

I enclose the Report of the Inspector of Artillery for the Province of Ontario, reporting on the batteries I did not inspect in that Province. Those that I did inspect reflect credit upon him and their respective commanding officers, though I found officers with first-class certificates from the Ontario Gunnery School, unable to handle a Field Battery. The single-horsed gun, which is the establishment allowed, being inadequate to impart that instruction, the same remark also applies to officers who have passed through the Quebec Gunnery School, though the number of horses allowed by Government has been doubled by the purchase of horses by officers themselves, who are allowed forage on the proviso that the horses are used for the Demi Field Battery, which is thus kept up.

Lieut.-Colonel Irwin has been ordered to send in his Report of the Kingston Gunnery School direct to headquarters, so that it does not, accompany my Report, and I can make no comment upon it.

In the Maritime Provinces, Military Districts Nos. 8, 9 and 11, I inspected only the Newcastle Field Battery, as I was only directed to inspect the Field Batteries. A simultaneous inspection in another locality prevented my inspection of the Woodstock Field Battery, which was, however, very favorably reported upon by the Deputy Adjutant General of the District. I did not inspect the Halifax Field Battery, believing the results would not be commensurate with the cost to the public; as this battery has not complied with orders laid down for gun practice, I did not, therefore, forward their report to headquarters, but returned it to the Deputy Adjutant General for transmission if he thought fit. I received no report of the gun practice of the Brigades of Halifax Garrison Artillery, but I am unofficially informed by the officer commanding the Royal Artillery at Halifax, that spherical projectiles were fired from the muzzle loading rifle  $\frac{1}{4}$  rifles lately given by the Imperial Government for the use of the Militia. The rifling is probably injured, and the guns will require examination. Had it been necessary to fire S. B. projectiles from these guns, I contemplated the use of an inexpensive and effectual gas-check, which would prevent injury to the gun and would increase accuracy by imparting stable rotation even to small bore projectiles.

I have to request that the Deputy Adjutant General of Militia, Military District No. 9, be directed to discontinue such gun practice in future, and that the supply of ammunition to Artillery corps in that district be discontinued until assurance is given that the orders regulating annual gun practice will be complied with.

I did not inspect the New Brunswick Garrison Artillery for the reasons above specified. I received, through the Deputy Adjutant General of Military District No. 8 a report of the gun practice, which I forwarded to headquarters, having been signed by Lieut.-Colonel Underhill, the Adjutant of the brigade; it was doubtless carried on in accordance with General Orders on that head.

I have the honor to submit Reports in detail of the several batteries I inspected as shewn on the general parade statistics herewith.

#### *London Field Battery.*

I inspected the London Field Battery, commanded by Lieut.-Colonel J. Peters, on the 2nd July, and superintended gun practice on the 3rd. Lieutenants J. F. Williams, W. Heath, J. Hunt; Surgeon, V. A. Brown; Veterinary Surgeon, J. Tennet.

The camp was well pitched and regular; the physique of the battery is very fine; the horses powerful and in good condition; uniforms, harness, carriages and equipment in good order; foot rests should be added to the gun carriages, also range plates. There were no saddles on the off horses to carry gunners, in accordance with the new drill laid down. Pending fresh issue, the saddles of the waggon harness should be utilized for this purpose, as the waggons are not horsed.

The drill of the battery was steady and satisfactory, though there seems to have been scarcely time for the practice of the new simplified drill.

This remarkably fine battery reflects credit on the commanding officer who seems to have learnt his work, as most of the older officers commanding batteries have done, from the Royal Artillery when quartered in Canada. His senior subaltern served in the Royal Artillery. But the system of the Royal Artillery has changed of late, and the traditions that remain must in time die out, as there is no Field Battery of instruction at either of the Canadian Gunnery Schools.

This battery is the only one equipped with the new pattern wrought iron ammunition waggons.

The practice was on a land range; it was fair, as also the knowledge of ammunition.

The battery having affiliated with the Dominion Artillery Association, the following prizes were awarded:

Gunner Lee, silver cross guns and embroidered badge for highest score, and bronze cross guns for shortest time.

Gunner Bonsfield, Sergeants Summers, Williams and Taylor, badge of cross guns.

Drivers Clumpitt, J. Fromund, R. Egan and J. Owen, badges of cross whips. They maintain a band, which probably has a beneficial effect.

#### *Wellington Field Battery.*

I inspected this fine battery on the 29th and 30th, at camp near Guelph. Major A. H. McDonald, commanding; Lieutenants, D. McCrae and W. Nicoll; Surgeon, A. A. McDonald; Veterinary Surgeon, E. A. A. Grange.

The camp was well pitched and struck with the remarkable precision, characteristic of this battery, which is happy in the cultivated military instincts of its commander, as exemplified by the good order of the whole equipment, uniforms, harness, carriages, &c., steadiness of drill and evident discipline. The mounted sword exercise was also performed as I have not seen it done by any but regularly trained soldiers. I therefore presented to Major McDonald, for the two best swordsmen, badges of cross swords such as are given in the British army and at the Quebec Gunnery School for swordsmanship.

The physique of the men is fine; the horses I do not think I have seen surpassed.

I could not superintend gun practice, which had to be postponed, owing to the difficulty of obtaining a convenient range; but my questions on elementary gunnery and ammunition were answered in a manner which showed essentials had not been sacrificed to what might be considered secondary considerations, such as swordsmanship, which, however, the officers and men had acquired at their own expense from an instructor during leisure moments throughout the year, exclusive of paid drills. The battery has joined the Dominion Artillery Association, and the officer commanding carried out his gun practice at Toronto. The total score reported is the highest in the Dominion, and gains the Governor General's medal.

Capt. McCrae, silver cross guns and embroidered badge for highest score.

Gunner Ogg, badge of cross guns and bronze cross guns for shortest time.

Gunner Cameron, Capt. Nicoll and Sergeant McNaughton badges of cross guns.

A competition in driving drill, on a plan suggested by Lieut.-Col. Irwin, was carried out in my presence, and the following prizes awarded:

Corporal Rowe, Drivers Shearman, Reid and Henderson, badges of cross whips.

This battery maintains a band, which probably adds to the *esprit de corps* and keeps the men together.



### Hamilton Field Battery.

The inspection of the Hamilton Field Battery took place in camp near Brant-house, Burlington, Ont., on the 4th July, and gun practice on the lake shore on the 5th July. Capt. J. B. Smith, commanding; Lieut. W. F. McMahon; Surgeon, T. White; Veterinary Surgeon, A. Thompson.

At the inspection I was accompanied by the Brigade Major Lieut.-Colonel H. V. Villiers.

The camp, though beautifully situated, was perhaps in too close proximity to the festivities of the hotel, which would render discipline difficult.

The physique of the men and horses was fair.

The harness and equipment were in good order, though the presence of men of the band, doing duty as gunners and drivers, in Hussar tunics had a somewhat *bizarre* appearance; the band is no doubt a good one, and a credit to the battery.

It might be advisable for the Militia artillery to follow the example of "A" and "B" Batteries, whose bandsmen are of necessity efficient gunners, but cannot be detected from any distance when in the ranks.

The drill was not so good as last year, but fair, with the exception of maintaining distances, a somewhat common fault with Militia Field Batteries, and an important one to avoid from more than a mere drill point of view.

The gun practice was excellent and the knowledge of ammunition among the marksmen, who were mostly "A" Battery men I believe, good, though there was delay in preparation of shell. Capt. Smith himself was unsurpassed in his shooting. But though the battery has joined the Dominion Artillery Association, they were precluded by the rules from competing for His Excellency's medal, the target not being according to regulation. The following prizes were awarded:

Capt. Smith, silver cross guns and embroidered badge for highest score;  
bronze cross guns for shortest time.

Corp. Gair, Sergt. Holtrum, Bomb. Stevenson and Lieut. McMahon, badge of cross guns.

The driving competition was also carried out in my presence, and prizes awarded.

### Toronto Field Battery.

Commanded by Major J. Grey; Lieuts., S. Staughton and C. Johnson; Surgeon, J. S. Diamond; Veterinary Surgeon, A. Smith.

Inspected on 28th June at Camp Whitby, where the battery formed part of a force carrying on manoeuvres under the command of Lieut.-Col. W. S. Durie, D.A.G., with the Brigade Major, Lieut.-Col. R. B. Denison.

The Toronto Field Battery still maintain their character for smartness, well turned out equipment, steady drill and discipline, fine intelligent non-commissioned officers and men, and the horses of the powerful stamp common to the Field Artillery of Ontario. I was enabled to form an opinion of their discipline from seeing them, after a long march for several days, encamped near a town where the presence of a force of all arms drew a number of holiday-makers, and where there was every temptation to slackness, every man seemed a model of soldierly neatness and propriety. The commanding officer of this battery must be congratulated.

I superintended the practice, which was not as good as it might have been, owing, probably, to very unfavorable weather. The knowledge of ammunition was, as far as I could ascertain in the limited time at my disposal, good. Major Grey set the practical example of carrying away the target at the trial shot.

The battery having continued membership with the Dominion Artillery Association, the following prizes were awarded:

Wheeler Barlow, silver cross guns for highest score;

Driver Diamond, badge of cross guns;

Corporal Crews, badge and bronze cross guns, for shortest time;

Staff Sergt. McBrien, badge of cross guns;

Sergt. Woodrow, badge of cross guns;

Bombardier M. Harrison, Bombardier J. Harrison, Driver Fenwick, Driver J. Beard, badges of cross whips.

Extra prizes of whips for the best drivers in each subdivision were generously given by Lieut.-Col. Scoble, commanding Toronto Engineers, between which corps and the sister one of gunners there appears that *entente cordiale* beneficial to both these scientific services, the nature of whose duties should always render them, as in this case, mutually helpful.

It was the desire of some officers of the local force that the battery should fire away its annual practice ammunition, in endeavoring to blow up a mined fort, constructed with considerable labour and skill by the Toronto Engineers, under Lieut.-Col. Scoble. I could not sanction it, but did not think fit to give reasons to all concerned at the time, lest they should be argued over in my presence and that of officers and men under arms. I knew an order would simply be obeyed. I state my reasons now, to prevent disappointment in future under similar circumstances.

1st. The annual practice ammunition is authorized not for experiments, but for the instruction of the battery, the selection of marksmen, and the award of prizes. This could not have been carried out under the circumstances.

2nd. The danger of firing loaded shells where the spectators had crowded in too close proximity to the range, as well as the presence of men at work too close to the fort intended as a target.

3rd. The armament of a Field Battery is not intended, nor is it capable, except by the merest accident, of blowing up a properly constructed magazine, protected by an earthwork. The experiment, therefore, besides vitiating the practice and preventing the distribution of prizes would have ended in disappointment, and conveyed no military lesson commensurate with the loss of instructional practice as laid down. On a future occasion if the General Officer commanding considered it advisable to authorize ammunition for a well digested scheme of experimental practice, I would be an agreeable duty to carry it out.

The band of this battery is a very good one.

### The Shefford Field Battery.

The Shefford Field Battery, commanded by Lieut.-Col. Amyrauld, Lieuts. W. Neil, C. B. Martin, S. Maynes; Surgeon A. A. Gilmour, M.D.; Vet. Surgeon G. Vittie, were inspected on the 27th August, in a well situated camp on high ground near Granby. The gun drill was good, but the distances irregularly kept in manoeuvring. The knowledge of ammunition was not as good as formerly, the armament having been changed this year, and a good number of the men being recruits.

I superintended the practice on the 29th August. It was good considering the storm, during which it had to be carried on.

The horses were serviceable, the uniforms and equipment of this battery are kept in good order, but the habit of wearing a mixture of plain clothes and uniform, even off parade, is one of those seeming trifles that lead to important results, such as the relaxation of discipline. Country corps, though composed of the soldier stuff that wears well on service, is placed at the disadvantage of seldom seeing regular troops and noting the neatness and precision, even of apparel, that proclaims the disciplined soldier. The best remedy is a short course of instruction in the fortress of Quebec, where the eye, perhaps insensibly, educates the mind to these apparently trifling but important details.

Few batteries have taken more advantage of the Gunnery School than the Shefford, as far as the commanding officer and the non-commissioned officers are concerned; but I do not think the able and energetic commanding officer of this battery has been properly supported by his officers, none of whom have, as yet, qualified at the Gunnery School, though a large proportion of the non-commissioned officers have done so. Lieut. Neil, I am informed, intends to avail himself of a vacancy kept open for him.



Unfortunately the number of vacancies allowed at present for "short course" men being limited to ten for the Province of Quebec and the whole Artillery of the Maritime Provinces, necessitates the rejection of many applicants from this and other batteries, and nullifies, to a very great extent, the usefulness of the school. While appearing to censure the battery for want of smartness in uniform, it would be unjust not to mention that they have never been issued a sufficient number of belts for all the men, despite repeated applications. The commanding officer has gone to the expense of purchasing brown leather belts for the band, which does not tend to uniformity where the musicians must all be gunners, though it is creditable to the zeal of the officer in command. The band is progressing favourably, and will help to keep the men together. It is to be hoped the portion of the officers and men living within convenient distance of the Town Hall, where the guns are parked, will be applicants for the efficiency badges of the Dominion Artillery Association. Without these unpaid drills the efficiency badges which mark a certain number of them, Field Batteries cannot hope to be decently efficient. The effort will be heavier for country corps, but as they are physically the hardiest and finest men, it is to be hoped they will make the little sacrifice asked of those who wear an honored uniform. The following prizes were awarded:

Sergt. A. Bailey, silver cross guns and embroidered badge, for highest score.

Sergt. Ulric Neil, Gunner Byron Neil, Bom. C. Savage and Corp. Bouthillier badges of cross guns.

Sergt. R. Seale, bronze cross guns for shortest time.

#### *The Montreal Field Battery.*

Commanded by Lieut.-Col. A. A. Stevenson, Lieut. and Bt. Lieut.-Col. W. McGibbon, Lieut. O-wald, Lieut. Green, Surgeon G. E. Fenwick, Veterinary Surgeon McEachren, was inspected 30th July, 1877, in camp at Montreal. This arrangement was necessitated by the fact that the members of this battery being mostly engaged in business preclude their entire absence from the city. The drills were for the most part performed in the early morning and in the afternoon or evening.

The uniforms, accoutrements, harness and equipment of this battery were in perfect order; the commanding officer and his officers seem to spare neither themselves nor their purses where the efficiency and credit of the corps is concerned. They imported new busbies this year, and at their own expense a large proportion of the battery went to the Gunnery School Range at Quebec to carry out their annual gun practice, there being no convenient range at Montreal. The practice was remarkably accurate and shows the second highest score yet published in the Dominion. The non-commissioned officers and men are for the most part highly intelligent mechanics, a large proportion of whom obtained certificates at the Branch Gunnery School, formerly at Montreal, which it is to be hoped will be re-established, as the temporary substitute of sending a Sergeant Instructor from "B" Battery is inadequate to the requirements of the situation. Sergeant Instructor Lyndon has been selected for this duty, in which he has heretofore given satisfaction.

The horses were very powerful and in fine condition, which renders them less steady under fire, and contributed to the unsteady manoeuvre drill of the battery.

The commanding officer knows how to handle a battery, but the same cannot be said of all his sabaltern officers, two of whom have only lately been appointed; I trust they will qualify in this respect.

Twelve non-commissioned officers and men of this battery have availed themselves of the Gunnery School this year. The following prizes were awarded:—

Sergeant G. R. Pollock, silver cross guns and embroidered badge, for highest score.

Gunner Haycroft, Bom. A. O. Hasting, Bom. D. Reid and Corporal Kendal, badges of cross guns.

Corporal J. Marsh, bronze cross guns, for shortest time.

#### *Quebec Field Battery.*

Commanded by Lieut. Col. Baby; the following officers were present:—  
Captain Crawford Lindsay; Surgeon Burroughs, Vet. Surgeon Hall.

Capt. Taschereau, late Commanding Artillery Detachment at Fort Garry was attached for duty.

The battery was inspected by me at Camp Levis, on the 3rd September, 1877. Lieut.-Col. Duchesnay, D.A.G., Military District, No. 7 made his inspection at the same time. The physique of the men was good, the horses more serviceable than last year. The officer commanding reports that he found the advantage of the advice of a Veterinary Surgeon in the selection of horses.

The harness and equipments were in good order, but the new issue of uniform was not worn on the occasion; in consequence the battery did not present so favourable an appearance as it would otherwise have done.

The drill was steady and satisfactory, though there has not been time to acquire confidence in the new system of non-pivot drill, so much simplified by the absence of wagons.

The knowledge of ammunition was fair, great pains having been evidently taken by the officers in personally instructing their own men, no officer or Sergeant Instructor having been sent from the School of Gunnery.

The practice carried on at the Isle of Orleans range was not good, owing, I think, mainly to exceedingly bad and wet weather, and to the irregular manner in which the cartridges were made up. Noticing the uneven practice, I examined the cartridges being used, and found a visible difference in size; selecting some, I directed Captain Crawford Lindsay to have them weighed; he reported a difference of two and three ounces. I was not able to ascertain where these cartridges had been made up, and would recommend that in future the rule of the Royal Artillery be followed, *i. e.*, stamping the initial letter of the place of making up of each carriage, such as K for Kingston, Q for Quebec, and batteries would be wise to weigh their own cartridges before practice. In this case no blame could be attached to the battery using the cartridges as they were issued.

Several non-commissioned officers and men have lately taken advantage of the School of Gunnery in their midst. I regret being obliged to refuse many more, so as to equalize the vacancies among the many batteries applying.

By the energy of Lieut.-Col. Baby and Captain Crawford Lindsay a system of evening drills and lectures has been started this winter, which will do much to compensate for the refusal of applications to join the Gunnery School, necessitated by the small number at present sanctioned. On the whole this battery is to be congratulated on the efforts they are making.

The following prizes were awarded:—

Gunner E. Paradis, silver cross guns and embroidered badge for highest score, and bronze cross guns for shortest time.

Sergt. D. Allaire, Gunner A. Vezina, Sergts. Hamel and Bertrand, badges of cross guns.

Corps. Bordeleau and J. Petiteclaire, Drivers F. Charland and T. Drolet, badges of cross whips.

#### *Grosse Isle Garrison Battery,*

Commanded by Capt. F. Montizambert, was inspected on the 11th September, 1877.

The strength of this battery is unfortunately limited to 24, the number of employees of the Quarantine Department; but their efficiency is not to be measured by their limited number; they maintain the character given of them in my previous Report, as approaching the discipline of regular troops, from the fact of their being Government employees with their civil chief of the station as their commanding



officer, while at the same time a highly qualified instructor. They were inspected in marching order, manual and firing exercise, gun drill, and gun practice; the latter was excellent, as also their replies to questions shewing a very fair knowledge of gunnery. The officer commanding Royal Artillery at Halifax, happening to be present, expressed approval, and made the remark that they would compare favourably in drill and artillery intelligence with any body of auxilliary artillery in the Artillery District he formerly commanded in North Britain.

The practice was so good that the average score and figure of merit is higher than that any other Garrison Battery, and I believe will gain for them the Governor General's medal to the Dominion Artillery Association for smooth-bore garrison guns.

I trust that my previous recommendation that three 24-pounder guns will be sent them to replace one 18-pounder I reported unserviceable, and two iron 12-pounders, in which case the commanding officer will construct a fresh battery without cost to the Government. The transport of the guns and stores could be managed with but little expense, and the guns mounted by the men themselves.

The following Dominion Artillery Association prizes were awarded:—

Corp. C. Langlois, silver cross guns and embroidered badge for highest score, and bronze cross guns for shortest time.

Gunners A. Anderson and E. Jolicoeur, badge of cross guns.

I was not able to inspect the Gaspé Battery of Garrison Artillery in consequence of an inspection in the Eastern townships.

The battery is commanded by Major Slous, at present undergoing a long course of instruction.

The battery was inspected by the Brigade Major, Military District, No. 7, accompanied by Captain Oscar Prevost, Adjutant School of Gunnery, who also acted as range officer.

The following prizes were awarded:

Gunner J. Cass, silver cross guns and embroidered badge for highest score.

Gunners A. Boyle and L. Annel, badge of cross guns.

Gunner J. Coffin, bronze cross guns for shortest time.

#### *Newcastle Field Battery, New Brunswick.*

Commanded by Major R. B. Call; Lieuts. J. Mitchell, C. F. Bourne, W. A. Park; Surgeon, J. B. Freeman, M.D.

The physique of the men and horses is good. The guns, ammunition and carriages were in good order, but there are several deficiencies in the harness, accoutrements and uniform, in great measure due to losses and wear and tear, when the battery was called out for active service and kept embodied for some months at Bathurst. Long marches were made in the depth of winter. The deficiencies were reported at my last inspection with a request that they might be completed without falling as a heavy charge on the officer commanding the battery, in consideration of the service rendered to the Dominion. Major Call states that thirty waist belts marked deficient, are due to short issue, the strength of the original company being 40, which was changed into a battery of artillery and the strength raised to 70. In any case the unsightly appearance of soldiers, some without belts, others dressed partly in plain clothes, has a tendency to relax discipline.

The drill was steady and satisfactory, the knowledge of ammunition good, and the practice very good. This battery gaining the medal presented by the Dominion Artillery Association for the highest total score for Field Batteries armed with smooth-bore guns and howitzers.

The following prizes were awarded:—

Bom. H. Copp, silver cross guns and embroidered badge for highest score.

Gunners J. Osborne, W. Stewart, Bombr. J. Murray, Sergt. W. J. Miller, badge of cross guns.

Sergt. Major P. Wheeler, bronze cross guns for shortest time.

Drivers J. McMahon, J. Donson, F. Mahoney, T. Porter, badge of cross whips.

## GENERAL REMARKS.

### *Field Artillery.*

I am glad to be able to congratulate the Government on possessing a force of 14 Field Batteries, 60 rifled field guns and three batteries of 9-pounder and 24 pounder Howitzers, fairly equipped, manned and horsed; no mean item furnished by a colony for self defence. I am also glad to mark for the last two years a steady increase of zeal and efficiency, notwithstanding that commercial depression necessitated decreased estimates for military expenditure, which in turn necessitated a diminished number of horses. The system of reduction as applied to Field Batteries was, I think, as little harmful as possible in its results, by applying the reduction to the non-horsing of waggons, which in most batteries had no existence or were of no possible use at the time, not being fitted to carry rifled projectiles. The payment for horses consequently would have been sheer waste of money. I trust that now, however, the proper complement of six horses per gun will be sanctioned for the future, with three spare, making a total of 45 per battery as recommended, (page 186 and 187 of last years Report) to which, without going further into details, I would respectfully draw attention.

The improvement in Field Artillery efficiency is, I believe, in a great measure, due to the Dominion Artillery Association. To gain the hearty co-operation of the officers of a voluntary service is an important element of success, but no unaided voluntary effort can give or maintain a high standard of military instruction which the Gunnery Schools are supposed to give, but cannot without a Field Battery of instruction, which does not exist in Canada.

As before stated, the older officers commanding batteries of Field Artillery are living, in a military sense, on the rapidly changing system of the Royal Artillery, while the younger Artillery officers, fresh from the Gunnery Schools, cannot handle a Field Battery on any system.

### *Garrison Artillery.*

The Garrison Artillery I consider in a demoralized condition, for the reasons given (and others not stated) in page 187 of last year's Report, which have been intensified from the fact that their annual training depends on the chance of drawing a favourable number in the lottery by which the corps are chosen. This also militates against their joining the Dominion Artillery Association and paying subscriptions, of the advantages of which they may be deprived by drawing an unlucky number. If the drill of some Artillery corps must be restricted, I respectfully submit that, instead of drawing lots, those Garrison Artillery corps be selected for paid drills which have performed the greatest number of unpaid drills during the previous six months.

The Montreal Garrison Artillery are making great efforts to become efficient. I hope that it may no longer be considered necessary to extend the last year's system of selection by lot to the Artillery who have so much more to learn than Infantry corps.

The change of the regulation head-dress from busbies to helmets will leave a large quantity in the hands of the Army Clothing Department, as well as of the trade; it might be advisable to purchase a quantity at a reduced rate for Canadian Artillery. It is a suitable and handsome head-dress for this country, and to corps depending on voluntary enrolment an attractive uniform is a great aid.

The introduction of Sir William Palliser's comparatively inexpensive system of converting our old cannon into rifles in Canadian workshops would be a tangible and permanent means of giving efficiency to this important branch of the service in large towns where both the industry and the guns are most needed, and where the mechanics may be found to form enthusiastic gunners to man the guns they had made in defence of the city where they lived. There is no volunteer Garrison Artillery in the fortresses of Quebec and Kingston, where they are most essential, and



where there are the greatest facilities for their instruction afforded by the Gunnery Schools. Two batteries of Garrison Artillery have offered their services in Quebec, but the decision not to increase the number, the force probably prevented the acceptance of their services. I trust the same reasons may not hold good for the coming year.

#### Engineers.

I must refer to the last year's Report under this head, page 188, there being no change in the circumstances of the force that I am aware of.

#### Armament.

The Annual Reports of Boards of Survey do away with the necessity for the Inspector of Artillery sending in a detailed Report.

The ten  $\frac{3}{4}$ -pounder rifled guns, purchased on the recommendation of the General Officer commanding for the fortress of Quebec, have been mounted as far as the platforms are complete; all the platforms necessary are under construction. I trust the ten guns recommended for Kingston may be procured next year. The five  $\frac{3}{4}$ -pounder guns for St. John, New Brunswick have also been landed and are probably mounted. I would still recommend the addition of two 80 pounder guns on Partridge Island, St. John, and must continue to draw attention to the last part of the first paragraph under the head of "Armament," page 188 of last year's report, with reference to the deficient equipment of 7-inch breech-loading rifle guns.

The offer of Sir William Palliser to convert, on his principle, the old smooth-bore guns in Canadian workshops, at a cost not greater than that of importation, has, I am glad to say, been given a trial. Sir William has been given a 32-pounder gun which he generously proposes to convert at his own expense and present to the Dominion Artillery Association, with twenty-five rounds of ammunition and \$100 to be given in prizes for competition with his guns.

There are no less than 400 old guns capable of conversion. I trust that none of them may be sold, and that if the experiment proves successful a small sum may be set aside annually for the conversion of ten or twelve guns, thus gradually forming an inexpensive armament exactly suitable to the climate and requirements of the Militia of this country, who could then be relied upon to defend to the uttermost those earthworks at important strategic points which have become so marked a feature in late wars. No Canadian Plevna would, I believe, be ever yielded to starvation as long as Great Britain maintains her maritime supremacy.

But it would be advisable to purchase, probably at reduced cost, an adequate supply of the Snider rifles no longer used in the British service, and to commence, even on a small scale, the manufacture of small arm ammunition for those weapons, which will soon cease in the Imperial factories.

The manufacture of wooden garrison gun carriages by the artificers of "A" and "B" Batteries, I have shewn in previous correspondence, would not cost half the price paid for importing them, and would start a self-reliant system of supply and repair, without which we should be helpless in emergency. I believe I have the concurrence of the General Officer Commanding in expressing these views.

#### Fortifications.

The enceinte and Citadel of Quebec have undergone extensive repairs by the Board of Works during the past year. The Dalhousie bastion has been roofed with a wooden shed, somewhat similar to that on Richmond bastion, which is undoubtedly the cheapest and best means of preserving casemates from the extremes of this climate. The earth from the roof of the casemates of No. 2 and 3 forts at Levis has been removed with a view to stopping leaks. All the Levis forts are in fair order, and concrete platforms for the 7-inch breech-loading rifle guns are under construction. The magazines are dry.

#### Gunpowder, Tubes, Fuzes, &c.

The small supply of the last two items necessary for proof, was not received from the Store Department in sufficient time for proof this year.

#### PROOF of Gunpowder in Storekeeper's charge at Quebec, October, 1877.

Maker's Name.	No. of Lot.	Date of Manufacture.	Description of Grain.	No. of Barrels remaining.	1st.	2nd.	3rd.	Average 1877.	
Hall & Son.....	*905	1861	L. G.	None.	230	238	240	236	
Waltham Abbey..	788	1864	R. L. G.	44	270	280	265	271.06	Average '76, 273.01.

Lot No. 905 shews great deterioration, but as, I am informed on enquiry, there is no more of this lot on hand, the deterioration is of no importance; the only other lot examined, 788, shews a fair average.

#### Small Arms.

In inspecting the Snider rifles in charge of the Store Department, I have always found them clean and well cared for, except the important mistake of not keeping the snap-caps on the nipples, the consequence being that if the hammer is let down on the piston, a constant strain is kept on the special spring which in time will weaken it. If the arm is kept half cocked the strain is only transferred to the main spring. I have often brought this point to the notice of the Store Keepers in my official inspection without any result. Snider rifles are sometimes kept in the boxes for years after their arrival in this country; they should be placed in the racks for inspection with the snap-caps on each.

I have the honor to be, Sir,

Your obedient servant,

T. BLAND STRANGE, Lieut.-Colonel,

Inspector of Artillery and Warlike Stores.

#### REPORT OF THE INSPECTOR OF ARTILLERY, PROVINCE OF ONTARIO.

KINGSTON, ONT., December, 1877.

SIR,—I have the honor to report that during the past year I inspected the following Batteries of Artillery in this Province, viz.:—

Kingston Field Battery.  
 Gananoque " "  
 Ottawa " "  
 Durham " "  
 Welland Canal Field Battery.  
 Ottawa Brigade Garrison Artillery (four Batteries.)  
 Goderich Garrison Battery.  
 Collingwood " "  
 St. Catharines " "  
 Toronto " "  
 Trenton " "

I annex to this Report an Inspection State of the above mentioned Batteries.



I have the honor to submit the following detailed Report of the several inspections:—

*Gananoque Field Battery.*

Major McKenzie in command; Lieuts. Mitchell, Brittan, McCammon; Surgeon Merrick; Veterinary Surgeon Waldie.

Inspected at Camp Gananoque, 20th June, and a competitive gun practice on the following day.

Clothing, arms and accoutrements clean, and in good order; horses very fair average; harness clean and well put on, but not kept in very good order.

Inspected the battery at marching past, field manoeuvres, driving drill and standing gun drill, all very fairly performed, but the Nos. 1 were not as efficient as they ought to have been. The competitive gun practice was well carried out at a good land range near the camping ground, but the weather was unfavorable, and prevented a high score from being obtained.

*Ottawa Field Battery.*

Captain Stewart in command; Lieuts. Savage and Billings; Surgeon Bentley; Veterinary Surgeon Harris.

Inspected at Camp Ottawa, 22nd June, and at competitive gun practice 23rd.

Clothing, arms and accoutrements clean and in very good order; horses very good; harness in good order and well fitted.

Marching past, field manoeuvres and standing gun drill very well performed; but with regard to the two former, I have to report again that the subaltern officers are unable to give the necessary assistance to the commanding officer, or to instruct at all in these drills.

Driving competition very good.

The gun practice was carried out at a good land range about nine miles from Ottawa, and with very fair results; but owing unfortunately to a bush fire caused by the bursting of some shell in rear of the target, the practice was much delayed, and the result probably not so good as it otherwise might have been.

*Kingston Field Battery.*

Captain H. Wilmot in command; Lieut. J. Wilmot.

Inspected at Camp Kingston, 26th June, accompanied by the Deputy Adjutant-General, Military District No. 3.

Clothing, arms and accoutrements clean and in good order, but the issue of serge blouses appeared very unsatisfactory. Horses good; harness well fitted, but not so clean as it might have been.

Marching past and field manoeuvres were very well performed, and the standing gun drill and driving competition very satisfactory.

This battery carried out its competitive gun practice on 24th September, at a good land range about five miles from Kingston; the land being under cultivation could not be used during the summer, but the sixteen marksmen were then chosen.

The shooting was very good, and the consequent score very satisfactory. Sergt.-Major Clarke of the School of Gunnery acted as Instructor to this battery during its drill.

*Durham Field Battery,*

Capt. Graham in command; Lieuts. McLean, Brereton and Richardson; Surgeon Brent; Veterinary Surgeon Hinman.

Inspected at Camp Port Hope, 28th June.

Clothing, arms and accoutrements, clean and in good order, with a few exceptions; horses, small and in poor condition; harness, well fitted, but kept in bad order, iron work rusty and partly japped.

Marching past and field manoeuvres fairly done under the superintendence of the Drill Instructor, but the subaltern officers are unable to instruct their men.

Standing gun drill very good. Driving competition, tried for the first time in this battery, with indifferent results, owing to badly matched teams.

The competitive gun practice was carried out the same day at a very good land range near camp, and with very fair results.

Captain Graham was unable to appear at the inspection, having been injured by his horse falling with him the previous evening.

This battery has improved since my last inspection, and would, in my opinion, soon attain a considerable degree of efficiency were stricter rules of discipline enforced by the commanding officer, who should insist upon and set the example of attendance at all parades for instructional purposes on the part of the officers.

Corporal Abbott, of the School of Gunnery, acted as instructor to this battery during its drill.

Lieut.-Col. Worsley, Brigade Major, accompanied me in my inspection.

*Welland Canal Field Battery.*

Lieut. and Captain Frank King, in command; Lieut. Reaveley.

Inspected at Camp Port Colborne on 18th September, and at gun practice at the same place on the day following.

Clothing, arms and accoutrements, clean and in good order, but several deficiencies; horses good; harness clean and well fitted, but not well cared for in store. The harness bits were not provided with curb chains, a deficiency previously noted and reported, and steps should have been taken to remedy it. This battery performed most of its annual drill at camp at Port Robinson, its headquarters, marching to Port Colborne for target practice, which was carried out at a very good range on the lake shore; but this being the first year the battery has fired with the 9-pounder rifled guns, the competition was not as well carried out as it doubtless will be next year.

The gunners were fairly well instructed in standing gun drill, but deficient in a knowledge of ammunition. The ground at Port Colborne was not suitable for field manoeuvres. Major King, who commands the battery, was not present at my inspection. As this officer is unfortunately unable to take any active part in the drills or instruction of the battery, I consider it would greatly increase efficiency were the command transferred to Captain Frank King, who is very well qualified for the position, and the proper complement of subaltern officers appointed. As there is no drill shed at Port Robinson, nor any facility for voluntary drills, I am under the impression that were one or two subdivisions recruited at St. Catharines or Thorold, and the guns stationed there, with arrangements for evening drills occasionally during the year, a very great improvement in efficiency might be expected.

*Goderich Garrison Battery.*

Major Thomson in command; Lieut. Dixon, Inspected at Goderich, 12th Sept.

This battery has not performed any annual drill for three years, and in consequence, the men were nearly all recruits; with one or two exceptions they were well up to the standard size and height. Clothing and accoutrements clean and in good order; arms (long rifles) kept in bad order, many being very rusty. Nearly all the drill hours were employed at standing gun drill, which was in consequence very well performed; but no instruction had been given in manual or rifle exercises, and very little in squad or marching drill. The battery fired the regulated number of rounds at a floating target, from a 32-pounder gun; the practice was under my supervision, and according to the competitive system. The time was well kept and the firing good.



*Collingwood Garrison Battery.*

Major Hogg in command; Lieut. Stevens; Inspected at Collingwood 14th Sept. Very fine looking body of men, but nearly all recruits. Clothing in good order, and fairly clean; accoutrements clean with some exceptions. Manual exercise indifferent. Firing exercise had been very little practised. Standing gun drill by one detachment, very fair, but the remainder of the battery had not received much instruction. This battery joined the Artillery Association and performed its annual gun practice under my supervision, according to the regulations, floating target. The firing was very accurate and time well kept, but from want of proper appliances and previous instruction in ammunition the score could not be recorded for competition. I was accompanied in my inspection by Lieut.-Col. Denison, Brigade Major

*Ottawa Brigade Garrison Artillery.*

Inspected at Camp Ottawa, 29th June. For the purpose of annual drill this year the original brigade of seven batteries was formed into four batteries, encamped together; the whole being under command of Major Graham, in the absence of Lieut.-Col. Egleson.

No. 1 Battery, Capt. Evans; Lieut. Bell.

No. 2 Battery, Capt. Heron; Lieut. Coutlee.

No. 3 Battery, Lieut. Maingy; Lieut. Brough.

No. 4 Battery, Capt. Ryan; Lieut. Mara.

Capt. Russell, Adjutant.

The batteries had only completed two days' drill previously to my inspection. I was not favorably impressed with their appearance on parade, many men being apparently undersized, and the uniforms, arms and accoutrements in many instances badly kept and not so clean as they might have been. I inspected five squads at gun drill, under the direction of Staff Sergts. Bramah and Swaine, of the School of Gunnery. Only two of the officers appeared able to instruct in gun drill, and I had to suggest the advisability of all the other officers joining the squads to enable them to receive some instruction in their duties.

Owing to the very unfavorable state of the weather I was unable to complete my inspection in squad, company and rifle drills.

The want of a suitable range prevented the annual gun practice from being carried out.

*St. Catherine's Garrison Battery.*

Capt. Wiley in command; Lieut. Hunter, Inspected at St. Catherine's, 22nd November.

With three or four exceptions the men were well up to the standard.

Clothing, arms and accoutrements in good order and very clean.

The manual exercise was fairly well done, but the firing exercise was indifferent; squad and marching drill fair; gun drill, 18-pounder, on travelling carriage, good; but the men had received no instructions in a knowledge of ammunition and stores.

Owing to the lateness of the season and the unfavorable state of the weather and roads, the annual gun practice could not be performed. The same difficulty occurred last year, and it would be advisable to have the annual drill performed earlier in the season. Lieut.-Col. Villiers, Brigade Major, accompanied me at the inspection.

*Toronto Garrison Battery.*

Captain Gibson in command. Inspected at Toronto, 24th November. Two or three men below the proper standard—rest very good.

Clothing, arms and accoutrements very clean and in good order; manual exercise fair. No firing exercise practised.

Squad and marching drill, fair. Gun drill, good; and with picked squad of marksmen, very good. But no instruction had been given in ammunition.

Competitive gun practice could not be carried out at my inspection, owing to the unfavorable state of the weather.

The battery stores, &c., and one 18-pounder gun having been moved into the new drill shed, it is to be hoped that voluntary drills will be practised. Lieut.-Col. Denison, Brigade Major, accompanied me in my inspection.

*Trenton Garrison Battery.*

Captain Day in command; Lieuts. Bonter and Francis, absent; the former from inspection, the latter did not attend the drill at all this year.

With two or three exceptions the men were up to the standard, but with a large majority of recruits.

Clothing, arms, and accoutrements, clean and in fairly good order. A new issue of forage caps was expected but had not arrived.

Manual and firing exercise, fair. Squad and marching drill, indifferent. Only two gun squads had been instructed in standing gun drill. One non-commissioned officer had qualified at the School of Gunnery during the past year, and the battery is entirely dependent upon him for any instruction.

The general appearance and drill of the battery shows improvement on that presented last year, but there is still much to be desired.

## GENERAL REMARKS

## FIELD BATTERIES.

The general appearance and turn out of this Force has this year been very satisfactory. I have noticed many improvements since my last inspection, and am glad to remark that in several instances a large majority of the non-commissioned officers have qualified at the School of Gunnery, and the good effects of the instruction they have received are especially noticeable in the increased attention which has been paid to the minor but important details of fitting harness, &c., and to the instruction of the gunners in a knowledge of ammunition and equipment.

*Horses.*

The reduction in the number of horses allowed, is attended with many disadvantages. Only a few drivers can receive any instruction in their duties, and for the purposes of field manoeuvres and route marching four horses are not sufficient for each gun. I would, therefore, strongly recommend an increase of at least twelve horses, to provide for six horses for each gun; two for store cart, two for staff sergeants, and two spare.

*Equipment.*

The Field Batteries are now all armed with the 9-pounder muzzle loading rifled gun, and the old ammunition waggons have been all refitted to suit the new equipment, and are available for the storage of the reserve ammunition at the head quarters of each battery.

This alteration was effected at the Military Store at Kingston, by an artificer of "A" Battery.

I noticed many deficiencies in whips, spurs, curb chains, head collar chains, side reins, &c. These deficiencies should be reported by the officers commanding, and requisitions forwarded to replace them.



### Gun Practice.

The results of the competitive gun practice have been exceedingly satisfactory—a great deal of interest and emulation has been excited, with the most beneficial results, and in the five Field Batteries I have inspected, very good land ranges have been obtained within a reasonable distance.

### Driving

The driving competition has been very satisfactory, but as its results are not entirely conclusive, I would urge upon officers commanding the necessity of careful distribution beforehand of the credits for general smartness, clean harness and good behavior.

### GARRISON BATTERIES.

The results of my inspection this year have confirmed me in my opinion, previously expressed, that under the present system for the drill of these batteries, it is hopeless to expect from them any great degree of efficiency, either as Infantry or Artillery corps. I have frequently reported on the advisability of bring these corps into forts for proper instruction in Artillery exercises and discipline, and in a few instances where this has been done, the improvement in their efficiency has been most marked. Failing this, I have recommended the issue to them of 18-pounder guns on travelling carriages, for the purpose of enabling them to join Brigade camps, and receive continuous instruction during their twelve days' drill; several of the batteries have been provided with these guns, but have not had the opportunity of joining camps of instruction.

When it is remembered that Garrison Batteries are expected to be efficient not only as Infantry corps, but also as Artillerymen, and that the duties of both require careful instruction under especially trained instructors, it must be evident that twelve days, not necessarily consecutive, of three hours each at battery headquarters are not sufficient for this purpose; many of these batteries are also at small and comparatively remote stations where it has not been found practicable to assemble even one squad of men for voluntary drills; heating and lighting drill sheds being an expense not always provided for.

I have, therefore, now to recommend what I believe to be, under the present system, the only effectual means of providing an efficient Garrison Artillery force for the defence of the forts at Kingston and elsewhere, viz: The disbandment, as Artillery corps, of the Garrison Batteries at Goderich, Collingwood, Trenton, Port Hope, Cobourg and Napanee, and all but one battery at Ottawa, and the formation of a Garrison Artillery Brigade at Kingston.

At this station the means for Artillery instruction are always available, every facility can be afforded for the provision of trained instructors, and for the establishment of voluntary classes for drill, and the fort itself is the best possible place for the concentration of the corps at annual drill, and for their training on the guns which they would be expected to use were their services required.

In conclusion, I am glad to be able to report again most favourably on the zeal and *esprit de corps* almost without exception, shown by the officers and men of the batteries of Artillery in this Province; but I would urge upon those officers who are deficient in a knowledge of their duties, the abandonment of the feeling which seems to prevail on their part, that it is *infra dig* to fall in with their men when being drilled by the non-commissioned officer who is acting as instructor; apart from their own personal attendance at the School of Gunnery, there does not appear to be any other means open to them for acquiring a knowledge of their duties, without which they must remain quite unsuited for their position.

I have the honor to be, Sir

Your obedient servant,

D. T. IRWIN, Lieut.-Colonel,  
Inspector of Artillery.

The Adjutant General of Militia,  
Ottawa

### INSPECTION STATE, ARTILLERY, ONTARIO.

	Present at Inspection.				1st or 2nd Class, or Attendance, Gunnery School Certificates.				Military School Artillery Certificates.	Recruits.
	Officers.	N.-O. Officers and Gunners.	Horses.		Officers.	N.-O. Officers and Gunners.	Attend- ance.			
Field Battery Establishment.....	6	74	28							
Kingston Field Battery.....	2	59	28			6	6	1	23	
Ottawa do .....	5	71	28			4	9		13	
Gananoque do .....	6	73	28		4		6		20	
Durham do .....	5	76	28		2	5	0		15	
Welland Canal Field Battery.....	2	54	28		1	3	3	1	19	
Garrison Battery Establishment.....	3	42								
Ottawa Brigade Gar- rison Artillery. { No. 1 Battery	2	35				1			9	
{ No. 2 do	2	34				1	5		8	
{ No. 3 do	2	34							6	
{ No. 4 do	2	35				1			(?)	
Toronto Garrison Battery.....	1	41			1	2	1		26	
Trenton do .....	1	42				1			26	
St. Catharines do .....	2	33			1	1	1		10	
Collingwood do .....	2	39				1	1		26	
Goderich do .....	2	34			1	3	4		30	

D. T. IRWIN, Lieut.-Colonel,  
Inspector of Artillery.



## APPENDIX No. 4.

## REPORT ON "A" BATTERY SCHOOL OF GUNNERY.

KINGSTON, ONT., 31st December, 1877.

SIR.—I have the honor to report that during the past year seven officers and 117 non-commissioned officers and men joined this School.

Of this number six officers and 111 non-commissioned officers and men joined for the three months' short course of instruction—one officer and 17 non-commissioned officers and men were retained for a further service of twelve months. One officer joined the Staff of the School of Gunnery and 11 non-commissioned officers and men were enlisted in "A" Battery for three years continuous service.

The number joining from each battery in the Province will be seen on reference to the subjoined list, in which for convenience of reference I have included the numbers for the years 1875 and 1876.

Batteries.	1875.			1876.			1877.		
	Officers.	N.C. Officers and men.	Total.	Officers.	N.C. Officers and men.	Total.	Officers.	N.C. Officers and men.	Total.
London Field Battery.....				1	8	9		8	8
Welland Canal Field Battery.....		3	3		1	1		2	2
Hamilton Field Battery.....		13	13		6	6	1	8	9
Wellington do.....		7	7		12	12		15	15
Toronto do.....		15	15		14	14		15	15
Durham do.....		3	3		2	2		4	4
Kingston do.....		21	21		24	24		17	17
Gananoque do.....		1	3		1	1		4	4
Ottawa do.....		3	3		9	9		8	8
Winnipeg do.....		1	1						
Woodstock do.....		1	1	1		1			
"A" Battery.....		49	49		28	28	1	4	4
Collingwood Garrison Battery.....		4	4		2	2		1	2
Sarnia do.....		4	4				2		2
Goderich do.....		1	1		2	2		3	3
St. Catharines do.....		7	7						
Toronto do.....	1	4	5	1	4	5		1	1
Port Hope do.....					4	4		5	5
Trenton do.....								1	1
Cobourg do.....		2	2		1	1		2	2
Napanee do.....		1	1		1	1		5	5
Ottawa Brigade Garrison Artillery.....		11	11		21	21	1	10	11
New Brunswick do.....	1	3	4		4	4	2		2
13th Battalion.....				1		1			
14th do P. W. O. Rifles.....									
47th do.....							2		2
Governor-General's Foot Guards.....				1		1			
do Body do.....				1		1			
4th Regiment Cavalry.....				1		1			
Provisional Battalion, Fort Garry.....				1		1		1	1
Engineers, Toronto.....							1		1
Total.....	4	157	161	9	144	153	7	117	124

The following certificates have been issued during the last three years:

	1875.				1876.				1877.				Total.	
	Long Course.		Short Course.		Long Course.		Short Course.		Long Course.		Short Course.			
			1st Class.	2nd Class.			1st Class.	2nd Class.			1st Class.	2nd Class.		
	1st Class.	2nd Class.			1st Class.	2nd Class.			1st Class.	2nd Class.				
Officers.....	2	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13	
Non-commissioned officers and men.....	.....	13	17	.....	.....	22	32	.....	.....	.....	19	27	46	
Total.....	2	16	17	.....	.....	24	32	.....	.....	.....	1	31	27	59



Upon reference to the foregoing statement it will be seen that a greater number than usual of officers, non-commissioned officers and men have, during the past year, successfully passed the examination for short course certificates.

1. Applications for admission to the Short Course have been constant during the whole year, but from the fact, previously reported, that a considerable number of those who have attended, and in some cases taken certificates, do not turn out with their batteries for annual drill, it is evident that the captains of batteries either do not take sufficient care in the selection of those whom they recommend, or do not care to enforce their attendance at drill.

2. As there are still a considerable number of Artillery officers in the Province who have not qualified at any Military School, and are unable to instruct their men in Artillery exercises, I would recommend placing a limit upon the tenure of their appointments conditional upon qualification.

3. A supply of suitable furniture for Short Course officers' quarters has been received, so that officers are not now put to any unavoidable expense upon joining.

4. It was not found advisable to keep up the School of Gunnery Rifle Association this year, but each non-commissioned officer and man fired 40 rounds at the regulation distances, and under careful supervision. Money prizes from the canteen fund were given for the best scores at each range and for the aggregate, and the shooting was very good. Total value of prizes was \$40.

5. The annual summer camp for a week in August was formed on the lake shore. Instruction in camp duties, &c., was carried on and an opportunity afforded for the annual athletic sports, swimming races, and various mounted competitions. Money prizes, \$20, and an extra camp allowance for messing, \$100, was provided out of the canteen funds.

6. During the summer the officers, non-commissioned officers and men of "A" Battery were instructed in the use and formation of barrel-rafts, raft and spar bridges.

7. A new range of stabling has been erected within the Barrack enclosure and has been occupied since last month.

8. I have again to repeat my former recommendations as to the increase in the Field Battery establishment of horses, without a larger number than at present it is impossible to carry out proper instructions in Field Battery drills; and indeed the numerous and necessary duties and fatigues, including the daily guard at Fort Henry as well as at the school itself, to be performed by all ranks, render an addition to the present establishment of the Battery very desirable.

9. The frequent necessary repairs to guns, carriages, equipment and harness, &c., have all been efficiently carried out by the battery artificers as well as numerous small repairs to buildings, &c. A skilled artificer has been employed for a considerable time in making the necessary alterations in all the old pattern ammunition waggons of the Field Batteries of this Province, to suit the new equipment, and, in view of the economy and efficiency with which repairs to Artillery material can be thus executed, the extension of this system to all similar work to be performed is strongly recommended.

10. A small detachment of one non-commissioned officer and four men continues to be stationed at Old Fort, Toronto. It was at one time hoped that this detachment might form the nucleus of a branch Gunnery School, but from various reasons this has been found impracticable, and, as the duties of the men are confined to providing two caretakers, and giving occasional assistance to the Storekeeper there in moving stores, &c., I would recommend their withdrawal, as the services of every available man are required here to carry on the duties and courses of instruction effectually.

11. I am happy to be able to report that the general conduct, zeal and ability of all ranks has during the past year been extremely satisfactory, and that the School is at present provided with a very efficient body of instructors.

I have the honor to be, Sir,

Your obedient servant,

D. T. IRWIN, Lieut.-Colonel.  
Commandant, School of Gunnery.

The Adjutant-General of Militia,  
Ottawa.

## REPORT ON "B" BATTERY, SCHOOL OF GUNNERY.

CITADEL, QUEBEC, 31st December, 1877.

SIR.—During the year ending 31st December, 1877, 13 officers and 210 non-commissioned officers and men joined for instruction. Of this number the officers were as follows:—

Officers	{ Artillery }	Short Course, 2.
		Long do 2.
	{ Cavalry }	Short Course, 1.
		Long do 0.
	{ Infantry }	Short Course, 6.
		Long do 2.

Of the above, 42 were non-commissioned officers, gunners and drivers from various Artillery Militia Corps in Quebec and the Maritime Provinces. In addition 119 non-commissioned officers and men re-engaged. The officers of the New Brunswick Artillery have been permitted to select the Kingston Gunnery School, which they seem to prefer.

Appended are Returns of certificates granted, shewing subjects of instruction and results of examination.

A. Garrison Field Artillery and Infantry officers.

B. Field Artillery and Cavalry officers.

C. Garrison Artillery non-commissioned officers and gunners.

D. Field Artillery non-commissioned officers, gunners and drivers.

E. Return of Examination, Garrison Artillery.

F. Return of Examination, Field Artillery.

I will not reiterate the recommendation made in my Annual Reports for the past five years. Any increased expenditure was scarcely to be expected during the past year of commercial depression, but I trust due consideration will this year be given to the recommendations on pages 189 and 200 in last year's report, especially as the proposed reduction of pay for rank and file would enable an increase to be made in numbers without any appreciable increase of expenditure.

I have the honor to be, Sir,

T. BLAND STRANGE, Lieut.-Colonel,

Commandant, School of Gunnery, Quebec.

To the Adjutant-General of Militia,

Ottawa.



[A.]

RETURN of Gunnery Certificates granted at "B" Battery School of

## GUNNERY

Garrison, Field Artillery and Infantry Officers'

CORPS AND RANK.	NAMES.	SUBJECTS.—WRITTEN.									
		Gunnery.		Artillery Material.	Shifting and Working Ordnance.	Fortification.	Surveying.		Tactics and Strategy.		Military Law, &c.
		Obligatory.	Voluntary.				Voluntary.	Range Finding.	Obligatory.	Voluntary.	
		500	300	800	400	400	400	100	400	200	300
Kamouraska Provisional Batt., Capt. and Bt.-Major.....	A. Fraser.....	370	.....	512	.....	200	250	.....	277	.....	150
do Lieutenant.....	G. E. Taché .....	250	.....	473	290	190	170	.....	217	150	220
Lieut., Halifax Field Battery.....	W. Imlah.....	500	250	780	400	400	400	75	393	190	279
Capt., Summerside Battery G.A.....	T. C. Price.....	470	.....	560	305	220	430	.....	277	.....	150
Lient., Lanark Militia....	C. P. Dean .....	440	.....	416	280	305	.....	.....	316	.....	.....
Capt., 3rd Victoria Rifles .....	H. B. Moore .....	480	.....	690	320	360	400	90	380	192	270
Major, 1st Prince of Wales' Rifles .....	S. W. Hatton.....	400	.....	594	320	200	.....	90	300	.....	198
Capt., 65th Batt. Mount Royal Rifles.....	P. O. J. Hebert...	430	.....	464	220	160	.....	.....	308	.....	204
Major, 6th Fusiliers.....	S. David .....	175	.....	500	150	.....	.....	.....	.....	.....	150

Gunnery, Quebec, during the Year ending 31st December, 1877.

## SCHOOL, QUEBEC.

Short and Long Course Examination Return.

SUBJECTS.—PRACTICAL.														REMARKS.												
Total Theory.	Riding and Sword Drill.		Field Gun Drill.		Company Drill.		Garrison Gun Drill.		Mortar Drill.		7-inch B.L.R. Gun Drill.		Gyn Drill.					Sling Waggon.		Shifting Ordnance, including Knotting and Lashing.		Riding and Sword Drill.		Regimental Duty.		Total Practical.
	150	150	100	150	50	200	60	50	200	150	300		T.	P.		Qualifying Decimal, 5.										
1,759	75	90	90	90	.....	.....	.....	.....	120	.....	.....	465	53	66	1st..	Short Course.										
1,960	90	120	90	120	.....	160	.....	.....	140	.....	.....	720	56	80	1st..	Long Course.										
3,667	90	150	50	100	40	100	30	25	100	Performed by all.	.....	635	96	64	1st..	do										
2,412	.....	.....	50	120	45	180	36	40	160		.....	631	73	59	1st..	Short Course.										
1,757	.....	90	90	120	50	180	54	.....	160		.....	744	53	70	1st..	do										
3,182	130	120	100	120	40	160	54	40	140		300	1,214	10	86	1st..	do										
2,102	130	120	100	120	40	140	54	40	140		300	1,184	72	83	1st..	do										
1,786	.....	50	90	105	40	140	54	40	120	300	939	61	66	1st..	do											
975	.....	40	90	105	35	100	20	20	100	300	810	33	57	2nd.	do											

T. B. STRANGE, Lieut.-Col.,  
Commandant, School of Gunnery, Quebec.



[B.]

## GUNNERY

Field Artillery and Cavalry Officers'

CORPS AND RANK.	NAME.	SUBJECTS.—WRITTEN.									
		Gunnery		Artillery Material.	Moving and Working Ordnance.	Fortification.	Surveying.	Tactics and Strategy		Military Law, &c.	Interior Economy.
		Obligatory.	Voluntary.					Range Finding, and use of Sextant.	Voluntary.		
		500	300	400	400	400	100	400	400	200	300
8th Cav'lry, N.B., Cornet .....	R. Pennefather.....	200	.....	280	100	400	100	300	400	100	270

## SCHOOL, QUEBEC.

Short Course Examination Return.

SUBJECTS.—PRACTICAL.											REMARKS.		
Total Theory.	Foot Drill.	Field Gun Drill.	Harness and Stable Duty.	Riding.	Field Battery Movements.	Sword Drill.	Knotting and Lashing.	Regimental Duty.	Total Practical.	Decimal.			
	50	150	50	100	50	50	50	300		T.	P.		
2150	40	130	40	90	20	50	.....	300	670	·86	·83	1st.. Short Course.	
											Qualifying Decimal, 5.		

T. B. STRANGE, Lieut.-Col.,  
Commandant, School of Gunnery, Quebec.



## "B" BATTERY SCHOOL OF GUNNERY, QUEBEC.

RETURN of Garrison Artillery Gunnery Certificates granted during the Year ending 31st December, 1877.  
Non-commissioned Officers' and Gunners' Examination Return—Short Course.

Corps.	Rank.	Names.	Subjects—PRACTICAL.						Total.	Decimal.	Class of Certificate granted.	REMARKS.			
			Gunnery.	Artillery Material.	Shifting and Work- ing Ordnance.	Small Arm and Squad Drill.	Garrison Gun Drill.	Mortar Drill.					7-inch B. L. R. Gun Drill.	Gyn Drill.	Sling Wagon.
			350	300	200	50	150	50	200	60	50	50	200	.....	Qualifying Decimal, 5.
"B" Battery.	Corporal	O. Callaghan.	235	102	90	30	105	25	140	48	30	35	35	.58	As no special certificates
do	Bombardier	W. Jordan.	144	123	114	30	90	30	160	36	30	30	30	.51	have been sanctioned for
do	do	C. F. Jackson	175	153	90	25	105	45	140	30	30	30	30	.51	officers, and as it is not
do	Gunner	J. Mullarkey.	287	102	114	33	105	25	100	30	30	25	25	.55	possible, nor advisable
do	do	J. Hannigan.	238	156	110	40	75	35	140	36	30	30	30	.59	if possible, for those
do	do	O. Loscombe.	249	150	88	30	90	25	100	30	30	25	25	.53	going through a non-
do	do	A. Dufresne	319	180	128	28	90	25	120	36	30	25	25	.63	commissioned officer's or
do	do	J. Bellenger	245	189	134	25	90	30	160	42	30	35	35	.951	gunner's course to qua-
do	do	O. Petit.	224	228	142	30	90	35	140	30	30	30	30	.950	lify as officers, first-class
do	do	A. St. Pierre.	200	180	118	30	90	30	100	30	25	30	30	.987	certificates have of ne-
do	do	T. O'Neil.	442	165	110	45	90	40	140	36	35	30	35	.833	cessity been restricted to
do	do	T. Enright.	175	180	86	30	90	40	140	36	30	35	35	.57	those who go through
do	do	J. Logny.	102	180	72	33	75	30	100	30	25	25	25	.63	the officers' course of
do	do	H. Redelix.	308	192	134	30	90	40	160	42	40	30	30	.58	theory and learn the
do	do	A. McGuinness.	259	156	100	30	90	35	140	30	30	25	25	.71	duties as such.
do	do	C. Cuskelly.	165	186	120	35	90	35	140	42	35	30	30	.60	
do	do	E. T. Smith.	333	228	136	25	105	45	180	48	40	35	35	.79	
do	do	T. Paterson.	319	180	160	45	120	45	180	48	40	35	35	.79	
do	do	J. Sloane.	326	231	170	30	90	40	160	48	35	33	33	.78	
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do	do	J. Gordon.	158	150	110	40	105	40	140	36	35	30	2nd.
do	do	E. Genereux.	175	222	150	25	75	25	160	36	35	25	2nd.
Montreal Garrison Artillery.	Corporal	G. C. N. Mondelet.	158	243	18	25	105	35	100	36	35	25	2nd.
Quebec Field Battery.	Bombardier	A. Leray.	175	153	90	25	105	45	140	36	35	25	2nd.
No. 7 Battery, N. B. Brigade.	do	do	140	186	128	25	120	40	143	36	35	30	2nd.
Gar. Artillery.	do	do	221	189	134	25	105	40	140	36	35	25	2nd.
"B" Battery.	do	do	217	204	116	30	105	40	120	42	30	25	2nd.
do	do	do	248	153	118	30	105	45	160	42	30	25	2nd.
do	do	do	259	156	112	30	105	45	120	42	25	25	2nd.
do	do	do	234	183	56	30	90	35	100	42	30	25	2nd.
do	do	do	189	183	98	30	105	30	120	42	30	25	2nd.
do	do	do	161	198	124	30	90	40	100	36	25	25	2nd.
do	do	do	241	153	104	30	105	35	120	36	30	25	2nd.
do	do	do	164	186	110	30	75	25	100	30	25	20	2nd.
do	do	do	116	168	110	25	75	20	140	42	25	20	2nd.
do	do	do	140	171	104	25	75	30	140	42	55	25	2nd.
do	do	do	101	159	106	30	90	20	160	42	30	20	2nd.
			743										2nd.
			832										2nd.
			684										2nd.
			733										2nd.
			880										2nd.
			950										2nd.
			1049										2nd.
			1096										2nd.
			1104										2nd.
			965										2nd.
			972										2nd.
			949										2nd.
			999										2nd.
			865										2nd.
			841										2nd.
			917										2nd.
			878										2nd.

T. B. STRANGE, Lieut.-Colonel,  
Commandant, School of Gunnery, Quebec.



[D.]  
"B" BATTERY SCHOOL GUNNERY, QUEBEC.

RETURN of Field Artillery Gunnery Certificates granted during the Year ending 31st December, 1877.  
Non-commissioned Officers' and Gunners' Examination Return, Short Course.

CORPS.	RANK.	NAMES.	SUBJECTS.—WRITTEN.			SUBJECTS.—PRACTICAL.								Total.	Decimal.	Class of Certificate.	REMARKS.
			Gunnery.	Artillery Material.	Moving, Working Ordnance, Harnessing, &c.	Foot Drill.	Field Gun Drill.	Harness and Stable Duty.	Riding & Driving.	Field Battery Movements.	Sword Drill.	Shifting Ordnance, including Knotting and Lashing.	Regimental Duty.				
			350	200	200	50	150	50	200	60	50	200	200	.....	.....	Qualifying Decimal, 5.	
"B" Battery.....	Bombardier..	E. Bradley .....	210	150	90	25	135	.....	180	.....	45	180	Performed by all.	1,015	.67	The remarks on Return of Garrison Artillery Certificates apply here also. No First Class Certificates can be given under the present arrangement, which classes all ranks together for certificates; the requirements of officers and rank and file are different.	
do .....	Driver .....	J. Arthurs .....	196	150	74	25	120	.....	140	.....	35	120		860	.57	2nd.	
do .....	Bombardier..	W. Kerley .....	210	240	180	45	135	.....	180	.....	45	180		795	.79	2nd.	
do .....	Driver .....	J. Smith .....	144	150	100	40	120	.....	140	.....	30	120		594	.59	2nd.	
do .....	do .....	A. McPherson .....	175	150	100	25	105	.....	160	.....	35	120		620	.62	2nd.	
do .....	do .....	P. Flynn.....	175	156	60	30	135	16	140	.....	40	35	796	.56	2nd.		
do .....	do .....	N. Hutchinson.....	280	174	82	45	90	20	140	.....	40	35	906	.64	2nd.		
do .....	Gnr. & Drvr.	G. Blais .....	245	150	100	40	105	45	180	42	40	35	1,162	.70	2nd.		
Wellington Field Battery.....	Driver .....	F. Day .....	210	210	120	30	120	40	140	.....	30	.....	1,060	.53	2nd.		
Montreal Field Battery .....	do .....	W. McGraw .....	175	150	100	25	75	.....	.....	.....	.....	.....	525	.50	2nd.		
do .....	do .....	G. C. Bennett.....	147	144	70	35	105	40	140	.....	30	.....	871	.56	2nd.		
do .....	Gunner.....	A. Raines.....	175	90	120	25	90	35	.....	.....	30	.....	725	.49	2nd.		
do .....	do .....	S. McGraw .....	280	150	80	30	105	25	.....	.....	35	.....	815	.57	2nd.		

do	do	J. L. De Martigny	210	180	60	35	90	40	100	30	160	160	200
do	do	W. Freeman	175	150	80	35	90	30	140	30	160	160	200
do	Gnr. & Drvr.	P. V. Thom	210	180	80	25	120	35	120	24	35	160	200
Quebec Battery	Driver	O. Demers	109	132	40	25	120	40	100	30	160	160	200
do	do												
Sheffield Field Battery	Sergeant	W. H. Wetherbee	259	222	132	50	135	130	130	160	160	160	200
do	Corporal	H. L. Strange	231	192	112	50	135	160	160	160	160	160	200
do	Bombardier	P. B. Martin	140	177	108	50	120	130	130	35	100	100	160
do	Gunner	S. Butterworth	200	171	86	25	120	140	140	35	100	100	160
do	do	R. Seale	140	150	84	25	90	120	120	35	100	100	160
do	Driver	S. Marion	115	120	102	50	120	140	140	35	100	100	160
do	do	C. C. Duchesneau	130	132	92	50	105	130	130	160	160	160	200
Newcastle, N.B., Field Battery	Corporal	R. L. Maltby	221	186	114	25	120	160	160	160	160	160	200
do	do	T. Duffy	165	210	126	35	90	120	120	180	180	180	200

T. B. STRANGE, Lieut.-Col.,  
Commandant, School of Gunnery.



RETURN of Examinations of Garrison Artillery Non-Commissioned Officers and Men, held at the Guntery School  
Quebec, during the Year ending 31st December, 1877.

CORPS.	RANK.	NAMES.	SUBJECTS.—PRACTICAL.										Total.	Decimal.	Certificates granted.	REMARKS.
			SUBJECTS.—WRITTEN.		Shifting and Working Ordnance.	Small Arm and Squad Drill.	Garrison Gun Drill.	Mortar Drill.	7-inch B.L.R. Gun Drill.	Gyn Drill.	Sling Wagon.	Shifting Ordnance, including Knotting and Lashing.				
		Gunners.	Artillery Material.	300									200	50	150	50
"B" Battery.	Corporal	O. Callaghan.	235	102	90	30	105	25	140	48	30	140	945	.58	2nd.	
	do	Bombardier.	144	123	114	30	90	30	160	36	30	120	877	.54	2nd.	
	do	A. Leray	305	228	126	25	75	35	140	36	25	120	1,115	.69	2nd.	
	do	C. F. Jackson	175	153	90	25	105	45	140	30	30	100	733	.51	2nd.	
	do	J. Mullarkey	287	102	114	33	105	25	100	30	30	100	896	.55	2nd.	
	do	J. Hannifan	238	156	110	40	75	35	140	36	30	120	950	.59	2nd.	
	do	C. Loscombe.	249	150	88	30	90	25	100	36	30	100	862	.53	2nd.	
	do	A. Dufresne.	319	180	128	28	90	25	120	36	30	100	1,026	.63	2nd.	
	do	O. Stevens.	105	54	60	35	90	35	120	42	30	120	661	.41	2nd.	
	do	J. Bellenger	245	189	134	25	90	30	160	42	30	140	1,055	.65	2nd.	
	do	P. Paridis.	144	117	96	25	75	35	80	30	30	80	672	.41	2nd.	
	do	O. Petit	224	228	142	30	90	35	140	30	30	140	1,092	.67	2nd.	
	do	A. St. Pierre.	200	180	118	30	90	30	100	30	25	120	923	.57	2nd.	
	do	T. O'Neill.	242	165	110	45	90	40	140	36	35	120	1,023	.63	2nd.	
	do	T. Enright	175	180	86	30	90	40	140	36	30	140	947	.58	2nd.	
	do	J. Logny	102	180	72	33	75	30	100	30	25	100	827	.50	2nd.	
do	H. Redelix	308	192	134	30	90	40	160	42	40	120	1,156	.71	2nd.		
do	A. McGuinness.	259	156	100	30	90	35	140	30	30	100	970	.60	2nd.		
do	C. Quiskelly.	165	186	120	35	90	35	140	42	35	120	968	.60	2nd.		
do	E. T. Smith	333	228	136	25	105	45	180	48	40	140	1,280	.79	2nd.		
do	T. Paterson	319	180	160	45	120	45	180	48	40	140	1,277	.79	2nd.		
do	J. Sloane.	326	231	170	30	90	40	160	48	35	140	1,270	.78	2nd.		

do	do	E. Genetoux	175	222	150	25	75	25	160	30	30	100	2nd.
do	do	J. Gordon	158	150	110	40	105	40	140	30	30	100	2nd.
do	do	A. Powell	158	66	40	30	75	40	140	30	30	100	2nd.
do	do	T. Cleary	22	15	25	25	75	25	100	30	30	100	2nd.
do	do	J. B. Fournier	27	16	25	25	75	30	100	30	30	100	2nd.
do	do	J. Smith	12	14	18	35	90	30	100	30	30	100	2nd.
do	do	J. L. G. McKinnon	217	204	116	30	105	40	120	42	30	120	2nd.
do	do	R. Logan	248	153	118	30	105	45	160	42	30	120	2nd.
do	do	J. McKay	259	156	112	30	105	45	120	42	25	140	2nd.
do	do	J. A. Keane	234	183	98	30	90	35	100	42	30	120	2nd.
do	do	W. G. Smith	189	183	98	30	105	30	120	42	30	120	2nd.
do	do	A. Côté	161	198	124	30	90	40	100	36	25	120	2nd.
do	do	P. Mahoney	241	153	104	30	105	35	120	36	30	120	2nd.
do	do	G. P. Labat	140	171	76	25	75	20	100	30	20	100	2nd.
do	do	D. Ireland	164	186	110	30	75	25	100	30	25	100	2nd.
do	do	H. Brown	116	168	110	25	75	20	140	42	25	100	2nd.
do	do	H. Garnier	144	177	90	25	75	20	80	30	20	100	2nd.
do	do	J. McDonald	140	171	104	25	75	30	140	42	25	140	2nd.
do	do	A. Dorion	101	159	106	30	90	20	160	42	30	120	2nd.
do	do	C. Grondin	129	162	86	25	75	20	100	24	25	120	2nd.
Montreal Garrison Artillery.	Corporal	G. C. Mondelet	158	243	18	25	105	35	100	30	30	100	2nd.
Quebec Battery No. 7 Battery, New Brunswick Garrison Artillery.	Bombardier	A. Leray	305	228	126	25	75	35	140	36	25	120	2nd.
do	do	D. Allen	140	186	128	25	120	40	140	36	35	130	2nd.
do	do	J. McDonald	221	189	134	25	105	40	140	36	35	100	2nd.
do	do	A. McArthur	129	162	86	25	75	20	100	24	25	120	2nd.

T. B. STRANGE, Lieut.-Colonel,  
Commandant, School of Gunnery, Quebec.



RETURN of Examinations of Field Artillery Non-Commissioned Officers and Men held, at the Gunnery School, Quebec, during the Year ending 31st December, 1877.

CORPS.	RANK.	NAMES.	SUBJECTS. — WRITTEN.		SUBJECTS—PRACTICAL.										Total.	Decimal.	Class of Certificates.	REMARKS.
			Gunnery.	Artillery Material.	Moving, Working Ordnance, &c.	Foot Drill.	Field Gun Drill.	Harness and Stable Duty.	Riding & Driving.	Field Battery Movements.	Sword Drill.	Shifting Ordnance, including Knot-ting and Lashing.	Regimental Duty.					
"B" Battery.	Bombardier.	E. Bradley.	210	150	90	25	135		180		45	180	200	1,015	.67	2nd.	Qualifying Decimal, 5.	
	do	do	210	210	160	45	135		180		45	180		795	.79	2nd.		
	Driver	do	196	150	74	25	120		140		35	120		860	.57	2nd.		
	do	do	120	120	60	25	135		180		40	120		680	.45	2nd.		
	do	do	105	129	46	25	120		140		35	120		580	.38	2nd.		
	do	do	144	150	100	40	120		140		30	120		594	.59	2nd.		
do	do	A. McPherson.	175	150	100	25	105		160		35	120		620	.62	2nd.	Not qualified.	
do	do																	
do	do	P. Flynn.	175	156	66	30	135	16	140		40	35		796	.56	2nd.		
do	do	N. Hutchinson.	280	174	82	45	90	20	140		40	35		906	.64	2nd.		
do	do	T. Martin.	91	90	70	35	105		140		40	30		601	.44	2nd.		
do	Gunn. & Dr.	G. Blais.	245	150	100	40	105	45	180	42	40	35	180	1,162	.70	2nd.		
Wellington Field Battery.	Driver.	F. Day.	210	210	120	30	120	40	140		30		160	1,060	.53	2nd.	Not qualified.	
do	do	W. McGraw.	175	150	100	25	75							525	.50	2nd.		
do	do	J. Bennett.	147	144	70	35	105	40	140		30		160	871	.56	2nd.		
do	Gunner.	A. Raines.	175	90	120	35	90	35		30	30		160	725	.49	2nd.		
do	do	S. McGraw.	280	150	80	30	150	25			35		140	815	.57	2nd.		
do	do																	

do	Gunn. & Dr	P. V. Thom.	210	180	80	25	120	35	120	24	35		160	989	.67	2nd.	Not qualified.
do	Gunner.	J. L. De Martigny.	210	189	60	35	90	40			30		160	814	.55	2nd.	
do	do	W. Freeman.	175	150	80	35	90	30			30		160	750	.51	2nd.	
Sheffield Field Battery.	Sergeant.	W. H. Wetherbee.	259	222	132	50	135	130			130	160		1,088	.70	2nd.	
do	Corporal.	H. L. Strange.	231	192	112	50	135	160				180		1,060	.70	2nd.	Not qualified.
do	Bombardier.	P. B. Martin.	140	177	108	60	120	130				160		895	.59	2nd.	
do	Driver.	S. Marion.	115	120	102	60	120	140				160		817	.51	2nd.	
do	do	C. C. Duchesneau.	130	132	92	60	105	130				160		809	.52	2nd.	
do	Gunner.	A. Savage.				60	105	140				160		465			Not qualified.
do	do					50											
do	do	S. Butterworth.	200	171	86	25	120	140			35	100		877	.58	2nd.	
do	do	M. Regan.	175	126	64	35	75				35			630	.42	2nd.	
do	do	R. Seale.	140	150	84	25	90				35	100		744	.50	2nd.	Not qualified.
do	do	J. Butler.				30	75				30			255	.17	2nd.	
do	do	J. Grey.				30	90				30	100		350	.23	2nd.	
Quebec Field Battery.	Driver.	O. Demers.	109	132	40	25	120	40	100		30		160	756	.48	2nd.	
do	do	P. Fournier.				25	75	35	80		20		140	375	.22	2nd.	Not qualified.
Newcastle Field Battery.	Corporal.	R. L. Maltby.	221	186	114	25	120		160			160		986	.68	2nd.	
do	do	T. Duffy.	165	210	126	35	90		120			180		926	.63	2nd.	

T. B. STRANGE, Lieut.-Colonel,

Commandant, School of Gunnery, Quebec.



## APPENDIX No. 5.

## GUNNERY CERTIFICATES.

## PROVINCE OF ONTARIO.

List of the Names of Officers, Non-Commissioned Officers and others, of the Active Militia, who have obtained Certificates at "A" Battery, School of Gunnery, Kingston, during the year 1877.

Rank and Name.	Corps.	Certificates.		Long or Short Course.
		1st Class.	2nd Class.	
		1877.	1877.	
Adair, Gunner William.....	Kingston Field Battery.....	May 31	Short.	
Athawes, Gunner C. S. B.....	Hamilton do.....	Aug. 25	do	
Atkinson, Gunner James.....	Durham do.....	April 16	do	
Boyer, Sergeant H. N.....	Woodstock, N.B., Field Battery.....	June 22	do	
Browne, Gunner A.....	Toronto do.....	May 31	do	
Browne, Sergeant George.....	Ottawa Brigade Garrison Artillery.....	Feb. 27	do	
Coyne, Gunner M.....	"A" Battery.....	Jan. 26	do	
Emery, Sergeant Charles.....	Woodstock, N.B., Field Battery.....	May 15	do	
Fearon, Gunner Edward.....	Kingston do.....	Aug. 25	do	
Firman, Bombardier E. A.....	Toronto do.....	Dec. 22	do	
Gair, Bombardier Joseph.....	Hamilton do.....	May 15	do	
Garden, Sergeant J. T.....	Woodstock, N.B. do.....	do 15	do	
Gordon, Captain William D.....	14th Batt. "Prince of Wales' Own Rifles".....	June 30	do	
Heath, Lieutenant W. H.....	London Field Battery.....	Mar. 15	do	
Hewer, Corporal J.....	Wellington Field Battery.....	Sept. 28	do	
Hixson, Bombardier Nathan.....	Welland Canal Field Battery.....	Feb. 27	do	
Howe, Lieutenant Joseph.....	New Brunswick Brigade Garrison Artillery.....	Oct. 26	do	
Hudon, Bombardier G.....	London Field Battery.....	Jan. 26	do	
Humphreys, Gunner B. H.....	Ottawa do.....	Feb. 27	do	
Kelly, Captain Thomas.....	47th Battalion Active Militia.....	Sept. 14	do	
Kennedy, Corporal, R.....	Durham Field Battery.....	Dec. 28	do	
Kerr, Gunner, Robert.....	Goderich do.....	Dec. 28	do	
Linall, Bombardier Henry.....	Toronto Field Battery.....	May 25	do	
Martin, Gunner R.....	do do.....	June 22	do	
Milledge, Lieutenant L. D.....	New Brunswick Brigade Garrison Artillery.....	Aug. 25	do	
Milne, Gunner Alexander.....	Ottawa do.....	Nov. 10	do	
Morton, Gunner Ernest.....	do Field Battery.....	April 16	do	
McGill, Captain Sydenham C.....	4th Regiment of Cavalry.....	Mar. 15	do	
McIntosh, Driver A.....	"A" Battery.....	Dec. 22	do	
McMahon, Lieutenant W. F.....	Hamilton Field Battery.....	Sept. 12	do	
Nedham, Gunner C. D.....	Ottawa Field Battery.....	May 31	do	
Pauter, Gunner E.....	London do.....	Jan. 26	do	

## PROVINCE OF ONTARIO.

List of Officers, Non-Commissioned Officers and others, of the Active Militia, who have obtained Certificates at "A" Battery, &c.—Continued.

Rank and Name.	Corps.	Certificates.		Long or Short Course.
		1st Class.	2nd Class.	
		1877.	1877.	
Reed, Lieut. H. (Bt. Major)....	Red River Force.....	Mar. 15	Short.	
Russell, Lieut. Alex. J. Haig....	Ottawa Brigade Garrison Artillery.....	April 16	do	
Ross, Bombardier John A.....	Wellington Field Battery.....	Oct. 7	do	
Rowe, Corporal Francis.....	do do.....	April 16	do	
Smith, Sergeant Fred.....	Ottawa Brigade Garrison Artillery.....	May 25	do	
Smith, Major Henry R.....	47th Battalion Active Militia.....	June 30	do	
Sproule, Sergeant Thomas ...	Ottawa Brigade Garrison Artillery.....	Feb. 27	Jan. 26	do
Strathy, Bombardier C.....	Toronto Field Battery.....	Oct. 26	do	
Summers, Corporal W.....	London do.....	Jan. 26	do	
Taylor, Gunner J.....	do do.....	do 26	do	
Twigg, Sergeant William.....	Durham do.....	April 16	do	
Vankoughnet, Lieut. M. S....	Toronto Garrison Battery.....	Jan. 26	do	
do do.....	do do.....	Oct. 30	Long.	
Waldron, Bombardier G. F....	do do.....	July 26	Short.	
Warburton, Gunner John.....	London Field Battery.....	Oct. 7	do	
Whitney, Gunner William.....	Kingston do.....	May 15	do	
Wilmot, Sergeant J. A.....	do do.....	Feb. 27	do	
Wilmot, Sergt.-Major Peter...	do do.....	do 27	do	
Wilson, Sergeant John.....	Hamilton do.....	April 16	do	
Wilson, Gunner Henry.....	Kingston do.....	Oct. 26	do	
Woodrow, Gunner N.....	Ottawa Brigade Garrison Artillery.....	Oct. 7	do	
Young, 1st Lieutenant G. H....	Winnipeg Field Battery.....	Feb. 3	do	
Young, Gunner William.....	Ottawa do.....	April 16	do	

## RECAPITULATION.

First-Class Certificates, "Long Course".....	0
Second-Class Certificates do.....	1
First-Class Certificates, "Short Course".....	30
Second-Class Certificates do.....	25
Total.....	56



# RESUMÉ. PROVINCE OF ONTARIO.

## REGIMENTAL DIVISION.

## ACTIVE MILITIA.

Officers of the Active Militia Artillery, and Candidates for Commissions therein, who have obtained Certificates at the Schools of Gunnery, in the Province of Ontario, since their first opening.

First Class  
Certificates.Second Class  
Certificates.

REGIMENTAL DIVISION.	First Class Certificates.	Second Class Certificates.
Addington ( <i>vide</i> Lennox).....		
Bothwell.....		
Brant.....		
Brockville ( <i>vide</i> Leeds).....		
Bruce.....	1	
Cardwell.....		
Carleton and City of Ottawa.....		
Dundas.....	17	17
Durham.....	8	4
Elgin.....	6	5
Essex.....		
Frontenac and City of Kingston.....	4	1
Glengarry.....	37	24
Grenville.....	1	
Grey.....		
Haldimand.....		
Halton.....	1	1
Hamilton, City of ( <i>vide</i> Wentworth).....	1	
Hastings.....		
Huron.....	16	3
Kent.....	5	
Kingston, City of ( <i>vide</i> Frontenac).....		
Lambton.....		
Lanark.....	5	2
Leeds and Brockville.....	3	
Lennox and Addington.....	7	2
Lincoln.....	8	3
London ( <i>vide</i> Middlesex).....	11	5
Middlesex and London.....		
Niagara.....	7	8
Norfolk.....	1	
Northumberland.....		
Ontario.....	8	2
Ottawa, City of ( <i>vide</i> Carleton).....	2	
Oxford.....		
Peel.....		1
Perth.....	1	
Peterborough.....	2	
Prescott and Russell.....	1	
Prince Edward.....	1	
Renfrew.....		
Russell ( <i>vide</i> Prescott).....		
Simcoe.....		
Stormont.....		
Toronto, City of ( <i>vide</i> York).....	9	5
Victoria.....		
Waterloo.....		
Welland.....		
Wellington.....	6	7
Wentworth and City of Hamilton.....	11	13
York and City of Toronto.....	12	3
Winnipeg, City of, Manitoba.....	95	27
St. John, N.B.....	4	1
Carleton, N.B.....	7	4
Grand Total.....	302	140

## PROVINCE OF QUEBEC.

LIST of Names of Officers, Non-Commissioned Officers and others, in the Active Militia, who have obtained Certificates at "B" Battery, School of Gunnery, Quebec, during the year 1877.

Rank and Name.	Corps.	Certificates.		Long or Short Course.
		1st Class.	2nd Class.	
		1877.	1877.	
Allen, Corporal Denis.....	New Brunswick Brigade Garrison Artillery .....	April 14	Short.	
Arthur, Driver James.....	Quebec Field Battery.....	July 13	do	
Belanger, Gunner J. ....	"B" Battery.....	Mar. 22	do	
Bennett, Driver Geo. C.....	Montreal Field Battery .....	Oct. 30	do	
Blais, Gunner Geo.....	"B" Battery.....	Nov. 27	do	
Bradly, Bombardier Ernest..	do .....	July 13	do	
Brown, Gunner Henry .....	do .....	Dec. 15	do	
Butterworth, Gunner Samuel	Shefford Field Battery .....	May 21	do	
Callaghan, Corporal Owen...	"B" Battery.....	Sept. 19	do	
Coté, Gunner Alfred.....	do .....	Dec. 15	do	
Curskelly, Gunner Cliris.....	do .....	Sept. 19	do	
David, Major Sullivan.....	6th Fusiliers.....	Dec. 27	do	
Day, Gunner Frank.....	Wellington Field Battery .....	Nov. 27	do	
Dean, Lieutenant C. P.....	1st Lanark Militia (Scotland) .....	April 21	do	
Demers, Driver Octave.....	Quebec Field Battery .....	Oct. 30	do	
Doiron, Gunner Arthur .....	"B" Battery.....	Dec. 15	do	
Duchesneau, Driver C. C.....	Granby Battery .....	Feb. 23	do	
Duffy, Corporal Thomas .....	Newcastle Battery, N.B.....	do 8	do	
Dufresne, Gunner A.....	"B" Battery.....	Mar. 22	do	
Enright, Gunner Thomas .....	do .....	April 14	do	
Flynn, Driver Patrick.....	do .....	Oct. 18	do	
Frazer, Capt. and Bt.-Maj. A	Kamouraska Provisional Battery .....	April 21	do	
Freeman, Gunner Wm .....	Montreal Field Battery.....	Nov. 27	do	
Genereux, Gunner E.....	"B" Battery.....	do 15	do	
Gordon, Gunner J.....	do .....	do 15	do	
Hannifan, Gunner J.....	do .....	Mar. 22	do	
Hatton, Major G. W.....	1st Prince of Wales Battalion.....	Dec. 27	do	
Hebert, Capt. P. O. J.....	65th Battalion Mount Royal Rifles .....	do 27	do	
Hutchinson, Driver Nicholas.	"B" Battery.....	Oct. 18	do	
Imlah, 1st Lieut. W. E.....	Halifax Field Battery .....	Nov. ....	Long.	
Ireland, Gunner David.....	"B" Battery.....	Dec. 15	Short.	
Jackson, Actg. Bombr. C. F.	do .....	Nov. 15	do	
Jordan, Bombardier Wm.....	do .....	Sept. 19	do	
Keane, Gunner Jas. A.....	do .....	Dec. 15	do	
Kerby, Actg. Bombr. Wm.....	do .....	Aug. 17	do	
Leray, Actg. Bombr. A.....	do .....	Sept. 19	do	
Logan, Gunner Robt.....	do .....	Dec. 15	do	
Logny, Gunner Jules.....	do .....	April 14	do	
Loscombe, Gunner C.....	do .....	Mar. 22	do	



## PROVINCE OF QUEBEC.

LIST of Candidates for Commissions, &c.—*Concluded.*

Rank and Name.	Corps.	Certificates.		Long or Short Course.
		1st Class.	2nd Class.	
		1877.	1877.	
Mahoney, Gunner Patrick	"B" Battery	Dec. 15	Short.	
Maltby, Corporal R. L.	Newcastle Field Battery	Feb. 8	do	
Marion, Driver S.	Granby do	do 17	do	
Martigny, Gun. Jacques L. de	Montreal do	Nov. 27	do	
Martin, Bombardier P. B.	Shefford do	Feb. 23	do	
Mondelet, Corporal G. C.	Montreal Garrison Artillery	Nov. 15	do	
Moore, Capt. H. B.	3rd Victoria Rifles	Dec. 27	do	
Mullarky, Gunner J.	"B" Battery	Mar. 22	do	
McDonald, Gunner James	New Brunswick Brigade Garrison Artillery	April 14	do	
McDonald, Gunner James	"B" Battery	Dec. 15	do	
McGinnis, Gunner Arthur	do	Sept. 19	do	
McGraw, Driver Wm.	Montreal Field Battery	Oct. 18	do	
McGraw, Gunner Samuel	do do	Nov. 27	do	
Mckay, Gunner John	"B" Battery	Dec. 15	do	
McKinnon, Gunner J. L. G.	do	do 15	do	
McPherson, Driver Angus	do	Aug. 17	do	
O'Neil, Gunner Thos.	do	April 14	do	
Paterson, Gunner T. J.	do	Sept. 19	do	
Pennefather, Cornet R.	8th Regiment Cavalry	Oct. 30	do	
Petit, Gunner Oscar	"B" Battery	April 14	do	
Price, Capt. T. C.	Summerside Garrison Battery	April 21	do	
Raines, Gunner A.	Montreal Field Battery	Nov. 27	do	
Redelix, Gunner Henri	"B" Battery	Sept. 19	do	
Seale, Gunner Richard	Shefford Field Battery	May 21	do	
Sloane, Gunner Jas.	"B" Battery	Sept. 19	do	
Smith, Driver Jas.	do	Aug. 17	do	
Smith, Gunner Emil T.	do	Sept. 19	do	
Smith, Gunner Wm. G.	do	Dec. 15	do	
Strange Corporal H. J.	Granby Field Battery	Feb. 23	do	
St. Pierre, Gunner A.	"B" Battery	April 14	do	
Taché, Lieut. G. E.	Kamouraska Provisional Battalion	Oct. 18	Long.	
Thom, Gunner Peter V.	Montreal Field Battery	Nov. 27	Short.	
Wetherbee, Gunner W. H.	Granby Field Battery	Feb. 23	do	

## RECAPITULATION.

First-Class Certificates, "Long Course"	2
Second-Class do do	0
First-Class do "Short Course"	7
Second-Class do do	63
Total	72

## RESUMÉ.

## PROVINCE OF QUEBEC.

REGIMENTAL DIVISIONS.	ACTIVE MILITIA.	
	1st Class Certificates.	2nd Class Certificates.
Officers of the Active Militia Artillery, and Candidates for Commissions therein, who have obtained Certificates at the Schools of Gunnery, in the Province of Quebec since their first opening.		
Argenteuil and Two Mountains		
Arthabaska and Drummond		
Assomption and Montcalm		
Bagot		
Beauce	5	6
Beauharnois and Laprairie	1	
Bellechasse and Dorchester		
Berthier		
Bonaventure		
Brome and Stanstead		
Chambly and Verchères		
Champlain		
Charlevoix and Montmorency		
Chateauguay	1	
Chicoutimi and Saguenay		
Compton and Sherbrooke	1	3
Gaspé	1	3
Hochelaga and City of Montreal	32	75
Huntingdon	2	
Iberville		
Jacques Cartier and Laval	2	
Joliette		
Kamouraska		
Lévis		
L'Islet and Montmagny		
Lotbinière		
Maskinongé and St. Maurice	1	
Megantic		
Missisquoi	3	
Napierville and St. Johns		
Nicolet and Yamaska	2	
Ottawa and Pontiac		
Portneuf	14	171
Quebec, City of	1	
Richelieu	2	
Richmond and Wolfe		
Rimouski		
Rouville	2	
St. Hyacinthe	2	22
Shefford	1	
Soulanges and Val-d'Aulieu		
Temiscouata	1	
Terrebonne		1
Wellington, Province of Ontario	1	
Kings, Province of New Brunswick		



RESUMÉ—PROVINCE OF QUEBEC.—*Concluded.*

REGIMENTAL DIVISIONS.	ACTIVE MILITIA.	
	1st Class Certificates.	2nd Class Certificates.
Officers of the Active Militia Artillery, and Candidates for Commissions therein, who have obtained Certificates at the Schools of Gunnery, in the Province of Quebec since their first opening.		
Northumberland, Province of New Brunswick .....	2	2
St. John, Province of New Brunswick .....		2
Victoria, Province of British Columbia .....	1	
Carleton, Province of Nova Scotia .....	1	1
Digby do do .....		2
Halifax City do do .....	2	
Northumberland, Province of New Brunswick .....		6
Queens, Province of Prince Edward Island .....		1
Total .....	82	295
Quebec City, Cavalry Certificate .....	1	
Kamouraska, Infantry do .....	1	
Portneuf do do .....	2	
Grand Total .....	86	295

## APPENDIX No. 6.

## MILITARY SCHOOL CERTIFICATES.

## PROVINCE OF NEW BRUNSWICK.

LIST of Officers and Non-Commissioned Officers in the Active Militia, and Candidates for Commissions therein at the School of Military Instruction during the year 1877.

Rank and Name.	First Class Certificate and Date.	Second Class Certificate and Date.	Regimental Division.
	1877.	1877.	
Abbott, Louis A., Sergeant, Infantry Company .....	Feb. 19 .....		Charlotte.
Alward, Samuel C., Captain, 74th Battalion .....	May 16 .....		Westmorland.
Andrews, James R., New Brunswick Brigade Garrison Artillery .....	do 5 .....		St. John.
Beckwith, Charles E., Lieutenant .....	do 16 .....		Victoria.
Blaney, George, 71st Battalion .....	Feb. 14 .....		York.
Botsford, Harry G. do .....	April 3 .....		do
Bourne, Henry W., Captain, 67th Battalion .....	do 3 .....		Carleton.
Bradley, Frederick J., 71st Battalion .....	Mar. 20 .....		York.
Brannen, Michael do .....	April 4 .....		do
Carman, Charles R., 67th Battalion .....	do 19 .....		Carleton.
Carman, Hewlett S., 71st Battalion .....	May 16 .....		York.
Craig, William T. do .....	Feb. 14 .....		do
Dayton, Brewster do .....	Mar. 15 .....		do
Estey, Frank N. do .....	April 25 .....		do
Hazen, J. Douglas do .....	May 1 .....		do
Hoben, George D. do .....	do 5 .....		Sunbury.
Hoyt, James H., 71st Battalion .....	do 16 .....		York.
Kilburn, Frank, 67th Battalion .....	April 12 .....		Carleton.
Langdale, James, 71st Battalion .....	Feb. 19 .....		York.
Leonard, Walter L. do .....	May 5 .....		do
London, Edward, 67th Battalion .....	April 3 .....		Carleton.
Lottimer, Andrew, 71st Battalion .....	do 25 .....		York.
Lovell, Benjamin do .....	do 12 .....		do
Lugrin, George do .....	do 12 .....		do
Malany, Frank do .....	Mar. 15 .....		do
Marshall, Charles E., Woodstock Field Battery .....	do 27 .....		Carleton.
Maxwell, Robert, 71st Battalion .....	Feb. 14 .....		York.
Milledge, Lewis W., 62nd Battalion .....	do 28 .....		St. John.
McFee, James W., 74th Battalion .....	April 12 .....		Westmorland.
McGrath, Edward, 71st Battalion .....	May 16 .....		York.
McJunkin, Wm., New Brunswick Brigade Garrison Artillery .....	do 16 .....		St. John.
McLennis, William, 71st Battalion .....	do 1 .....		York.
McLaughlan, Milford do .....	Mar. 15 .....		do
McNaughton, William, Captain, 73rd Battalion .....	April 12 .....		Northumberland



## PROVINCE OF NEW BRUNSWICK.

LIST of Candidates for Commissions, &c.—*Concluded.*

Rank and Name.	First Class Certificate and Date.	Second Class Certificate and Date.	Regimental Division.
	1877.	1877.	
Nicoud, Simon, New Brunswick Engineers.....		Feb. 28.....	St. John.
Patchell, James, 71st Battalion.....		Mar. 15.....	York.
Pearson, T. E. Alfred, Sergeant, 8th Cavalry.....		April 25.....	Queens County.
Pennefather, Richard, Cornet do.....		Feb. 14.....	York.
Perkins, Charles H. L., 67th Battalion.....		April 19.....	Carleton.
Pilkington, D. W. do.....		Mar. 27.....	do
Pinder, Richard M., Sergeant, 71st Battalion.....		April 19.....	York.
Pitts, Herman H. do.....		Feb. 14.....	do
Roberts, C. J. Douglas do.....		May 5.....	do
Russell, William E. do.....		Feb. 19.....	do
Sampson, William P. do.....		Mar. 20.....	do
Smith, Charles W. do.....		do 15.....	do
Staples, Captain and Bt.-Major do.....		do 27.....	do
Strabon, Frank do.....		Feb. 14.....	do
Strabon, Andrew W. do.....		May 1.....	do
Sullivan, William, 62nd Battalion.....		Mar. 15.....	St. John.
Symonds, R. Hibbert, 71st Battalion.....		Feb. 14.....	Sunbury.
Vradenburg, William do.....		do 28.....	York.
Wheeler, Cook, 67th Battalion.....		April 19.....	Carleton.

## RECAPITULATION.

First Class Certificates.....	0
Second do.....	53
Total .....	53

## RESUMÉ.

## PROVINCE OF NEW BRUNSWICK.

REGIMENTAL DIVISIONS.	ACTIVE MILITIA.	
	Officers and N.C.O. in the Active Militia, and Candidates for Commissions therein, who have obtained Certificates at the Schools of Military Instruction since their first opening.	
	1st Class Certificates.	2nd Class Certificates.
Albert.....		3
Carleton.....	2	62
Charlotte.....		12
Gloucester.....		3
Kent.....		5
Kings.....		42
Northumberland.....		7
Queens.....		10
Restigouche.....		2
St. John (first, second and third).....	9	143
Sunbury.....		16
Victoria .....		4
Westmorland.....		15
York.....	4	216
Grand Total.....	15	540



## PROVINCE OF NOVA SCOTIA.

LIST of Officers and Non-Commissioned Officers in the Active Militia, and Candidates for Commissions therein, who have obtained Certificates at the School of Military Instruction, during the Year 1877.

RANK AND NAME.	First Class Certificate and Date.	Second Class Certificate and Date.	Regimental Divisions.
	1877.	1877.	
Abbott, John H., 2nd Halifax Brigade Garrison Artillery.....	April 30.....	Halifax City.	
Anderson, A., Sergt.-Maj., Halifax Field Battery.....	do 19.....	do	
Beckwith, Mayhew E., 63rd Battalion.....	do 6.....	do	
Black, Robert Y., 66th Battalion.....	do 30.....	do	
Boutillier, Rupert, Bombardier, Halifax Field Battery.....	Feb. 20.....	do	
Brown, Wm. L., Lieut., 2nd Halifax Brigade Gar. Artillery.....	April 6.....	do	
Cahill, Daniel, 1st Halifax Brigade Garrison Artillery.....	April 30.....	do	
Carr, George do do.....	March 29.....	do	
Cassidy, P. J., 63rd Battalion.....	April 30.....	do	
Coyle, Peter H., 66th Battalion.....	April 19.....	do	
Crane, James N., Corporal, 63rd Battalion.....	April 30.....	do	
Fairbanks, Wm. S., 1st Halifax Brigade Garrison Artillery.....	April 4.....	Halifax.	
Fay, Andrew, 66th Battalion.....	do 6.....	Halifax City.	
Frizzle, Alex., Sergt., 1st Halifax Brigade Gar. Artillery.....	March 29.....	do	
Gibson, Chas. W., 63rd Battalion.....	April 30.....	do	
Graham, Henry M., do.....	do 13.....	do	
Gunn, Kenneth, 78th Battalion.....	Feb. 20.....	Pictou County.	
Gunn, Wm. A., 66th Battalion.....	April 19.....	Halifax City.	
Halliwell, Thomas, Ensign, 63rd Battalion.....	April 30.....	do	
Harris, Wm., Lieut., Halifax Field Battery.....	April 30.....	do	
Heckler, Henry, 63rd Battalion.....	do 30.....	do	
Hickey, James F., do.....	do 30.....	do	
Howe, Frank C., 66th Battalion.....	do 19.....	do	
Humphrey, Robert H., 66th Battalion.....	do 19.....	do	
Jackson, Wm., 66th Battalion.....	do 30.....	do	
James, Thos. C., 63rd Battalion.....	do 30.....	do	
Johnstone, F. W., do.....	do 13.....	do	
Kavanagh, Jas., Sergt., 63rd Battalion.....	Feb. 20.....	do	
Lindsay, Jos., Sergt., do.....	March 29.....	do	
Matheson, G. Gordon, Sergt., 78th Battalion.....	Feb. 20.....	Pictou County	
Maxwell, Wm., Lieut., 78th Battalion.....	do 20.....	do	
Maxwell, Jas., Gunner, 1st Halifax Brigade Gar. Artillery.....	March 29.....	Halifax City.	
McKay, Wm. V., 78th Battalion.....	Feb. 20.....	Pictou County	
McLellan, H. D., Ensign, 63rd Battalion.....	do.....	Halifax City.	
Pugh, Henry J., 66th Battalion.....	April 4.....	do	
Ridgway, Lewis, Gunner, Halifax Field Battery.....	April 6.....	do	
Ritchie, Howard B., 63rd Battalion.....	April 30.....	do	
Robson, John J., Sergt., 1st Halifax Brigade Gar. Artillery.....	do 6.....	do	
Rowe, Thomas, 66th Battalion.....	Feb. 20.....	do	
Rutherford, R. W., do.....	April 19.....	do	

## PROVINCE OF NOVA SCOTIA.

LIST of Candidates for Commissions, &c.—*Concluded.*

RANK AND NAME.	First Class Certificate and Date.	Second Class Certificate and Date.	Regimental Divisions.
	1877.	1877.	
Sadler, Thos. O., 66th Battalion.....	April 19.....	Halifax City.	
Silverthorne, David, 1st Halifax Brigade Garrison Artillery.....	April 30.....	do	
Sinclair, Alex., Gunner, 1st Halifax Brigade Gar. Artillery.....	April 6.....	do	
Spike, Arthur W., 63rd Battalion.....	do 13.....	do	
Sterns, E. Howard, do.....	do 30.....	do	
Sutherland, J. T., Sergt., 78th Battalion.....	Feb. 20.....	Pictou County.	
Twining, Russell, 63rd Battalion.....	March 29.....	Halifax City.	
Twining, Edmund S., do.....	do 29.....	do	
Twining, Harry E., 66th Battalion.....	April 19.....	do	
Umlah, Michael, 63rd Battalion.....	do 4.....	do	
Woodhill, John F., do.....	do 19.....	do	

## RECAPITULATION.

First Class Certificates.....	7
Second do.....	44
Total.....	51



## RESUMÉ.

## PROVINCE OF NOVA SCOTIA.

REGIMENTAL DIVISIONS.	ACTIVE MILITIA.	
	Officers and Non-Commissioned Officers in the Active Militia, and Candidates for Commissions therein, who have obtained Certificates at the Schools of Military Instruction since first opening.	
	First Class Certificate.	Second Class Certificate.
Annapolis.....	4	43
Antigonish.....	1	5
Cape Breton.....	1	10
Colchester.....	1	12
Cumberland.....		3
Digby.....		6
Guysboro'.....	34	269
Halifax City.....	1	33
Halifax County.....		2
Hants.....	1	4
Inverness.....	1	8
Kings.....	2	10
Lunenburg.....		28
Pictou.....		2
Queens.....		14
Richmond.....	1	
Shelburne.....		
Victoria.....		
Yarmouth.....		
Ottawa City, Ontario.....		
Grand Total.....	45	449

## APPENDIX No. 7.

## CERTIFICATES OF BOARD OF EXAMINERS.

LIST of Officers of the Active Militia, and of Candidates for Commission, who have obtained Certificates from Boards of Examiners during the Year 1877.

Name and Rank.	First Class Certificate and date.	Second Class Certificate and date.
<i>Province of Ontario.</i>		
	1877.	1877.
Davy, John Robert, Sergeant-Major, 59th Battalion .....		10th July.
DeFoy, Edouard, Major, 80th Battalion.....		3rd May.
Fox, Charles G., Cornet, 1st Regiment of Cavalry .....		5th Dec.
Gibson, Wm. Henry, Ensign, 42nd Battalion.....		18th July.
Graburn, Kingsforth, Ensign, 1st Battalion Governor General's Foot Guards.....		12th Sept.
Hollinsworth, G., Sergeant-Major, 42nd Battalion .....		18th July.
Leask, Thomas, Sergeant, 42nd Battalion .....		do
Moffat, Alexander, jun., Lieutenant, 42nd Battalion.....		do
McDiarmid, Donald, Captain, 59th Battalion.....	10th July.	
Smyth, Robert, Lieutenant do .....		10th July.
Weatherley, Henry Stuart, Captain, 1st Battalion Governor General's Foot Guards.....	12th Sept.	
White, Frederick, Ensign, 1st Battalion Governor General's Foot Guards.....		12th Sept.
<i>Province of Quebec.</i>		
Bagg, R. Stanley C., 5th Battalion.....		7th Nov.
Beauchamp, Joseph, Paymaster, 65th Battalion.....	3rd May.	
Boudreau, Joseph, Captain, 76th Battalion.....	do	
Cameron, Kenneth, Ensign, 1st Battalion .....		23rd May
Caverhill, Frank, Ensign, 5th Battalion.....		7th Nov.
Chubb, Sidney E., Lieutenant, 1st Battalion.....		3rd Feb.
Cross, Selkirk, 5th Battalion.....		7th Nov.
Cushing, William M., Ensign, 6th Battalion.....		27th Nov.
Fair, John, Ensign, 6th Battalion .....		do
Hebert, T. O. Joseph.....	3rd May.	
Kinnear, A. W., Ensign, 3rd Battalion.....		3rd Feb.
Kinnear, Stanley, Ensign, 1st Battalion.....		23rd May.
Lapointe, François, Captain, 65th Battalion.....	3rd May.	



LIST of Candidates for Commissions, &c.—*Continued.*

Name and Rank.	First Class Certificate and date.	Second Class Certificate and date.
<i>Province of Quebec.—Continued.</i>		
	1877.	1877.
Lewis, Llewelyn Mostyn, Ensign, 5th Battalion.....		7th Nov.
Massey, Frederick, Ensign, 6th Battalion.....		27th Nov.
Martin, William, Cornet, Quebec Cavalry.....		2nd Nov.
Mooney, George A., Ensign, 6th Battalion.....		27th Nov.
Nott, John Fortune, Lieutenant, 1st Battalion.....		23rd May.
Perkins, Francis Henry, Captain, 52nd Battalion.....	9th Jan.	
Raphael, John F., Ensign, 6th Battalion.....		27th Nov.
Robertson, Alexander, Captain, 1st Battalion.....	23rd May.	
Stancliffe, Frederick, Ensign, 3rd Battalion.....		3rd Feb.
Stephens, S. Sheldon, Ensign, 5th Battalion.....		7th Nov.
Stewart, Alexander, Ensign, 3rd Battalion.....		3rd Feb.
Tatlow, Robert, Captain, 1st Battalion.....	23rd May.	
Wilgress, John Ogden, Ensign, 1st Battalion.....		23rd May.
<i>Province of New Brunswick.</i>		
Likely, Henry D., Captain, 62nd Battalion.....	9th Feb.	

## RECAPITULATION.

First Class Certificates.....	10
Second Class do.....	29
Total.....	39

## APPENDIX No. 8.

## REPORT OF DIRECTOR OF STORES.

DEPARTMENT OF MILITIA AND DEFENCE,  
STORE BRANCH, OTTAWA, 1st January, 1878.

SIR—I have the honor to submit, for your information, the following Report on the militia stores and properties in my charge.

*Clothing.*

The clothing issued this year to the Militia force, has been, as for the two past years, manufactured in the country; and it has not proved satisfactory to the force at large. Complaints respecting it have been very prevalent. The aggregate issue for the past year has amounted to 6,561 tunics, 8,464 trousers, 5,720 forage caps and 3,496 great coats of all sorts.

*Ammunition.*

The issue of Snider ammunition last year for practice, amounted to 322,609 rounds of ball, and 303,809 rounds of blank.

There has also been sold, during the year, 587,030 rounds of Snider ball, and 9,500 rounds of Martini-Henry rifle ball ammunition, to the different Rifle Associations and members of the Militia, for private practice. Deposit receipts to the amount of \$10,163.61 have been received for this, and credited in the usual way to the Receiver-General. In the above amount is included the gunpowder sold to the Post Office Department for the service of the time gun at Ottawa, and the ammunition sold to the North West Police Force.

To the different corps of Artillery, Field Batteries and Garrison, have been issued, for practice, 18,905½ lbs. of gunpowder, and 6,842 friction tubes, with the usual complement of shot, shell, fuzes, &c.

*Arms.*

Several of the Rifle Corps hitherto armed with the long Snider rifle, have had the latter exchanged for the short Snider, the proper weapon for that arm of the service. One corps of Garrison Artillery, the Montreal Brigade, has also been armed with the same description of arm. The long Sniders returned into store, were found generally to be in bad condition, and requiring extensive repairs, at the hands of the only two armourers in the service of the Department, at Montreal and Quebec. It is to be regretted that we are still without the services of two more armourers, whose services are urgently needed, and who should be stationed at Kingston and Toronto. There can be no doubt about the necessity existing, of having a general overhauling of the arms now in possession of the Militia, which are not in that effective state that they ought to be.



### Boards of Survey.

Annual Boards of Survey were held as usual in the various Districts. The unserviceable stores, condemned by the said Boards, have been sold by public auction, as authorised. The amount realized by their sale, was \$481.43. In this amount is, however, included a sum of \$260.70, received for the iron debris collected from the ruins of the burned barracks, and other buildings, destroyed at the great fire at St. John, in the month of June last.

By this fire the Department lost armories, drill sheds, and stores, with the whole of their contents. In the armories were consumed all the arms, accoutrements and other stores belonging to the different corps at St. John. The stores also in charge of the District Storekeeper were entirely lost. These stores consisted principally of arms, accoutrements, clothing and camp equipage, &c., &c.

At the time of the fire there were stored in the District Stores, 2,204 arms of all sorts, accoutrements of all sorts, 6,639, 5 marquees, 199 circular tents, 2,130 blankets, 24 blanket valises, a quantity of clothing, barrack and ordnance stores, and other articles too numerous to mention, and impossible to enumerate in detail in a Report like this.

To afford shelter to the houseless, and on the application of the Mayor of St. John, all the available camp equipage stored at Halifax and Quebec, was sent to St. John, and handed over to him. The deficiencies on these issues when returned into store were very great—12 circular tents, 465 tent bags, 7 marquee bags, 474 pin bags, 51 blanket valises, 2,006 blankets, and more than one-half of the tent poles, mallets and tent pins that had been issued for this service were lost, and are still unaccounted for.

### Deposit Receipts.

The aggregate amount of monies received by the Store Branch during the past year is shown in the statement underneath:—

AMMUNITION.		CLOTHING.		Rent.	Arms and Accoutrements.	Miscellaneous.	TOTAL AMOUNT.
Rounds.	Amount.	Officers.	Men.				
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
596,530	10,163 61	21 00	773 58	6,239 19	2,589 20	2,589 20	24,707 95

The above statement shows an increase of upwards of \$4,000 over the receipts of the previous year. This is owing to a slight increase in the sale of ammunition, and the refund for the sale of the rifled mountain guns and their equipments to the North-West Mounted Police Force issued last year.

### Requisitions for Stores.

809 orders for issues from and receipts into stores in the various districts have been made during the year from Headquarters, in answer to the above.

### Tenants and Rental.

The statement underneath furnishes all the information necessary under this head. A considerable amount of arrears have been collected during the year. At its close there was still due and outstanding, the sum of \$379.50. A great difficulty has been experienced in collecting the rents due during the past year, owing no doubt to the great commercial depression that has existed for so long, and which has more than doubled the arrears at the close of the year.

Tenants.	Localities.	Rent per Annum.	Remarks.
		\$ cts.	
1	Chatham, Ont.....	00	Arrears of the previous year to the extent of \$366 96 have been collected during the past year.
3	Niagara.....	70 00	
3	Toronto.....	240 00	
		1 00	
1	Ottawa.....	580 00	
24	Kingston.....	250 75	
4	Montreal, &c.....	1 00	
1	Laprairie.....	104 00	
2	Isle aux Noix.....	3,110 73	
28	Quebec and District.....	1,210 25	
35	Point Levis.....	148 50	
14	New Brunswick.....	150 00	
2	Nova Scotia.....	1 00	
1	Prince Edward Island.....		
	Total.....	5,872 23	
119			

I have the honor to be, Sir,

Your obedient servant,

THOS. WILY, Lieut.-Colonel,

Director of Stores and Keeper of Militia Properties.

To the Hon. the Minister of Militia and Defence,

Ottawa.



## APPENDIX No. 9.

## PALLISER GUNS.

DESCRIPTION OF THE MANUFACTURE OF COILED WROUGHT-IRON TUBES FOR  
PALLISER GUNS.

The coils for the tubes are made entirely of wrought iron bars, specially prepared by being put three times through roughing-rolls; puddled iron is hard and brittle and not by itself suitable for guns.

A sufficient number of bars are piled or faggoted together to form a bar of the size it is intended to roll. The pile, composed partly of puddled iron and partly of scrap, the former being placed always on the outside, on account of the more even surfaces, is raised to a white heat and rolled into a long bar about 24 feet long, and varying in section from  $2\frac{1}{2}$  to 7 inches, according to the purpose for which it is intended. It is then cut into lengths, again-faggoted, raised to a welding heat, and passed between the rollers; one rolling may be sufficient. The section of the bar is slightly trapezoidal, in order that when the hot bar is wound round the mandrel, narrow side inward, the spreading of the inside and the narrowing of the outside may be neutralized, and no space left between the folds of the coils. To weld the bars together, the ends must be scarfed down and placed from opposite side in a furnace, from which, when they arrive at a white heat, they are withdrawn and welded under an adjacent steam-hammer, sand having been thrown on the hot bars (as is indeed customary in the case of all forgings) in order to clean the surface and prevent scale forming, by converting the superficial oxide into a liquid silicate which will flow off of its own accord or be squeezed out by the hammer. Another bar is welded on in a similar manner, and so on until a sufficient length is obtained for the required coil.

The bar to be coiled having the ends flattened down, is placed on trestle rollers in front of a long reverberatory furnace with a chimney at the far end and grates along its sides. A chain being hooked into an eye or hole in the end, the bar is drawn by machinery into the furnace. When the bar arrives at a bright-red heat, the end near the door is drawn out by means of the same eye, and is attached to a pin, this end being cooled by water to prevent it tearing away with the weight of the bar; this pin is connected with a slightly tapering iron roller or mandrel fixed across and in front of the door of the furnace; the mandrel tapers in order to facilitate the removal of the finished coil. The apparatus is then put into gear, and the mandrel revolves, winding the bar round it. During the process, scales form between the folds, but their effect is almost nullified by subsequent heating and forging, sand being used to assist in liquifying the oxide as stated above. When the coil is formed, the fixed extremity is hammered off the pin and water is poured on that end to cool it, in order that the folds there may not be opened out in taking off the coil. If the coil be large, a short iron bar is placed with one end resting on the ground and the other end against the extremity which has been removed from the pin. The mandrel is then turned in the same direction as that in which it revolved when the coil was being formed, and the coil being prevented from revolving by the iron prop, is loosened and slips down toward the narrow end of the mandrel. The mandrel is then lifted up by a crane and the coil drops off.

For the welding, which, especially in tubes for lining guns, must be done with great care, the coil is placed upright in a reverberatory furnace, for were it placed on its side it should be turned over in order to be equally heated all through, and more-

over drippings from the firebrick which line the furnace would probably drop from the roof in between the folds. The tube being intended for an inner one, two furnaces have to be used; one is at a low temperature (termed a blue light), and when the coil arrives at a red heat it is brought out and transferred to the other, where it is brought to a welding heat. This is found to be more economical than by placing the cold coil at once in a very hot furnace, and also prevents any injury to the iron which would result from so doing.

In all cases of welding it is necessary not only to strike while the iron is hot, but that the surfaces to be joined should be perfectly clean; the white hot coil is therefore transferred from the furnace to the steam-hammer as quickly as possible, not neglecting to throw sand upon it. The coil is first placed vertically under the hammer, and receives a few smart blows to weld the folds; it is then thrown on its side, and being gradually turned, is hammered (or patted) all round to straighten it. It is then raised vertically again and a punch or mandrel rather over half the length and a little larger than the interior diameter of the coil, is hammered down its own length; the coil is next placed on its side and hammered round, that half of its length thus being made compact and large enough to let the mandrel fall out; after this the coil is again raised vertically, and the mandrel is forced in the opposite end, and the process repeated.

The mandrels are of coiled iron and are very hard. The reason a long mandrel is not forced through the whole length of the coil is that it would tend to separate the folds.

The coil is replaced in the furnace for a second heating, and much the same process is followed to render the ring more consolidated as well as more shapely; a fine mandrel is also used to make the interior more perfect; and in order to prevent the tube from being bell-mouthed, a flexible steel bar is used under the hammer to flatten the ends.

Before the coil is removed from the hammer, water is thrown over it, which forming into steam, blows off the black scales and shreds where the work is good, but a black spot is left by the water if there is a bad part.

In order to form lining tubes, several of these coils have to be united. To weld them together, the coils have to be faced (turned smooth at the ends) and reciprocally recessed; that is, a projection (spigot) is formed at one end of the coil, while a recess (faucet) is bored in the corresponding end of another coil. The height of the shoulder is a little greater than the depth of the recess, in order that a close joint may be obtained on the interior. The recess is then expanded by heat and shrunk over the projection, so that the two coils are attached securely enough together to admit of their being put into the furnace for welding.

For the inner barrel, which is intended to be the entire length of the bore, the tube is put crossways through a furnace so constructed that intense heat acts on the joint while the remote ends project outside.

When the joint arrives at a welding heat, a stout iron bar is passed right through the tube; this bar is keyed at one end, and by means of a screw-nut, worked by a long lever at the other end, the two coils are pressed and thus welded together. This pressure slightly bulges the metal at the junction, so it must be straightened under a steam hammer. Another coil is then added on in a similar manner, and so on until the tube is of the required length.

The tube, if intended for an 8-inch, after having its necessary length, is then rough and fine bored to about 7.92 inches diameter, and the recess in the breech cut and tapped for the wrought-iron cup. The cup for closing the breech-end of the barrel is forged and stamped into shape under the steam-hammer. It is turned inside and outside, and furnished on the outside with a thread of four or five to the inch. It is then screwed tightly home.

The tube in this state is proved with water-pressure of 120 pounds to the square inch to ascertain that the cup fits tightly and that there is no leakage. The breech end of the A tube is then turned over a length of 40 inches for the B tube previously bored, and a spiral gas-channel 0.05 inch deep and 0.1 inch wide, is cut round its