited by Mr. Cardwell and Sir Henry Storks, and among the gentlemen of the several staffs there raged excitement not wholly unaccompanied by "funk." Gallopers careered about, announcing with wildness of gesture and tremulous voice that "Mr. Cardwell is coming," apparently anticipating that the volume of meaning contained in these four words was copious enough to render unnecessary any detailed instructions, under the circumstances. No artillery salute, awakening the unaccustomed echoes of Pimper and Bryanstone, greeted the advent of the War Minister. As he passed through the camp irreverent soldiers remained recumbent on the grass adjacent to his track, and the blood of the men with a proper sense of the fitness of things ran cold, when a Fusilier, prone on his stomach, with his heels in the air, was heard to ask of his comrade, "Who the devil that ould bloke" was? It was edifying to watch the manner of reception in different cases of the tidings of Mr. Cardwell's approach. A gallant colonel stood by his tent door as an aide dashed up with the intelligence. "Are you the bearer of any order for me?" asked the colonel with a composure which threw the galloper into a paroxysm of blank astonishment. "No" was the reply. "Then what do you bring?" "Why?" repeated the aide, "I'm coming to tell you that Mr. Cardwell's coming." "I have not the honor to know that gentleman," replied the colonel, "but I don't know any reason why he or any body else shouldn't come when they like. I take my orders from General So and So, and if you bring me any communication from him, I shall be glad to have it attended to. Good morning." In another regimental camp the tidings were not received with quite so much equanimity, and a neat handed piece of *legerdemain* was accomplished with wonderful celerity, the effect of which was to produce that appearance of austere absence of luxury which is *en règle* in field service.

(To be continued.)

CUTTING WOOD WITHOUT A SAW.—A curious invention has just been patented through the Scientific American Patent Agency by George Robinson, M. D. A galvanic current in sufficient quantity, when passed over fine platinum wires raises its temperature to white heat. The most important application of the principle consists in the employment of heated wire in surgical operations as a substitute for a knife. It was found that the red hot wire cuts or burns its way through the flesh. The inventor discovered that wood, a comparatively dry substance even when green, could be cut in the same way. By arranging the wire with handles or other means, so as to guide it readily, trees, logs or planks may be cut as desired. There is here, therefore, a simple and easily applied force, which may be employed to fell trees, divide them into logs, and perform all the operations of the saw and axe. The surface of the wood is slightly charred, but the black layer is very thin. The battery employed need only be of the simplest character.

## THE GLATTON.

From the *Engineer* of July 12 we condense the account of the experiments with the *Glatton* which follows:

The turret, then, was to be tested by three blows—(1) It was to be near the top, where the shot would act with a certain amount of leverage, and, if it were possible to do so, contort the base and prevent free movement; (2) a blow was to be struck lower down, nearer the middle of the turret; (3) the junction of the turret with the "glacis" plate was to be fired at, in order to learn the probability of motion being prevented by actual distortion or wedging of the shot between the moving and fixed parts, namely, the turret and glacis plate. For this purpose it was supposed that a quantity of ballast carried in the *Glatton* might have to be placed so as to give her sufficient "list" to expose the part in question to the full blow of the *Hotspur's* gun.

Against the strongest portion of the turret, 14 inches of iron backed by 15 inches of wood, the 12in gun of 25 tons weight, was brought to bear at a range of 200 yards, firing "Palliser large-cored shot," or, speaking loosely, "Palliser shell without bursting charges."

At 200 yards we have shown the shot as just able to perforate this thickness of armor but it must be remembered that the circular form of the turret tends to give a slight increase of strength, especially in the case of shot not striking it exactly in a radiating or normal direction. The 12in., of all the Woolwich guns, fires its projectiles most unsteadily, from its having so slow a twist. All things considered, then, it was hardly to be expected that the projectile would go right through the turret, but it was likely that it would do so.

In order to insure the turret being struck on the desired spot in each case, the firing of the *Hotspur's* gun was tested against a canvas screen erected on the deck of the *Glatton*. Those who witnessed the experiment may perhaps call to mind the evidence to their senses of slow twist and slight unsteadiness shown by the shot passing over the breakwater and ricocheting out to sea.

A high velocity of rotation tends to make the shot ricochet to one side, a right-hand spin to the right, a left-hand spin to the left. The shots in question after graze continued their path in a more direct line than might be expected, and the steam-engine-like noise was then heard which indicates unsteady flight.

For the first round a mark was made at a spot near the turret top. The gun was to be laid to strike a spot just beneath this but (owing, it was thought by some officers, to the firing being delayed and the gun getting cold) the shot passed close over the turret top cutting through the rail-post and causing the rending and contortion. On giving rather less elevation the next shot struck some two feet below the mark at which it was directed. The shot stood well up to its work, the front portion, as far as the front ring of studs, remaining apparently intact and buried deep in the turret side.

We have presumed to show in the place occupied by the shot's head and the depth to which the point has penetrated; we believe this cannot be far wrong on the following ground. The rear edge of the front stud was about 6in. past the face of the plate, and the projectile, if a Palliser 12in. shell, would measure from this to the point nearly 14in. As it appears, however,

that it was not the service Palliser shell of 1870, but a pattern known as large cored shot, not then sealed and proved, this measurement may be slightly incorrect. Still, it hardly seems probable that the actual position of the projectile when taken out can be found to differ from what is given in the figure by so much as half an inch.

Supposing our estimate to be correct, the following are the effects produced, shown by the numbring and arrows in:—(1) The entire upper plate forced back to a distance at point of junction with lower plate 5in.; (2) shots penetrated to a depth of nearly 20in.; (3) horizontal joint between upper and lower plate opened to a width of 2in., the same effect being manifest in the corner of the top plate being lifted 2in. higher than that of the adjacent plate; (4) the lower plate cracked in a vertical and laminating direction, if such a word may be allowed, and otherwise contorted at the edge; (5) a bolt driven some inches backwards, the head flying into the interior of the turret; (6) the double skin being bent back and forced open to a width of about 3in, the wood protruding; (7) the 4in. or inner skin torn open and hanging down to the extent of about 4ft. by 15in., a number of revent-hands (as well as the bolt-heads) being thrown into the interior of the turret.

Although a little below the spot intended, it was quite clear that this round gave a heavy contorting blow to the turret, the top of which had been so far forced back, it was nevertheless, found that the turret revolved without the slightest difficulty, and for the object of the experiment the next round might be proceeded with.

Considering the spot struck by the first blow, it seemed advisable to pass on at once to the trial of a blow at the line of junction between turret and glacis plate, which perhaps might be struck without the delay necessary for altering the ballast, in order to give the vessel a "list" towards the *Hotspur*. This was done. By means of a mark painted on the turret, a shot was delivered grazing the glacis plate at a point 3ft. from the turret and glancing into the turret, which it penetrated to a depth of about 15in., the shot, as before, standing well up to its work and coming easily out of the hole, uninjured as far as the front row of studs.

The effects produced by this round are—(1) Penetration about 15in.; (2) glacis plate grooved to a depth of about 4in., and cracked; (3) flange ring covering joint of turret and glacis, cut through and bent; (4) lower side of glacis plate bent back, and split open to a width of about 3in.; (5) a sort of binding plate fixed on the lower edge of the armour-side beneath the deck, broken off for a length of some feet, and the edge bulged downwards.

This round again severely tested the working of the turret, not perhaps quite so severely as might be conceived were a similar blow to fall in a more downward direction, but quite the kind of blow intended. On trial the turret was again found to work freely and easily. The ports, which up to this time had been covered and plugged up with beams of wood, were cleared, opened, and two rounds were fired from each gun; one a full blank charge of 70 lb. of pebble powder, and one a battering charge of 85 lb. of pebble powder with shot. The turret revolved easily in about a minute, and we are not aware that any effort was used to obtain speed. In short, the *Glatton* was in good fighting trim at the conclusion of the experiment. Considering how great are the chances against the second shot falling exactly on a spot already struck, it would

hardly be going too far to say that the *Glatton* was in nearly as good condition to go into action as before the trial. Yet, it would be difficult to put her through a more severe ordeal except by bringing the 35 ton gun to bear on her, and as far as the object of the experiment, namely, injured to the working of the turret, it may be doubted whether much more effect would, even then, have been produced. A plunging fire we are inclined to believe the most likely to jam the turret. Suppose, for example, that the ship has much list over towards the *Glatton*, there can be little doubt the second shot would have caused much greater damage to the glacis plate, which at the thickest end (that is, next the turret), is only 3in. thick. As it was, this plate received a more severe blow than was at first apparent. Suppose the shot, instead of merely opening it through along one crack, had broken it into fragments, it is easy to conceive that detached portions either of shot or plate might have temporarily jammed up the space between turret side and glacis plate edge, a space we should say, from observation, of perhaps 6in. Still, even in this case, it seems likely that such jamming fragments might be removed; and, as this might be done from below, by men and under cover, it is improbable that any breaking of glacis plate, or any wedging of shot, could cause more than temporary interruption to the action of the turret. In the plunging fire we have assumed a rather extreme case: such a vessel as the *Glatton* would never be called upon to fight in a sea which would expose her to a plunging fire from a hostile ship, nor is it to be expected that she would be very likely to come under the plunging fire of works of great command. At all events in supposing such a case, we must remember that we have only to go to such an extreme as may be found in Gibraltar batteries; to come to a fire indeed that no conceivable form of armor-plated ships capable of floating could resist.

We suppose the case of the 35 ton gun firing at the *Glatton* turret. Let us see what might be expected to happen. It is probable that the turret would be penetrated at any range up to at all events 1,000 yards, if struck fair. The men and guns in the interior might no doubt suffer, but no more shock would fall on the turret structure than in the present instance. The experiment was not made with a view to penetration. In selecting the 14 in. plates to fire at rather than the 12 in., the trial of the turret in its working powers was probably the most severe that could be given to it by any shot of 12-in. diameter. It will be seen that the shot which first struck the turret very nearly penetrated. The point of the shot we have estimated as being at a depth of nearly 20in., having in front of it only 8in. of oak, and a skin which it had opened already to the extent of 3in. When it is remembered how little more would have been required to take the projectile through and, that once through it ceases to strain the structure of the turret, it will be seen that a 12 inch shot could much more severely try a turret with this thickness of plate—the same we believe in total amount in the 14in. plate as that of the *Devastation* and *Thunderer*.

We are tempted to speculate as to what would have been the effect of the slow, heavy blow of the Radman shot, but it may be profitable to conclude by summing up a few minor facts connected with the experiment.

First, as to moral effect. The officer and men, (about thirty in number) who remained on board the *Glatton* during the firing, occupied the captain's cabin where the shock

of impact was very little felt; how little may be seen from the following fact. After the experience of one miss the crew returned to the cabin for the second round. This time the turret was severely struck; but the men came out thinking it was another miss. The apparent comfort of the kid, hen, and rabbit in the turret point the same conclusion, viz., that the work stored up in a shot is delivered on armor with no more shock to surrounding objects than the work—equal in quantity, which the same powder charge expends on the firing vessel.

Secondly, as to the penetration obtained by the projectiles, we noticed that the 35 ton gun at Shooburness rather exceeded what we should have supposed. On this occasion the reverse was the case. The 25-ton gun was fired exactly as given on the second line—that is, with a firing charge of 85 lb., and probably with a velocity of 1,300 ft per second. The line for the thick armor of the *Glutton* was pierced even a little past this range. We have noticed, however that the shot did not strike perfectly fair, which with a circular form of the wall of a turret, makes more difference than in the case of a flat target. Further the projectiles were not those of the most recent construction, and being of the date 1870, where any manufacture is constantly watched and improved, a year and a half may make a sensible difference in the excellence of the product.

#### A VIKING'S VESSEL.

We learn from several reports in the Sagas that during the last centuries of Paganism (the younger Iron Age or the Viking-period, the period from about 700 till a little after 1000 A. D.), the dead on being laid to rest in the sepulchral tumulus were not infrequently put in a ship.

In this way according to the account of Snorre, Haakon the Good, having conquered the sons of Gunhild at Restarkalv, ordered the conquered ships to be drawn up on shore; the slain were laid in them, and earth and stones were then heaped on the top, or in other words, tumuli were raised over them. Even women were sometimes interred in this manner. Now and then tumuli have been found in Norway and Sweden, which also contained ships, and thus confirmed the accounts of the Sagas, concerning that peculiar mode of interment. But in all cases, which have hitherto come under notice, the ships, as might easily be expected, were so much injured after having laid so long in the earth, that only few traces of them remained.

A Norwegian tumulus has, however, lately disclosed a vessel from the younger iron period, which has, to a considerable extent, resisted the decay of time. The discovery was made in the parish which has preserved the most remarkable, and probably the oldest, of Norwegian Runic stones, viz, the Parish of Tune in the Amt of Smaalenene. It had been a report in that district, that a ship was buried in this mound—probably some one had come upon it during a former excavation—which, as we know, was made in the first half of last century. Trusting to this report, the present owner of the farm, Ole Arolsen, some years ago, began a search for the ship. After several fruitless attempts, he at last found one end of it by entering the mound on the northern side. By continued excavation he had gradually uncovered a large part of its inner sides, when last September, an officer of the Norwegian navy, Lieutenant H. Basse, accidentally

came to the knowledge of the discovery. He persuaded the proprietor to stop the excavation and reported the discovery to the Society for the Preservation of Norwegian Antiquities. The Society then ordered the excavation to be finished under skillful supervision.

The vessel stood in the mound on a level with the surrounding surface of the earth, in the direction of N. N. W., and S. S. E., a little lower in the southern than in the northern end. It is clinker built, with iron nails, and made almost exclusively of oak; only the ribs and the wooden nails, which are found at some places, are made of fir. The keel, which is made of a single piece of wood, and quite undamaged, is 43 1-3 feet in length, and more than 13 feet wide amidships. The perpendicular height from the keel to the gunwale cannot have exceeded four feet. As will be seen from these measurements, the vessel has been very flat and low. Both ends are almost alike, and both very pointed, so that one can be in no doubt which is fore and which aft. There was no deck, and no trace of thwart to be seen; in consequence the number of oars cannot be known. To judge from the number of the ribs it may, however, be concluded that there have been ten on each side. This vessel however has not been propelled by means of oars alone; it has also had sails, and the way in which the mast was secured is one of the most peculiar points about it. In the space just behind the mast beam lay some unburnt bones of a man and horse, two beads of colored glass, some cloth compactly rolled together, and four small pieces of carved wood, which appear to be fragments of a saddle. Near the prow, at the eastern gunwale of the vessel, the handle of a sword, of the form used in the Viking period, was clearly distinguished; nearly opposite, on the western side, the point of a spear and the boss of a shield seem to have laid. Just where the prow must have been, laid a long, heavy lump of iron rust, apparently a fragment of a rolled up coat of mail. On the western side of the gunwale about opposite the mast there was a heap of horse-bones. The beads and the pieces of cloth indicate that the body was buried with clothes on. By his side a horse and saddle, harness and snow skates were laid. Thus he had ship, saddle, horse and snow-skates with him in the sepulchral tumulus.

We have then here considerable fragments of a vessel undoubtedly belonging to the Viking period. It can hardly be supposed that this is one of the ships on which the Norwegians of that period make their bold Viking expeditions in the Baltic, the North Sea, and the Atlantic. A vessel so small in size, and built so low and flat could not be adapted to long voyages in the open sea; it can only have been used for coasting trade and shorter expeditions. The discovery however is of great value. It is the only vessel extant from the Viking period, and as far as is known, the most ancient which has been preserved, with the exception of one in Denmark.

The Society for the Preservation of Norwegian Antiquities has had the vessel and the other articles found in and about it brought into Christiania, and has presented the whole to the collection of Norwegian antiquities belonging to the University.

The *Boston Daily Globe*, who is likely to be well informed on the subject, has a leading article "The Indians Again!" It must be of interest to all who have friends and relatives in the "Far West," therefore we copy it:

Private letters reach us from the extreme West, which corroborate the brief despatches by the telegraph; saying that a reign of terror exists among the whites upon the frontier. Hostile tribes make no concealment of their purpose of exterminating the white settlers in Dakota, Montana and the surrounding region. Peace counsels are no longer heeded; the United States commissioners acknowledge themselves powerless, and the last argument has been employed in vain by the advocates of the Quaker policy. Cavalry and infantry are loudly called for, and army officers telegraph that the entire length of the Yellow stone valley swarms with armed Indians in fighting organization. The number is placed by the official agents of the government as high as fifteen or eighteen thousand warriors. This begins to look serious, and our readers will perhaps sympathize more fully, now, with the course of the *Globe* upon the matter of the Indian policy and of the administration.

The United States surveying expedition, now in Dakota, has already had seven severe fights with the savages, who attack them at every opportunity, and were not this small band of white men under military discipline and well armed, they would have been murdered to a man before this time. As it is, we understand that the Government has given order for their recall from the duty on which they were sent, fearing less they should be totally annihilated by the red skins. There is the whole United States army to protect these men than give one inch of ground in the way of retreat! This is the moment to teach the savages what war means. If they desire to perpetuate it, and to ignore all advances made by the lenient Washington Government, let it be sharp and decisive. The Indian nature is that of the wild beast; instinct shows him when his enemy hesitates, which he does not fail to attribute to cowardice, and to act accordingly. The history of the bloody deeds of these tribes upon the frontier-men and their families, for the last year alone, is quite sufficient to excuse and warrant the most severe and decisive measures against them. They are now banded together in hostile array; let their punishment be such as shall end the war between the red men and this Government. Punishment, to be efficacious, should be certain, and proportionate to the offence; no vacillating policy can be any longer relied upon.

One letter, now open before us, the writer of which we know personally as a reliable and experienced individual, just arrived at Omaha, says: "As it regards the surveying expedition, it is generally feared and believed that a combined attack will be made upon it by the savages, and in such force as to insure its destruction, unless government troops be sent in sufficient numbers to protect it, and escort the party out of the country. There is but one opinion among the settlers, from the Missouri to the Pacific, and that is that the Indians must receive, at once, a terrible and decisive punishment, or else the whites may as well abandon their claims and return eastward." We do most earnestly urge the government to awake from the spirit of pusillanimity which has so long controlled its Indian policy, and to take the decided and merciful view of the situation which demands a stern, brief and effective war upon these murderous tribes. We say merciful, because these years of daily weekly and monthly massacres and fiendish tortures would, perhaps, be, by one determined blow ended forever.

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## The Volunteer Review,

PAND

## MILITARY AND NAVAL GAZETTE.

"Unbribed, unbought, our swords we draw,  
 To guard the Monarch, fence the Law."

OTTAWA, MONDAY, OCTOBER 14, 1872.

LIEUT.-COLONEL WAINWRIGHT GRIFFITHS, at  
 present on a tour through British Colum-  
 bia, has kindly consented to act as the  
 Agent for the VOLUNTEER REVIEW in that  
 Province.

TO CORRESPONDENTS.—Letters addressed to  
 either the Editor or Publisher, as well as  
 Communications intended for publication,  
 must, invariably, be *pre-paid*. Correspon-  
 dents will also bear in mind that one end  
 of the envelope should be left open, and  
 in the corner the words "Printer's copy"  
 written, and a two or five cent stamp (ac-  
 cording to the weight of the communica-  
 tion) placed thereon will pay the postage.

From the details already given it will be  
 seen that practically very little has been de-  
 termined as to what system the *Gun* of the  
 future shall belong.

The United States and Prussia have each  
 a system of their own, and in both cases  
 failures of a striking character have occur-  
 red.

What is really wanted seems to be a gun  
 capable of bearing the greatest strain that  
 can be applied to it in ordinary practice—

that will have endurance—that will be easily  
 handled—and that can be made to throw its  
 projectiles with certainty.

In addition to all this its mechanical con-  
 struction should preclude the possibility of  
 accidents such as have destroyed the best  
 ordnance in the British service, and all other  
 things being equal, that it should be as cer-  
 tain and as easily handled comparatively as  
 an ordinary Rifle.

On behalf of the present system it has  
 been urged that the destruction of the gun  
 was due to a false and vicious method of rif-  
 ling founded on the theory that it was neces-  
 sary to retard the shot in order to enable the  
 powder to ignite.

As a theory the idea was correct, but the  
 method taken in practice was decidedly  
 wrong—it was to increase the twist towards  
 the muzzle of the gun—the effect being re-  
 tardation of the shot in the weakest portion  
 of the bore, and the increasing stroke or  
 pressure in the effort to force it out threw  
 the shot out of gear, i.e., forced the studs  
 out of the grooves causing a smash up of the  
 shot, or, as was often the case, at the first  
 impact the shot was thrown out and the sec-  
 ond effort ended in rupturing the inner tube  
 and destroying the gun.

That both operations took place admits of  
 no doubt. The fracture of the steel tube of  
 the *Woolwich infant* (35-ton gun) was caused  
 by the wedging of the shot in the tube near  
 the muzzle, being thrown out of gear by the  
 first impact, and the breaking up of the  
*Hotspur's* shot is evidence of the second.  
 Both operations evidently occurred at dis-  
 tinct times and in different parts of the bore.

This mere mechanical difficulty can be  
 easily overcome, but rotation must be given  
 to the shot or its flight will be uncertain and  
 its effect nil. Provided the twist was uniform  
 throughout, that a powder was devised which  
 would burn quickly, would both those condi-  
 tions obviate the difficulties attendant on  
 M. L. rifled ordnance? we do not think they  
 would, and our reasons are as follows: The  
 shot is relatively harder than the tube or  
 bore, its motion is or should be that of a  
*turning tool* on a shaft, its tendency is con-  
 stantly to strip the bore, if *fitting tightly*, and  
 so damage it; if fitting loosely the same  
 series of events as now occur will be repeat-  
 ed; it will jam in the bore whether the shot  
 be studded, ribbed, or grooved.

The *Vavassuer* gun is proposed to have the  
 surface of the shell grooved or rifled with  
 the same twist as the *lands* of the bore, but  
 the very same objection holds against it as  
 in the studded shot, and will hold against all  
 ordnance when the projectile must be of ne-  
 cessity harder than the face of the tube along  
 which it must slide; and the problem is more  
 complicated from the fact that the projectile  
 of modern ordnance having to deal with  
 wrought iron must in all cases be *case hard-  
 ened*, a quality by no means necessary when  
 only wood and stone were in question.

Before the whole of this question is set-

tled a projectile coated with some substance  
 (not a metal) sufficiently tough to resist the  
 friction of the face of the tube or bore, suffi-  
 ciently elastic to fill it easily and completely,  
 and with sufficient tenacity to remain fixed  
 to the shot till it struck the object aimed at  
 must be found.

In the Armstrong system this was attempt-  
 ed to be attained by coating the shot with  
 lead—it was a failure—and it does not appear  
 that any experiments were *set going* to as-  
 certain whether a substitute might not be  
 found.

It has been seen that expanding sabots of  
*papier mache* have been used with good effect,  
 and might it not be possible to employ some  
 modification of India rubber, gutta percha,  
 or saw dust to accomplish the desired  
 object of keeping the shot from *planing* the  
 face of the bore, and giving it the necessary  
 rotation at the same time. Except the me-  
 chanical difficulties can be overcome M. L.  
 rifled ordnance will not be a striking success.

It would appear the breech loading rifled  
 ordnance fell into disuse without sufficient  
 reason; no serious effort was made to remedy  
 defects which were after all slight in com-  
 parison to the difficulties attending the de-  
 velopment of the other system.

The great objection seems to be alleged  
 weakness in the breech, but remedies could  
 be easily found for such a defect if it existed,  
 of which there are no records, while its many  
 and great advantages have been entirely  
 ignored.

Smooth bored ordnance may be said to be  
 nearly extinct in the British Service, yet it is  
 very doubtful whether it could not be made  
 a really effective weapon at small expense.

The experience acquired in the *Hotspur*  
 and *Glatton* experiment was not at all favor-  
 able to M. L. rifled ordnance, the damage  
 effected although it involved great cost did  
 nothing to impair the efficiency of the ves-  
 sel, and it would be hard to say how many  
 shots she would sustain before real damage  
 affecting her efficiency was inflicted.

It would appear that a projectile propelled  
 with greater velocity having a smashing  
 force would undoubtedly test her endurance  
 better.

In the United States a 20-inch Rodman  
 gun is in use which will throw a spherical  
 ball of 1100 pounds, and it is averred that a  
 velocity of 1600 feet per second can be at-  
 tained; what would have been the effect on  
 the *Glatton's* turret if such a projectile had  
 struck it?

The force of a moving body is as its velo-  
 city per second multiplied by its weight. The  
*Hotspur's* shot moving at the rate of 1400  
 feet per second with a weight of 600 lbs.  
 struck the *Glatton's* turret with an impact of  
 375 tons; a shot from the 20-inch Rodman  
 with a velocity of 1600 feet per second  
 weighing 1100 lbs. would have exerted a  
 force of 785 tons.

It is quite possible that the rifled shot  
 would drill the neatest shot hole, but it is

pretty certain that the S. B. would have entirely demolished the face of the turret if not entirely disabled it, and as far as certainty of aim was concerned it would have all the advantage at the distance the vessels were apart.

At the same time it is evident that S. B. guns will be entirely superseded whenever rifled artillery shall be constructed to fulfill the specified conditions, for the same reasons that rifles superseded the old smooth bore muskets.

The gun of the future will follow the analogy closer by being a breech loader and with the improved gun carriage the war machinery of the period will be complete, till some new agent of greater force, less expensive in application and more destructive in effect is applied.

The first part of the Report on the late Autumn Manœuvres in England, copied from the *Broad Arrow*, appears in our issue today, and will be continued till the whole is completed.

Our object in publishing this Report is to give our readers the best possible idea of what has really occurred, the plan, object, and method by which those manœuvres were carried out, as well as an opportunity for judging of their possible value.

We would at the same time remark that newspaper criticism on military manœuvres, especially as developed by the English press, is utterly worthless. It is hardly to be supposed that any officer of sufficient experience in actual practical warfare to be a competent judge, would so severely handle experimental manœuvres, and the value of the criticisms of half pay subalterns, many of whom have left the service for reasons not creditable to their military instincts, are worth nothing; a man may be a smart newspaper correspondent and a thoroughly useless as well as stupid soldier.

This evil course is not confined to lay journals, but professed organs of the services deal very hardly with the design and execution of the Autumn Manœuvres. Our contemporary, the *Broad Arrow*, is excessively severe on H. R. Highness the Commander-in-chief, because he complimented the General Officers and Staff by the following General Order:—

"At the conclusion of the Autumn Manœuvres of 1872, His Royal Highness the Field Marshal Commanding-in-Chief has infinite pleasure in expressing to the troops generally his entire satisfaction at the manner in which they have been carried out.

"His special thanks are due to Lieutenant General Sir John Michel, G.C.B., and Lieut. General Sir Robert Walpole, K.C.B., the officers commanding the two *corps d'armée*, upon whom, with their immediate staff, the responsibilities have mainly rested.

"Divisional general officers, officers commanding brigades, and heads of departments, have carried out all the details of their respective duties with the greatest zeal and assiduity, setting an example to the officers, non commissioned officers, and men,

including those of the auxiliary forces, under their orders, which has found a ready and willing response on the part of the troops.

The exemplary conduct of all ranks, and the cheerful manner in which they have met the fatigues and discomfort incidental to large operations in the field, have been thoroughly appreciated by His Royal Highness; and have elicited from the civil population with whom they have been brought in contact, the highest and most deserved encomiums, producing a reciprocal feeling of cordiality, which must be considered in a public sense as equally valuable and gratifying.

"The thanks of His Royal Highness are also due to the Umpire Staff for the efficient manner in which they have performed their important duties.—By Command, J. W. AUSTINSON, Deputy Adjutant General.

"Headquarters, Salisbury, September 12."

The *Broad Arrow* contends that the thanks of the Commander-in-chief has been expressed in stronger language than that of the pious Kaiser who "had reason to thank God when things turned out better than likely," and doubts the fact of the infinite pleasure expressed in the order.

As our contemporary is a violent admirer of Mr. CARDWELL it is just possible his dislike to the Royal Commander-in-chief may explain the uncalled for severity of the conclusion of its leading article, which is entitled "*Sham in Excelcis*," it is as follows:—

"We have before objected that the fair limits of sham and make-believe were overpassed in certain incidents of the campaign, and the value of the manœuvres was seriously impaired in consequence. The same remark applies to this "Order of the Day." It carries too far the art of making things pleasant, because it has no respect for the limits—we will not say of strict truthfulness, but even of probability. It is no compliment either to Sir John Michel or to Sir Robert Walpole to suppose them capable of feeling flattered by expressions so meaningless. There has been scarcely an important incident in the manœuvres which has not afforded ground for severe criticism, both in conception and execution; yet, we are to believe His Royal Highness feels "infinite pleasure" in expressing his "entire satisfaction" with everything. Sir John Michel wins by a flanking march through a town supposed to be strongly garrisoned, in the "general idea" of the campaign; yet his Royal Highness feels "infinite pleasure" in expressing his "entire satisfaction," &c. Cavalry are annihilated by cannon three miles off, which guns were firing, not at the cavalry for the most part, but at an opposing battery, and His Royal Highness feels "infinite pleasure" in recalling the fact to mind. Guns without ammunition were supposed to have crushed whole regiments, yet the Duke is pleased. The general plan of the campaign was misunderstood; the two armies mutually cut each other's communications, turned each other's flank, captured each other's baggage, and occupied each other's ground—the Duke is infinitely pleased—God bless him!

"We have no wish to spoil His Royal Highness's digestion by saying anything unpleasant. This is only the second time of trying, and many things may be better managed next year. But we have felt it to be no more than our duty to protest in good time against the excess of sham, and of all sham, sham praise is the worst. If you make believe a stone wall is a bit of aerial perspective, you may find out the mistake by knocking your

head against it. If you choose to agree that a forest is a marsh, and then allow yourself to be surprised by the enemy who uses it as a forest, you will probably not be caught napping a second time. A hundred shams of this accidental kind—using the term accidental as schoolmen or philosophers may—are not half so dangerous as sham praise, which covers all accidents with a deceptive gloss, and corrupts the faculty itself for perceiving the truth and for judging between right and wrong. We feel "infinite pleasure" in presenting the Duke with this idea for his consideration, when he next pens an "Order of the Day."

While quite prepared to admit all fair criticism we cannot too severely condemn the use of such language by a military journal, and in no other country in the civilised world except England would it be tolerated.

It is a direct attack on discipline, and it is a direct abnegation of duty for any journal professing to be an exponent of military interests to indulge therein.

There is one error for which we do not believe the DUKE OF CAMBRIDGE to be accountable, but look at it as the result of the WAR MINISTER'S interference that lies at the root of all the alleged mistakes of the campaign, it is that of "*prescribing the manœuvres*," and thereby restricting the Generals in the field to movements incompatible with the real strategy or tactics which the case under consideration demanded, and at variance with all actual experience in warfare.

The *Broad Arrow* and its contemporaries consciously or unconsciously are preparing for the British Army a system of *Field Deputies* taken from Attorneys-at-Law, Manchester Cotton Spinners, or Birmingham Iron Founders, that will leave the old Dutch prototypes nothing to boast of in the way of disgrace and disaster.

The "General Order" was a fitting termination to an arduous service, whatever the *Broad Arrow* may say to the contrary; but it is evident that nothing short of a grave disaster will awaken the people of England to a sense of the fools paradise in which Whig Radicalism has landed them.

The close of the Autumn Manœuvres in England has given opportunity for a good deal of criticism, by far the larger part of which is worthless except as a newspaper article. Several journals, however, have undertaken the praise-worthy task of speculating on the probable consequences to the army and the effect on the foreign policy of Great Britain; amongst others, the correspondent of the *Montreal Gazette*, in describing the final review of the troops and the march past, says:—

"It would add much to the interest of these great military shows, (the taste for which, hitherto dormant, is fast growing) if select bodies of colonial troops could take part in them. The presence of even a single company of Canadian militia would have double the enthusiasm with which the army was received."

We have sent a detachment to Wimbledon,



whose efficiency and good conduct has given a name and status to the Canadian Army, The Dominion is not so poor nor its people so parsimonious as to preclude the possibility of sending a division to represent its military force at the next Autumn Manœuvres in England.

A battalion from each Province with a proper quota of artillery, cavalry and engineers, fully equipped for service in the field with its own commissariat staff and every arm complete, would not only show the good people of Great Britain the stuff of which the Canadian soldier is made, but materially advance the interest of the Dominion, as an example of her material power and resources.

Suppose the four battalions should number 400 bayonets each—1760 men; 120 officers; 500 sabres, 30 officers, 250 gunners and drivers (two field batteries) 5 officers; 110 engineers, 6 officers, divisional commissariat and staff, 10 officers, commissariat department, 8 officers—total, 182 officers and 2620 men; 600 horses.

Taking the transport, cost of the equipment; and time occupied as *three months*, \$1,000,000 (one million dollars) would be ample to cover all expenses, and it is quite certain that it would be the very best laid out money this country ever invested.

If, as all history and experience tells us constant preparedness for war is the price to be paid for peace, a demonstration of this description by giving tangible and actual evidence of our condition and efficiency would carry more conviction to the minds of our English brothers than all the reports and speeches ever issued or uttered.

This country has great and varied interests to be developed. In order to enable us to make necessary progress we want the investment of the surplus capital of Great Britain as well as the aid of her surplus population, we have hitherto failed in securing any great amount of either, and a movement such as that intimated by the *Gazette* correspondent is precisely the very thing to induce an influx of both, and we put the idea in tangible form as an effort within the power of the country.

Last financial year we had a surplus revenue of \$5,000,000, the expenditure of one million for the purpose of shewing our young men what war looks like and what their English brothers are in their dear mother land, is surely a sum the country can spare, and we hope to see it in the Estimates next Session of Parliament.

While on this subject, as the Canadian militia ranks amongst the *reserve* forces of the Crown, it ought to be styled either the *Royal Canadian Army*, or *Militia*, and the details of its organization should appear in the *Royal Gazette*.

*Broad Arrow* blamed somebody for this omission some time ago, the error, intentional or otherwise has not been yet repaired.

The advantages to be gained by the proposed measure would be incalculable, it would give our officers an idea of what the real work of campaigning should be, it would give them an opportunity of seeing the mode in which the Regular Army is handled, and by compelling them to depend on their own organization, it would have all the effect, as far as they were concerned, of actual service in the field.

In the report upon the operations of the second French Army corps during the late war we read: "If the losses of the French army at Gravelotte were relatively inconsiderable, the circumstance must be attributed beyond all dispute, to the precaution taken to provide shelter for the combatants, in the shape of earthen screens and epaulments at certain points and to the enforced observance to the injunctions to take advantage of undulations and hollows in the ground, not for the purpose of hiding the troops and remaining inert behind the shelter so provided, but to protect them in the delivery of their fire. So convincing a proof of the efficacy of hasty entrenchments in the field of battle has not before come under our notice, and we commend it accordingly to the attention of all future commanders." Thus General Frossard, a foreign military critic, who quotes the above, has lately observed: "Now a days, an army repudiating the aid of pick and shovel will expose itself to enormous loss, as surely as one immobilizing itself in an entrenched position will see its opponents pass unharmed and out of range, to turn its flank or to take it in rear." Without presuming to dogmatize upon the subject, we may fairly question whether the full force and import of this conclusion, which appears to us to be incontrovertible, has not yet been quite realised in our own Service. Have the holders of the military purse strings fully weighed and considered the possible effect of lack of means for improvising cover, or of a practical knowledge of its application, in narrowing the plans and restricting the movements of a general operating with a small force in an open country, like certain portions of the theatre of the present manœuvres? The late Sir John Burgoyne, when treating of the pressing requirements for providing the greatest amount of cover in a limited period of time against the destructive effects of modern rifle fire," in a brief memoir on "Hasty Entrenchments," which appeared in the "Royal Engineer Papers for 1870," noted amongst other matters, well worthy of consideration, "trials, experiments, and practice; firstly, in respect of the provision of the most necessary implements, with every regulation for their transport, care, and preservation; and secondly as to the means of employing them to most advantage; firstly for cover, and secondly for defence, particularly defining the time and means requisite for each distinct operation, not as regulated by accomplished Sappers at Chatham, and under every advantage, but which may reasonably be expected from soldiers of the Line, under all the fatigues, hardships, and privations of a campaign." More than three years have elapsed since this was written; and the "trials, experiments, and practice," desired by the lamented Field Marshal, are still, so far at least as concerns the Line, amongst the "good things coming." How long are they to remain so?—*Broad Arrow*.

There can be no doubt that the *spade* and *pickaxe* will double the strength of any force

enabled to use them intelligently in an action.

In another column will be found an extract from General Hazen's (of the United States service) recent work on the *School* and the *Army*, which gives decisive and practical evidence on this point.

Like any other manœuvre, it must be taught and enforced as a portion of discipline, and is quite as necessary a knowledge as that of the manual and platoon exercise.

It is stated that the cost of repairing the *Glatton* turret ship, will amount to ten or twelve thousand pounds sterling. Our readers are aware that all the damages were inflicted by the *Hotspur* in the recent experiments.

The question naturally arises as to what the cost of a general action at sea is likely to be, seeing that two shots alone inflicted sufficient damage to cause such an expenditure of money, and nearly four months of labour.

As a matter of course the conditions are not likely to occur in actual fighting, but it gives an idea of what the cost of such an operation may be. It is a far better guarantee for peace, than all the platitudes of statesmen, or the foolscap of Treaties.

We have received from the Secretary, Capt. R. Y. ELLIS, the prize list of the Ingersoll Rifle Association, which offer \$384 in prizes. The Matches are to come off at the Ingersoll Rifle Ranges on Tuesday and Wednesday the 22nd and 23rd inst.

## REVIEWS.

We have to acknowledge the receipt of a beautiful *Chromo lithograph*, "The Unwelcome Visitor," from the publishers of the *American Land and Law Adviser*, published by Messrs. Croft and Phillips, Pittsburgh, Pennsylvania.

It is one of those rare gems from a painting by F. J. Kattenbalch, which for simplicity of design and beauty of color indicates unity of taste and the hand of a master.

The subject is the interior of a barn, Dame Partlet and her brood, is surprised by the appearance of Monsieur Reynard, a pet fox whose chain just enables him to show a portion of his head and shoulders through the hole he has slyly eaten in the door between his kennel and the barn.

The consternation and terror of the chickens, the rage and alarm of the hen, the stately courage of the rooster, in which his knowledge of the danger is plainly portrayed, and the disappointed as well as baffled longing of the fox is plainly depicted.

In fact it is altogether a beautiful picture, and it is creditable to the energy of Messrs. Croft and Phillips to give their subscribers and friends such a splendid gift.

**A RUSSIAN IRONCLAD.**

The special correspondent of the *Daily News* at St. Petersburg gives an interesting account of the new ironclad, *Peter the Great*, from the Admiralty Dockyard. The vessel received its name from the Grand Duke Constantine, in the presence of a great concourse of people. The wedges were withdrawn simultaneously, and the great ship glided without check or noise into the Neva. In a few days she was lifted into a floating dock, which would be towed with its enormous burden, over the shallows to Cronstadt, where the engines will be fitted, the ship's sides and turret sheathed with massive plates, and the four great steel cannon shipped, so that in less than a year's time Russia will have at sea by far the most powerful man-of-war yet built. The vessel has been designed by Admiral Popoff, an officer of the highest distinction, who is well and favorably known in England. His ship differs in many respects from the American and English turret-ships, and the design has so many excellencies that it deserves the attention of our authorities. While as good a piece of mechanical construction as any of Mr. Reed's vessels, she is in size, height, form, buoyancy, stability, and engine power, able to make a long voyage of seventeen days at a high speed in any condition of weather.

The *Peter the Great* is 329 feet 8 inches in length between perpendiculars. Her greatest outside breadth is 63 feet. The builder's measurement is 5352 tons, and the displacement with coal, stores, and waters in boilers will be 9665 tons, at a main draft of 23 feet 9 inches. The plates on the ship's sides and raised building amidships vary from 12 to 14 inches, and the armor plate protects the ship to a depth of six feet below the water line. The vessel has no spur, but the upright stem is heavily plated and of enormous strength. She has two large turrets, which are plated with sixteen inches of iron, in two thicknesses of fourteen and two inches. She has no masts, but depends entirely on her engines, which are on the compound principle, and in construction resemble Messrs. Renote's latest type. Each engine is of 700 horse power, and connected with two four bladed screws. There are twelve boilers, which will require at full speed 132 tons of coal in 24 hours, at which rate of consumption the engines will work at 10,000 horse power effective, and the ship will be driven at fourteen and a half knots speed per hour. If the engines are worked at second grade of expansion she will have coal for seventeen days, steaming twelve and a half to thirteen knots per hour.—*Broad Arrow.*

At Macon in Georgia, a serious riot occurred at the polls in this city this morning, between whites and negroes. One white man was killed and five or six negroes wounded, two of whom have since died. The whites claim that the whole affair was premeditated on the part of the negroes, and that it was their intention to take forcible possession of the polls. The negroes claim that they were driven from the polls by violence and could not get a chance to vote.

A riot occurred about ten o'clock on the corner of Fifth Street and Broadway between a Fourth Ward Greeley torch light procession and colored people, in which fifty or seventy-five shots were fired and several persons wounded, but none so far as heard of, killed. The accounts of the affair by eye witnesses are very conflicting, and it is most impossible to obtain reliable particulars.

**29TH BATTALION RIFLE COMPETITION.**

The *Reformer* says.—Five Companies of Waterloo Battalion were represented at the Rifle competition, which took place at the Falt Range on Friday, 29th ult. The Hespeler Co. carried off the Battalion prize, and one of the members of that Company won the medal. The county prizes were taken as follows:—

**GALT.**—Pte. Montgomery, 1st Co. prize; Pte. Henderson, 2nd; Pte. McLaren, 3rd; and Pte. Minto, 4th.

**CROSSHILL.**—Sergt. Raney, 1st Co. prize; Pte. McCulloch, 2nd; Pte. Freoborn, 3rd; and Pte. Hilcox, 4th.

**WINTERBOURNE.**—O. R. C. Chalmers, 1st Co. prize; Pte. Hendry, 2nd; and Sergt. Robertson, 3rd.

**PRESTON.**—Sergt. Rosenberger, 1st Co. prize; Pte. H. Card, 2nd; Pte. Teidt, 3rd; and Pte. S. Card, 4th.

**HESPELER.**—Sergt. Evans, 1st Co. prize and batt. medal; Sergt. Jackson, 2nd; Pte. Eagle, 3rd; and Corp. Brydon 4th.

Some 250 steerage passengers by the steamship *Atlantic* complained to the Commissioners of Emigration of rough insulting treatment from the crew, and bad and insufficient food. The Commissioners are unable to hold an investigating owing to the complainants having gone their several ways after arrival.

At Dargonne, N J, an explosion of nitro-glycerine occurred on the Central Railroad, where some forces had been at work track building. The glycerine was applied for an experimental blast. The quarrymen were ensconced behind boulders and after the blast, Patrick McFlynn, who was not more than forty feet distant, was found horribly mangled, with his right arm torn off by a piece of rock. Another labourer, struck in the bowels, is in a dying condition. Another was lifted in the air and dangerously hurt. A residence 200 feet distant had its roof crushed through by a boulder weighing a thousand pounds.

The Hudson River House, at Catskill Point, was burned this morning. It was occupied by J H Taylor as a hotel. Van Steenbug's loss is about \$7,000; insured for \$1,000. Taylors's loss is about \$2,000; insured for \$1,000.

It is stated that the Cuban revolutionists are investing the city of Principe with a large force. They have made several captures of Spaniards lately, and have been victorious in a number of skirmishes. The Revolutionists are reported to have fresh supplies of arms and ammunition.

NEW YORK, Oct 8.—A salute of 100 guns will be fired in the City Hall park on Thursday, for the anniversary of Cuban independence.

**ROW BETWEEN THE PRINCE OF WALES AND THE ADMIRALTY LORDS.**—The mysterious hints given in the early part of this week respecting an altercation between the Admiralty and the Prince of Wales are now explained. It appears that whenever war vessels are in company, a gun is fired at 9 o'clock in the evening from the ship bearing the flag of the senior officer who happens to be present, to which response is made by the sentry of every other ship firing a rifle. Last Saturday evening, when the Reserve Squadron was in Portland Roads, the 9 o'clock gun was fired from the royal yacht *Victoria* and *Albert*. The Lords of the Admiralty, who were in the *Enchantress*, immediately sent a note to Prince Leiningen, captain of the Royal yacht, demanding why he had fired in presence of the Admiralty flag. Prince Leiningen replied that he had done so because he had two Royal Princes, Wales and Arthur, on board. The Admiralty rejoined that their flag was supreme, and that the act was unwarranted. The Prince of Wales then took up the matter and justified what had been done on board the yacht. The Admiralty retort was equally warm, and the controversy was kept up by notes passing between the two vessels for two hours, when at one o'clock in the morning the Admiralty sent a note expressing their regret at the difference which had unfortunately arisen, and offering to withdraw their letters. The Prince of Wales replied that he should assent to no withdrawal that he had never been so insulted in his life, and should demand an inquiry. It is said that the particular Admiralty Lord who took the initiative has offered to resign, but that his colleagues will not hear of it.—*Dundee Advertiser.*

The splendid manufacture of our artillery has been put to a severe proof at Woolwich, where forty rounds have been fired from a 9 inch gun, returned from the *Bellerophon* with a transverse fracture of the A tube, or outer wrought iron skin, about eighteen inches from the muzzle, and of considerable extent, in order to ascertain how far a gun so injured may be relied on for further work in an emergency, and to ascertain other facts of value to artilleryists. The firing has produced no visible effect either upon the external fracture or upon the steel inner tube, which remains intact. The celebrated "Infant" has been cut in two transversely five feet from the muzzle at the junction of B coil and B tube, and is having the steel barrel and cascable bored out in flakes to observe how deep the injury has gone. The steel barrel is three and a-quarter inches thick, the cascable one and a-half tons weight. A new steel block has been received from Sheffield six and a half tons weight. A new B tube, or muzzle coil, is being made, and also a new cascable. The B tube will be shrunk on the barrel, and then the whole taken to the Shrinkage Department and the old breech portions shrunk over the barrel and the new cascable screwed in. The testing of the gun from the *Bellerophon* suggests the observation that these openings of the coils appear to generally occur over the spot where the increasing spiral brings the front studs of the projectiles into bearing.—*Broad Arrow.*

REMITTANCES Received on Subscription to THE VOLUNTEER REVIEW up to Saturday, the 12th inst:—

HILLSBORO', Ont.—Capt John C. Pollock, \$2.  
KINGSTON, " Capt. Philip Bajus, \$1.  
OTTAWA, " Ens. Gerald H. Bate, \$2.  
QUEBEC, Que.—Capt. Wm. A. Walker, \$2.

## ALL THINGS FOR OUR GOOD.

Oh times we meet with trial  
And tolls upon our way,  
We're pressed to self denial,  
And know not what to say.

The path seems rough and stony,  
Ourselves misunderstood;  
'Tis then we must remember—  
All things are for our good,

Sometimes our life seems dreary,  
A sad and lonely one;  
Our feet are worn and weary,  
We wish that it was done.

But when we see the shadows  
Of this approaching mood,  
We ought to hold the promise—  
All things are for our good.

Christ says 'he will not leave us'  
To grope our way alone;  
He always will relieve us,  
And keep us, every one.

But we must all be tested,  
And stand as christians should,  
Amid the fiery furnace—  
All things are for our good

Earnest Christian.

## THE FENIAN BROTHERHOOD.

ELEVENTH GENERAL CONVENTION—JOHN O'MAHONEY ELECTED CHIEF SECRETARY.

The Fenian Brotherhood held its Eleventh Annual Military at Military Hall, No. 193, Bowery, New York city, during the past week. Its sessions were commenced on Tuesday and its labors were concluded at a late hour on Saturday night. Though the number of delegates were not as large as on some former occasions, still, were the present strength of this once formidable organization to be judged by the earnestness and assiduity of its representatives on this occasion and the zeal with which they performed the duties of their trust, it would appear that the vital energy of the Fenian movement is still far from being crushed out in this country, notwithstanding the falling away of many of its former adherents. The delegates having assembled in their hall, the meeting was called to order by Colonel P. Leonard, the Chairman of the Supervisory Committee, at 11 o'clock on the 26th inst. Thereupon, Mr. George Cahill, of Quincy, Massachusetts, was elected temporary chairman, and Mr. T. F. Larkin, of Brooklyn, N.Y., temporary Secretary. The business transacted was the appointment of Messrs. W. R. Nagle, New York, James Meagher Brooklyn, Dominick, Boston, Thomas McDonnell, New York, and John C. Begley, New York, as Committee on Credentials. This Committee having returned after a recess of fifteen minutes, and their report having been received and adopted, the following delegates were appointed a Committee on Permanent Organization: William R. Nagle, New York, John Tighe, Boston; Patrick Ford, Brooklyn; John Barry, New York, and Jeremiah Lyons, Westchester, New York. After which the meeting adjourned.

On re-assembling the following delegates were nominated for permanent officers.

President, Joseph Paul.

Vice-President, George Cahill, M. C. Murphy.

Secretaries, J. S. Larken, J. W. Keough.

Sergeants-at-arms, Bernard Starrs and Geo Smith.

Mr. Paul, on taking the chair, briefly addressed the Convention on the present condition and future prospects of the organization. The report of the Supervisory Committee of the Executive Council was then introduced and submitted to the meeting by Mr. Anthony A. Griffin.

The next business transacted was the appointment of the following committees:

## COMMITTEE OF FINANCE.

John Tighe, Boston.  
John Barry, New York.  
John D. Driscoll, Boston.  
William Davis, New York.  
Michael McDermott, Albany.  
Denis Highland, Brooklyn.  
Jeremiah Lyons, Westchester.  
Joseph Harcourt, New York.

## COMMITTEE OF MILITARY AFFAIRS.

Colonel P. Leonard.  
Colonel M. C. Murphy.  
Major Leonard.  
Captain William R. Nagle.  
Lieutenant Edward Byrne.  
Captain P. Griffin, Brooklyn.  
Captain Charles O'Malley, Boston.

## COMMITTEE ON THE PRESENT CONDITION AND FUTURE DIRECTION OF THE ORGANIZATION.

Michael McNameara, Boston.  
George Cahill, Quincy.  
Patrick H. Ford, Brooklyn.  
A. A. Griffin, New York  
John O'Mahoney, New York.

## COMMITTEE ON HOME ORGANIZATION.

John O'Mahony, New York.  
Dominick Toy, Boston.  
Patrick McNally, Paterson, N. J.  
George Smith, New York.  
Patrick Dunne, Brooklyn.  
The meeting then adjourned.

The sessions of the Convention, during Wednesday, Thursday, and part of Friday, were occupied in a close scrutiny and animated discussion of the reports of the foregoing Committees on Finance, Military Affairs, and Home Organization.

The greater part of Friday, and all of Saturday was devoted to the reception of the report of the Committee on the present condition and future prospects of the Fenian Brotherhood, and to the adoption of measures for its future direction and development.

During the session of Saturday, a Committee was appointed for nominating the governing body of the Fenian Brotherhood for the coming year. After the confirmation and adoption of the constitution and by-laws the committee presented the following gentlemen for officers, and they were unanimously elected.

## BOARD OF FINANCE TRUSTEES.

Joseph Paul, New York.  
George Cahill, Quincy, Mass.  
Patrick Dunne, Brooklyn, N.Y.  
Colonel Patrick Leonard, New York.  
Edward McSweeney, St. Louis, Mo.  
George Smith, New York.  
Anthony A. Griffin, New York.  
Denis Hyland, Brooklyn.  
Patrick H. Ford, Brooklyn.

## BOARD OF AUDITORS.

John Murphy, New York.  
John D. Driscoll, Boston, Mass.  
John Barry New York.  
Jeremiah Lyons, Westchester.

## CHIEF SECRETARY.

The name of Colonel John O'Mahoney, of New York, the original Head Centre of the Brotherhood was presented for Chief Secretary, and he was elected by acclamation by his old fellow workers amid a scene of intense enthusiasm. The Convention then adjourned *sine die*.—*Irish People*.

## GUN-COTTON.

Some additional experiments were made last Monday Afternoon at the practice ranges on Wimbledon Common with the new gun-cotton invented by Mr. Punshon, of which some notice has already appeared in our columns. The new compound consists of gun-cotton prepared in the ordinary manner but with which nitre and crystals of cane sugar are mixed in certain definite proportions. There are certain conditions which have to be observed with regard to incorporation and manipulation, and upon which the success of the compound as an explosive depends. The result is a loosely granulated cotton, which is finally subjected to pressure, the amount of which is regulated and varies according to certain circumstances which have reference to the use to which it is intended to be put. The gun-cotton thus produced can be used in fire-arms, and so far as experiments have as yet shown, is perfectly safe in use, as it can only be exploded by percussive fire. Ignited by ordinary means, it simply burns away, leaving a considerable deposit; but fired percussively it explodes violently, a very small and light residue and casing but very little smoke.

The experiments were made in the presence of Lord Elcho, Lord Dunraven, Sir Seymour Blanc, C.B., Colonel Anson, M.P., Colonel Ryley, Captain Codrington Forsyth, R.N.; Captain Hayes, Captain Flood Page, Captain Ross (Austrian Service), Messrs. R. W. Dunlop, C.B., &c. The object of the first series of experiment was to ascertain the penetrative power of the gun cotton as against gunpowder. For this purpose twenty deal boards, one inch thick and held one inch apart in a rack, were placed in front of an iron target. The practice was commenced by Mr. Punshon firing a charge consisting of fifty grains of gun-cotton and a service bullet from an ordinary service Martini Henry rifle—the same rifle being used throughout the experiments—at fifty yards range. The bullet passed through the twenty deal boards, and on recovery was found to have been perfectly flattened by contact with the iron target. The second shot was made with eighty-five grains of Curtis and Harvey's No. 6 gunpowder, which sent the bullet through the whole of the boards, but it was not recovered. Round No. 3 was with fifty grains of gunpowder, which drove the bullet through thirteen boards, missing the fourteenth which had got shifted, penetrating the fifteenth, and being stopped by the sixteenth. Round No. 4 was with twenty-five grains, or half a charge, of gun-cotton, which sent the bullet through ten boards, the eleventh stopped it. Round No. 5 was with eighty-five grains of gunpowder, which sent the bullet through all the boards to the iron target.

The range was then increased to 500 yards in order to show that the gun-cotton was as certain in its effect at long as at short ranges. The first round of this series was with fifty grains of gun cotton, the bullet being carried over the target. Round No. 2 was a repetition of the last, the bullet hitting just over the bull's eye. Lord Elcho then expressed a wish to try the new gun cotton as against gunpowder, and fired round No. 3 at this range with eighty-five grains of gunpowder, making an outer. No. 4 was a repetition of No. 3, his Lordship making a bull's eye. No. 5 was with fifty grains of gun-cotton, the bullet passing over the target; the gun cotton making the same elevation as gunpowder Lord Elcho making a centre. In order further to test the apparent fact that the gun-cotton gave a higher trajectory and greater velocity than gunpowder, Mr. Dun

lop, C.B., fired the next two rounds. No. 7 was with fifty grains of gun cotton, Mr. Dunlop making a bull's-eye, while with No. 8, firing eighty-five grains of gunpowder, the bullet went to the low right. The general result at this target showed that better shooting was made with fifty grains of gun-cotton than with eighty five grains of gun-powder, the difference in the trajectory being about two feet. In order to test if this difference remained constant at longer range the party removed to 600 yards. Lord Elcho again took the rifle, and with fifty grains of gun-cotton made a centre left; the second round at this range was with eighty-five grains of gunpowder, which lodged the bullet in the bank below the target. Mr. Dunlop fired rounds Nos. 3, 4 and 5 at this range with fifty grains of gun-cotton each time to get the range, No. 3 being low, No. 4 going to the left, and No. 5 being an outer high left. No. 6 was with eighty-five grains of gunpowder, the shot falling low. The fact previously alluded to was by this means established—viz., that difference between the trajectory of gunpowder and that of the new gun-cotton remained constant, or as nearly so as could be judged, under the varying conditions of range and marksman.

"All the gun-cotton that had been used hitherto was from one batch in the manufacture. Mr. Punshon, however, had with him of his cotton in which a slight variation had been made in the manipulation and by which he hoped to get greater strength, and two rounds were fired with this by Lord Elcho at 600 yards. The charge in each case was fifty grains, and the result in each case was a low trajectory, showing that the gun-cotton was weaker rather than stronger than that which had been used previously; its power, in fact, was about equal to that of gun-powder. The final trials were for rapidity and accuracy combined, and they were made by Mr. Punshon firing ten shots with fifty grain gun-cotton charges at 100 yards. The time occupied was seventy-seconds, Mr. Punshon making four bull's-eyes, two centres, and four outers. The experiments were highly satisfactory, and demonstrated as far as they went, the perfect adaptability of Mr. Punshon's gun-cotton for use in small arms and its decided superiority over gunpowder in the several respects we have indicated, to which we may here add that of uniformity. It should be stated that the whole of the gun-cotton used had passed through the hands of Mr. William Valentin, Demonstrator of Practical Chemistry at the Royal College of Chemistry, London, and who has made satisfactory analyses of samples from the bulk of which the cartridges were made up."—*Times*, 15th April.

**RIFLE MATCHES.**

**THE 4th ANNUAL MATCH OF THE COUNTY OF PERTH RIFLE ASSOCIATION.**

Was held at the range here on the 27th and 28th of last month. On the whole the shoot was very superior—indicating that these annual matches create a laudable spirit of rivalry among the volunteers.

The following are the names of the successful competitors:

First Match—Ranges 200 and 300 yards—5 shot at each range.

1st. Captain Oronhyatekha, 32 points, \$6.

2nd. Captain Parkinson, 30 points, \$5.

3rd. Pte. Bethune, 29 points, 2 vols. Good Words, presented by Col. Daly.

4th. Pte. Gordon, 22nd Battalion, 29 points, \$2.

5th. Sergt. Robertson, 29 points, \$1.50.

6th. John Burch, 29 points, \$1.

7th. J. Turner, 28 points, \$1.

8th. John Thom, 28 points, 50c.

9th. Sergt. Upthegrove, 27 points, 50c.

Second Match,—Ranges 300 and 400 yards—5 shots each range.

1st. Sergeant Jackson, 7th Battalion, 36 points, \$6.

2nd. Captain Oronhyatekha, 34 points, \$5.

3rd. R. Hay, 33 points, half barrel ale, presented by Grant & Son.

4th. J. Burch, 33 points, \$3.

5th. Sergt. Upthegrove, 32 points, \$2.

6th. Pte. Galbraith, 32 points, looking glass, by D. Campbell.

7th. Pte. Bethune, 32, \$1.

8th. J. G. Turner, 31 points, 50c.

Third Match,— Ranges 400 and 500 yards—5 shots each range.

1st. Pte. McCrae, 36 points, \$6.

2nd. Capt. Oronhyatekha, 33 points, \$5.

3rd. Private Bethune, 32 points, silver vase, by E. S. Whitehead.

4th. Captain Parkinson, 32 points, \$3.

5th. Sergt. Upthegrove, 31 points, \$2.

6th. Sergeant Robertson, 31 points, lamp, Boxall.

7th. J. G. Turner, 30 points, \$1.

8th. J. Burce, 29 points, 50c.

Fourth Match—Ranges 500 and 600 yards—5 shots at each range.

1st. Pte. Bethune, 31 points, silver cup, by Captain Oronhyatekha.

2nd. Pte. Gordon, 22nd Battalion, 29 points, \$6.

3rd. Pte. McCrae, 28 points, \$5.

4th. Major Scott, 28 points, a hat by Major Stephenson.

5th. J. Burch, 28 points, \$2.

6th. J. Thom, 25 points, pair kids, Gordon Bros.

7th. Capt. Oronhyatekha, 25 points, \$1.

8th. Pte. Galbraith, 24 points, 50c.

Fifth Match— Ranges 200, 500, and 600 yards—5 shots at each range.

1st. Pte. Anderson, 45 points, \$10.

2nd. J. Thom, 44 points, \$8.

3rd. Captain Parkinson, 40 points \$6.

4th. Pte. Bethune, 40 points, \$4.

5th. Sergeant Jackson, 38 points \$2.

6th. Pte. Galbraith, 37 points, Tea pot, by J. J. Odbert.

7th. Private McCrae, 37 points, \$1.

8th. R. Hay, 37 points, 50c.

Sixth, or consolation match, range 400 yards, 7 shots.

1st. Pte. Galbraith, 26 points, \$5.

2nd. Sergeant Upthegrove, 25 points, \$4.

3rd. Pte. Roddick, 24 points, \$3.

4th. J. Burch, 23 points, \$2.

5th. Major Scott, 23 points, \$1.

6th. Sergeant Robertson, 22 points, 50 cents.

Three prizes were awarded to the highest aggregate scores, as follows:

1st. Pte. Bethune, 164—\$20 and badge, by the Ontario Rifle Association. 2nd, Capt. Oronhyatekha, 160—\$10. 3rd, Pte. McCrae, 154—\$5.—*Strathroy Herald*.

**THE PRINCE OF WALES VS. THE VICTORIA RIFLES (28).**

The return match between the Prince of Wales and the Victorias took place at Point St. Charles on Saturday afternoon, and resulted in favor of the latter.

The weather was not favorable for good shooting, but notwithstanding some very good scores were made. At the hour appointed the Prince of Wales team appeared on the ground, but one of the Victorias was missing, and having no spare man to fill his place

the match might have been claimed by the Prince of Wales, but they generously allowed one of the Vicks to shoot for the absentee.

At the first three ranges the "Vics" led by a large number of points, at 600 yards, however, the Prince of Wales made a gallant attempt to overhaul them, and when the last shot was fired, the "Vics" led by 20 points.

The highest individual scores were made by the Victorias, Lieutenants Andrews and Campbell each scoring 61 points. During the afternoon the ground was visited by the gallant Colonel of the Prince of Wales and his lady and a large number of friends of both parties.

**PRINCE OF WALES.**

	200	400	500	600	Total.
Capt. Hill	12	14	13	13	52
Sgt Stewart	13	9	15	12	49
Sgt Porteous	9	14	10	14	48
Sgt Quinn	13	19	14	9	55
Seg Wilson	12	16	13	10	51
					254

**VICTORIA RIFLES.**

	200	400	500	600	Total.
Lt. Andrews	13	19	16	13	61
Pte Matheson	11	18	17	10	46
Pte ———	11	17	12	6	56
Pte Costigan	13	17	16	4	50
Lt Campbell	13	18	16	14	61
					274

Victorias.....274  
Prince of Wales.....254

Majority for Victorias... 20

A Fish Story.—France provides us with a perfect marvel in the way of a fish. The Journal des Debats tells the story, and with an air of seriousness that scarcely admits of doubt. It is of a carp that has just died at Chantilly, in France, at the extraordinary age of three hundred and seventy five years. If this be true, the carp was sporting in its native element when the Moors were driven out of Granada by the Spaniards, and was born some five years after Columbus first put his foot on American soil. Glass was not yet in use, and printing was not invented. It was twelve years old when Henry VIII. ascended the throne, and had survived two decades before Martin Luther was heard of! This extraordinary fish belonged to a wealthy merchant of Chantilly, who bought it about a year ago for 1300 francs. It was born on the estate of the Count de Cosse in 1497, under the reign of Francis I., and has, during its long life belonged to thirty-two different masters. If had naturally become quite an object of history, went by the name of Gabrielle, and measured ninety seven centimetres in length—between nineteen and twenty inches of our measure. There is no knowing how much longer this creature might have lived, as it did not die a natural death, but was killed in mortal combat with an enormous pike. Its owner's little son was present at the fatal battle, but, seeing in it only something to amuse him, he neither interfered nor called the domestics to separate the combatants. Only think of a fish alive in our day, and with vigor enough to fight a battle, that was born while Henry VII. of England was on the throne. It is a pity that carp left no memoirs. Its history was truly writ in water.

## DOMINION OF CANADA.



## MILITIA GENERAL ORDERS.

## HEAD QUARTERS.

Ottawa, 11th October, 1872.

GENERAL ORDERS (25).

No. 1.

## MILITIA STAFF.

To be Deputy Adjutant General for Military District No. 9.

Brigade Major Colonel John Winburn Laurie, vice Sinclair deceased.

To be Brigade Major 1st Brigade Division, Province of Nova Scotia:

Lieutenant Colonel Conrad Sawyer, vice Laurie, appointed Deputy Adjutant General of Military District No. 9.

MEMO.—The Head-Quarters of both the above officers to be at Halifax.

## ACTIVE MILITIA.

*Provisional Battalion on service in Manitoba.*

MEMO.—Erratum in No. 1 of G. O. (23), 6th September last. Adverting to the rank of Honorary Major Morice, read "1st Jun., 1871," instead of "1st June last."

*Detachment of Garrison Artillery for Service in Manitoba.*

A detachment of Garrison Artillery having been authorized to be raised for service in the Province of Manitoba First Lieutenant Major J. Ernest M. Taschereau is appointed First Lieutenant in command, to date from 25th September last.

## PROVINCE OF ONTARIO.

*"A" Battery of Artillery and School of Gunnery Kingston.*

The following officer is authorized to join the School of Gunnery at Kingston, on probation, for a three months course of instruction:

2nd Lieutenant Percy Raphael Ricardo, Durham Field Battery.

*Kingston Field Battery of Artillery.*

Brevet Lieutenant-Colonel and Major Thomas Drummond is hereby permitted, as a special case, in consideration of his long service—a period of 35 years—as an officer in the Active Militia, to retire retaining the rank of Lieutenant-Colonel.

*15th Battalion or "Argyle Light Infantry."**No. 1 Company.*

To be Lieutenant, from 18th June, 1872:

Ensign George Edward James Hanwell, M. S., from No. 5 Company, vice Crozier, promoted.

*No. 4 Company.*

To be Captain:

Ensign Lewis Allan Appleby, M. S., vice Lazier, promoted.

To be Ensign, provisionally:

Joseph F. Roberts, Gentleman, vice Appleby, promoted.

*41st "Brockville" Battalion of Rifles.**No. 3 Company, Frankville.*

To be Lieutenant:

Ensign Henry Clutterbuck, V.B., vice R. Rathwell, whose resignation is hereby accepted.

## BREVET.

To be Majors:

Captain Frederick W. Campbell, M.S., No. 3 Company, 48th Battalion, from 13th July, 1871.

Captain John Kirby Macaulay, M. S., No. 5 Company, 47th Battalion, from 29th May, 1872.

## LEAVE OF ABSENCE.

Captain J. H. Dumble, Cobourg Battery, G.A., for six months, from 28th ult., to proceed to England on private affairs.

## RETIRED LIST.

Major Archibald Douglas is permitted—under 32nd Section of the Militia and Defence Act—to retire with the rank of Honorary Lieutenant-Colonel.

## PROVINCE OF QUEBEC.

*Montreal Brigade of Garrison Artillery.*

Captain and Paymaster George Lulham, to have the rank of Honorary Major, from 15th July, 1869.

*1st Battalion of Rifles, or "Prince of Wales' Regiment."*

Honorary Captain and Paymaster Alex. Milloy, to have the rank of Honorary Major from 13th April, 1871.

Quarter Master Robert Balfour, to have the rank of Honorary Captain from 19th July 1872.

## BREVET.

To be Lieutenant Colonel:

Major Richard Alleyn, V.B., 8th Battalion, from 20th September 1872.

To be Major:

Captain and Adjutant Thomas A. H. Roy, M.S., 9th Battalion, from 20th September, 1872.

## PROVINCE OF NOVA SCOTIA.

*66th "Halifax" Battalion of Infantry.*

To be Adjutant, from 20th September last: Captain Hugh Macdonald Henry, V. B., vice Macdonald, promoted.

To be Captain, from 20th September last: Lieutenant George Anderson Black, M.S., vice Henry, appointed Adjutant.

*Cumberland Provisional Battalion.**No. 4 Company, Tidnish.*

To be Captain, from 20th September, 1872: Sylvanus Lowe, Esquire, Q.F.O., vice Bent Fullerton, out of limits, and who is hereby placed on the retired list, retaining rank.

To be lieutenant provisionally, from 20th September, 1872:

Bürpee P. Rockwell, Gentleman, vice Angus McGillvray, out of limits.

To be Ensign provisionally, from 28th September, 1872:

Winslow Chappel, Gentleman.

## LEAVE OF ABSENCE.

Major T. Warner Burt, 78th Battalion for six months from 8th instant, to proceed to Europe on private affairs.

## GRAND TRUNK RAILWAY BRIGADE.

*2nd Battalion Rifles.*

To be Adjutant with rank of Lieutenant:

Sergeant Major Lawrence Kelly, formerly of Her Majesty's 60th Rifles, vice Stephenson transferred to 1st Battalion.

Major William McKenzie and Captain William C. Nunn having served over five years as officers and left the Grand Trunk Railway employ, are hereby placed on the retired list, retaining their respective ranks.

No. 2.

CERTIFICATES, BOARDS OF EXAMINERS.

PROVINCE OF NEW BRUNSWICK.

*At St. John.*

FIRST CLASS—GUNNERY.

Captain William Gunard, No. 3 Battery, N.B. Brigade Garrison Artillery, having passed an examination has been granted a First Class Gunnery Certificate.

By Command of His Excellency the Governor General,

WALKER POWELL, Lt.-Colonel.

Deputy Adjutant-General of Militia  
Canada.