

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

Coloured covers/
Couverture de couleur

Covers damaged/
Couverture endommagée

Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée

Cover title missing/
Le titre de couverture manque

Coloured maps/
Cartes géographiques en couleur

Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)

Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur

Bound with other material/
Relié avec d'autres documents

Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure

Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

Coloured pages/
Pages de couleur

Pages damaged/
Pages endommagées

Pages restored and/or laminated/
Pages restaurées et/ou pelliculées

Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées

Pages detached/
Pages détachées

Showthrough/
Transparence

Quality of print varies/
Qualité inégale de l'impression

Continuous pagination/
Pagination continue

Includes index(es)/
Comprend un (des) index

Title on header taken from: /
Le titre de l'en-tête provient:

Title page of issue/
Page de titre de la livraison

Caption of issue/
Titre de départ de la livraison

Masthead/
Générique (périodiques) de la livraison

Additional comments: /
Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below /
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



The Volunteer Review

AND MILITARY AND NAVAL GAZETTE.

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

VOL. VII.

OTTAWA, (CANADA,) TUESDAY, MAY 27, 1873.

No 21.

NEWS OF THE WEEK.

Telegraphic despatches from London state that George Smith, the *Daily Telegraph* correspondent in Assyria, has found the King's library at Nineveh and discovered in the museum many valuable fragments, particularly missing portions of the broken tablet column on which the history of the deluge was deciphered in the British Museum.

A special to the *Daily Telegraph*, dated Tiflis, May 17th, says the Russians have taken Khiva. The Khan is a prisoner. The Russian loss was slight.

A telegram to the *London Times* from St. Petersburg states that the Russians reached Khivan territory without any encounter. There is talk in St. Petersburg now of annexation of Bokara and Khokand, as well as Khiva. The Russian press represent that Turkey is tottering with misgovernment, and predict that the time is coming when her troubles will culminate, and Russia will then be able to vindicate her interests.

Later advices however, state that grave fears are entertained for the safety of the expeditionary columns owing to the heavy snow.

A despatch from Rome to the *Independent Belge*, says the Pope has had several severe attacks recently, and is in danger of death from suffocation. Cardinals are assembled in the Vatican under the presidency of Cardinal Patrizi, ready to provide for any emergency.

Snow fell in the north of England on the 18th.

The French Republic is to be reorganized by the enactment of Conservative laws, and wholly rejecting Radical plans.

The Assembly met on the 19th. The Right Centre presented an interpellation asking for a Conservative Cabinet, and demanding explanations from the Government of the recent changes in the Ministry. The Assembly voted that the debate on the interpellation will be opened to-morrow. Dunham, Minister of Justice, submitted a constitutional question organizing and providing for the establishment of a second chamber. Two test votes during the day showed

that the parties in the Chamber are evenly balanced. The Conservatives are well disciplined, resolute, and fully prepared for any issue on cabinet or constitutional questions. A motion made by the extreme Left for the dissolution of the Assembly was voted down by a heavy majority and indefinitely postponed.

From Madrid it is reported that Carlists have in some cases not only shot the soldiers who fell into their hands, but wantonly mutilated them.

With reference to the financial crisis in Austria, it is stated from Vienna that indications at the close of business on the Bourse yesterday, were that the worst of the crisis was over.

Despatches from New York States that Panama dates to the 19th instant have been received.

Ex-President Carrerose arrived at Panama on the 5th, and the revolution then broke out anew.

On the 7th a conflict between the State National troops took place on the Piazza, the States troops being beaten. Some 99 were captured.

The United States frigate *Pensacola* arrived in port during the fighting, and the foreigners in port were protected at the United States Consulate. After fighting for a day, a truce was entered into, negotiations took place, and the affair ended in both sides agreeing on Col. Perne being made President. During the fight two captains of the National forces were killed, a Colonel and Lt.-Col. wounded. The inhabitants of Panama, except those protected by United States troops landed from the *Pensacola*, fled to the bushes.

A telegram from Tiflis, 17th, confirms the news that Khiva was taken, and says the Khan was taken prisoner by the Russians, who have sustained only a slight loss.

The President has appointed M. Casiwero Perlere, Minister of the Interior, M. Fourtin, Minister of Public Works, M. Beranger, Minister of Public Works, and M. Waddington, Minister of Public Instruction. The other Ministers are unchanged. It is expected that in the meeting of the Assem-

bly Mr. Pernier will move the postponement of all debates on questions of general policy until the territory is evacuated by the Germans. The *Massagar de Paris* thinks the President has come victorious out of the crisis.

Monarchists are dissatisfied with the appointment of M. Perrier at a meeting of the members of the Right yesterday, speeches were made appealing to the Assembly to deal with energy, and rescue France from Radicalism. It was resolved that the first business to come before the Assembly, would be a demand for an explanation of the policy of the new cabinet, that if this should prove unsatisfactory, then an effort will be made to force the Minister to resign, and that the Party will not hesitate to overthrow President Thiers if he does not renounce his trimming policy.

The Chamber of deputies on May 14, approved the first clause of the bill suppressing religious bodies in Rome by a vote of 365 against 13. Fifteen Deputies were absent from the Chamber when the vote was taken. The second clause with an amendment offered by Signor Recasali was also passed by a vote of 220 against 193.

The health of the Pope is improving rapidly. Numerous deputations called upon him to day, and were received by the Pope, who held a grand reception in the Vatican.

A large number of pilgrims are expected here to-morrow from Florence. Disturbances are feared, and the Government has reinforced the garrison.

The Pope to day received the French Legion, and a deputation of foreigners; the Pope's condition is still feeble, but indications of improvement are satisfactory.

A demonstration was made in Florence yesterday against the policy of the Ministry on the religious corporation bill. A large crowd collected, and began to act in a disorderly manner, when it was dispersed by the police; several persons were arrested.

A letter was received here on May 17, from Sir Samuel Baker on the White Nile. He reports that all is well, that the passage through to the end was effected with great difficulty, and that he hopes that the obstructions will be entirely removed during the present summer.

ANNUAL REPORT ON THE STATE OF
THE MILITIA FOR 1872.

(Continued from Page 231)

TORONTO.

"*Toronto Field Battery.*—Stores generally in good order; some of the carriages had not been properly cleaned."

"*Store Department.*—Armament stores generally required cleaning; 8 inch shells covered with mud and rust. 8 inch guns required lacquering, carriages painting and puttying; several linch pins, and drag washers deficient."

"Percussion caps in main magazine, with the gunpowder and filled cartridges. As this was strictly contrary to the regulations for magazines, I ordered their removal forth with."

"The armament stores have since been taken over from the Store Department, and are now in charge of the Detachment of "A" Battery. The men have been employed in putting the stores in proper order, lacquering the guns, shot and shells, and painting and puttying the carriages."

HAMILTON.

"*Hamilton Field Battery.*—Howitzer dirty in the bore; saddlery badly moth-eaten."

"This battery has in its store one extra small bore ammunition wagon, one small-arm ammunition cart and 80 Enfield rifles in cases. All the above should be returned into store, as they are surplus to the equipment of the battery."

ST. JOHN, N. B.

"*Dorchester Battery.*—32-pr. common shells without plugs; side arm shed lets the water in through the roof; 8 inch bore gun rusty; 2 24 pr. guns not sighted."

"*Mortar Battery.*—Grummet wads require cutting; shed for small arms requiring shingling; 8-inch gun rusty in bore; 8-inch (53 cwt.) so rusted in the bore as to be un-serviceable; 8 inch mortar full of water; 8-inch gun platform and carriage require repairing."

"*Grave Yard Battery.*—32 pr. shells and 8 inch shells require lacquering."

"*Partridge Island.*—Stores in very good order."

Lieut. Colonel T. B. Strange, Inspector of Artillery, reports on the Artillery in the Province of Quebec for my information as follows:—

FIELD ARTILLERY.

This force consists of Four Field Batteries.

"1st. one at Quebec;

"2nd. one at Montreal;

Each armed with four pieces (three 9 pr. and one 24 pr. howitzers.

"3rd. The La Beauce Mountain Battery, armed with four 7 pounder muzzle loading rifle guns. Two of these guns however, with their proportion of ammunition and equipment, were lately sent to Manitoba for service, with a detachment of one officer and non commissioned officers and men, from "B" Battery School of Gunnery."

"4th. The Shefford Field Battery, which has been lately formed, but not yet supplied with guns and equipment."

CAMP LEVIS.

"On the 26th June, 1872, the Quebec Field Battery crossed the St. Lawrence and came into camp under the command of Major Baby."

"The La Beauce Battery of Artillery came up with their horses, a distance of thirty miles under the command of Captain Duchesnay, and received their guns from the Citadel, Quebec. As there was no available saddlery in store for this battery, a proportion was kindly lent for the training by the commanding officer of Cavalry, the harness and pack saddles for the mountain equipment having been sent home to England. Limbers were constructed for those guns, and harness was purchased by the officer commanding the battery, which enabled them to be brought into the field."

"Gun axle seats, of the Royal Artillery pattern, were, also, in accordance with your wishes, fixed on the carriages of the Quebec Field Battery. They were constructed by the ordnance armourer of "B" Battery and gave tactical mobility to these guns, of which you were pleased to express your approval, as well as of the La Beauce equipment."

"In accordance with orders, I exercised a general command, and instructional supervision of the artillery division in Engineer Park, consisting of a dismounted detachment from "B" Battery (the remainder having been left in the Citadel under the command of Master Gunner Donaldson) the Quebec Field Battery and the La Beauce Light Battery with Mounted detachments."

"For the first week, the captains commanding batteries were left to carry out gun and driving drill. Subsequently, these batteries were brigaded together, and worked in conjunction with the whole force, under the command of Lieutenant Colonel Casault, C. M. G., Deputy Adjutant General, commanding in camp."

"You were pleased to express approval of the tactical action of the batteries, and the positions they took up when working with the other arms."

"The horses were serviceable animals, generally the property of the drivers. Gun and driving drill of this battery was good. The carriages and equipment were in excellent order, the harness well fitted. The horses were picketed and the stable duties carried out as nearly as possible in accordance with the system of the Royal Artillery. Sergeant T. Clifford, "B" Battery, was attached as Assistant Gunnery Instructor."

"The commanding officer Major Baby, obtained a first class certificate in "B" Battery Gunnery School, and has shown himself zealous and thoroughly competent to command a volunteer field battery."

"He reports very favourably of his senior subaltern, Lieutenant Crawford Lindsay. This officer has six years service in the field battery."

"The conduct of the Battery was very good. Twenty three non commissioned officers and gunners, who are under instructions in the Gunnery school, were attached as supernumeraries."

"The gun practice was carried out partly on the 18 mile march to Beaumont, where they were ordered into position, and, without notice or measurement of range, commenced practice which was good considering the conditions. The remainder of practice was carried out at the Island of Orleans, guns and horses being ferried across. At the close of the camp, they recrossed the St. Lawrence without accident. I was agreeably surprised at the ease and rapidity with which this battery on four occasions, embarked guns, horses and equipment."

"I recommend that this battery be armed with 9 pounder muzzle loading rifle guns."

"The Beauce Battery are armed with light 7-pounder muzzle loading rifle guns. The detachments were mounted as horse artillery. The horses being the property of the gunners and drivers, were well cared for, and the conduct of the battery was very good."

"Both men and horses are light, active, and hardy. The men ride well though not with the dragoon seat, and they picked up the drill very quickly under the instruction of their commanding officer, who, with two lieutenants, the sergeant major, four sergeants, and thirteen rank and file, have gone through a course in "B" Battery School of Gunnery."

"There was not time to instruct the remainder of the battery either in gunnery or ammunition. This being their first training the whole sixteen days were occupied with drill; but when brigaded with the rest of the force, they showed skill in getting rapidly into position over very difficult ground."

"The axle trees being very short, the guns are in unstable equilibrium, but are very quickly righted when upset. Two only of the carriages were experimentally strengthened with iron at the close of the first Red River expedition; the unstrengthened carriages shewed cracks after firing five rounds. The practice was discontinued in consequence."

"The only percussion fuzes with this equipment are not suitable for it—the two serviceable carriages having been sent to Red River, last September. I recommend that this frontier battery be armed with the 9-pounder muzzle loading rifle gun and equipment. The bad roads of La Beauce district would preclude the advantageous use of heavier guns than 8 cwt., while the better roads about Quebec would permit of the utilization of a battery of four 24-pounder howitzers, collected from other smooth bore batteries, and kept in reserve at Quebec. There being, according to the returns, 3,144 rounds of 24 pr. smooth bore common and shrapnel shells in the reserve stores at Quebec, which would be an additional reason for this course a failure of suitable ammunition need not therefore be apprehended."

"The Quebec and Beauce Batteries marched out nine miles to Beaumont, and returned the same day, subsequently crossing to Orleans Island for their gun practice."

"The dismounted portion of "B" Battery was under the command of Major Montzambert, who also acted as Adj. to the artillery division. The main guard of the artillery camp was taken by "B" Battery, who also acted as escorts to the field batteries when brigaded with the other troops."

"The only accident during the training occurred in the streets of Quebec. A horse of Major Baby's Battery had to be destroyed, getting a leg broken by a kick from the horse of Sergeant Assistant Instructor Clifford. A board of officers exonerated him and the driver from blame, and awarded compensation to the owner of the horse."

AT THE CAMP LA PRAIRIE.

"On the 2nd July, 1872, I inspected the Montreal Field Battery, commanded by Lt. Col. Stevenson."

"The physique of the men is good, as also their general intelligence, but the majority have served for a number of years and decline to re enrol. The horses were much superior to those I saw on my last inspection but are not the property of the driver except in a few cases, and Lieut. Colonel Ste-

venson finds it expensive and difficult to horse his Battery, which could only turn out for four-days during the present training."

"He informs me that he holds a list of subscribers in Montreal for the purchase of horses for his battery, which he would hand over to Government, provided a Field Battery Branch School of Artillery was established at Montreal, which would train drivers for his battery, and horse it when required to turn out. I beg to submit the proposal for consideration."

"The harness and equipment were in very good order, and Lieut. Col. Stevenson handles his battery with skill and confidence. The drill was steady, but slow. In spite of the intelligence of non-commissioned officers and men, who are mostly mechanics of a superior class, their knowledge of ammunition and its application is defective, as is the case with all the field batteries I have inspected, except that of Captain Amyrauld."

"Sixteen days in the year being insufficient, under ordinary circumstances to acquire or keep up a knowledge of artillery, I recommend thirty-two days—sixteen in camp and sixteen at headquarters—if funds are available to meet this expenditure."

"The field batteries appear mainly to depend upon the energy and skill of their commanding officers, and to a certain extent upon the amount of money they are willing to spend. I need not point out the inadvisability of depending on a system in which there is no chain of instructional responsibility. No officers, non-commissioned officers, or men of the Montreal Field Battery have attended the Gunnery School at Quebec, which the nature of their daily avocations, I am informed, renders it impossible, nevertheless, it is essential that a certain proportion of the officers and men of this battery should go through a short course. If this Battery is to be armed with modern weapons, as I recommend should be done, I think it would be well to utilize the 6 pounder gun sleighs in store at Quebec, which could easily be converted to suit the new 8-pounder muzzle-loading rifle guns at trifling expense, there being a broad bearing for quoins instead of elevating screws."

SHEFFORD FIELD BATTERY.

"The Shefford Field Battery has lately been raised by Captain Amyrauld, who obtained a first class certificate in "B" Battery School of Gunnery."

"The whole of his officers, non-commissioned officers and men, on joining, were totally ignorant of artillery; yet he succeeded in imparting foot drill as well as gun drill, and a fair amount of gunnery, as well as good discipline, with the assistance of Capt. Duchesnay and the non-commissioned officers of "B" Battery School of Gunnery detachment. This battery was accommodated in Barracks at St. Helen's Island. I inspected their rooms, and found them clean and in good order. The conduct of the men was very good and their physique is fine."

"They are mostly farmers from the frontier, owning horses, and admirably suited for field artillery. It is hoped they will soon receive an equipment of rifle guns, as it is most important that this and the LaBeauce Battery be made efficient. They are both on the frontier, and composed of admirable material—the latter French speaking—the former an English speaking agricultural class."

[To be Continued.]

TACTICS OF FIELD ARTILLERY.

In an article published on this subject in the *Broad Arrow* of the 30th November, 1872, we remarked upon the difficulty connected with obtaining reliable information as to the minute details of the employment of artillery in the field. All information which can be obtained on this important subject cannot fail to be both valuable and interesting, and we are indebted to the celebrated Austrian military publication edited by Colonel Baron von Streffleur, for some excellent articles on "The New Tactics of Field Artillery." These articles were the result of a prize of £50, offered by the proprietors of this review, for the best essay on this subject, and as it is one of such great importance we do not hesitate in presenting our readers with a translation of them.

Since the adoption of rifled artillery, and of the *metériel* appertaining thereto, it has played a part in three different wars, whence a great amount of experience has been derived, which has contributed to elucidate all the questions relating to the tactics of artillery. To speak properly, when the war 1870-71 began, one had no longer to hunt for these tactics; they had become a doctrine which had caused the value of the new artillery to be brought forward in quite a characteristic way. Rifled artillery has become indispensable to modern combats; tactics in general will find future in its employment and indispensable complement, and one which it would have asked for in vain from the smoothbored cannon, or from any other system which is alone capable of firing at short ranges. Since the importance of muzzle-loading small arms has been acknowledged when compared with the Prussian needle gun, every exertion has been made to support infantry in an efficient manner by means of artillery. With this in view, the latter must accompany the former more directly, and strengthen their action by as murderous a fire as possible at the decisive moment of the fight. Farther experiments having in view the improvement of sharpshooters or case fire must be made as at present there is no other means of employing the latter, except one makes use of smoothbored cannon. From the day when breechloading small arms were adopted by all the military powers, infantry tactics have been totally altered; case fire had to be given up, and it was immediately understood that the true way to solve the question consisted in taking proper advantages of the eminent qualities of the rifled cannon, viz., its long range and its accuracy of fire.

On the other hand, and as a natural consequence of the fire of rifled guns, the idea was suddenly formed of profiting by their accuracy at great distances, to place the artillery in a zone where it would have no longer anything to fear from the other arms, whilst continuing to take part in the fight.

The principles of the new tactics of artillery have shown the justice of these ideas; they establish the fact that it is as exaggerated for the artillery to accompany infantry into that zone where musketry fire has all its efficacy, as to cause artillery to keep back until it is completely withdrawn from the action of the other arms.

Infantry fighting, as it ought to be at the present day, imposes totally new obligations upon artillery. Formerly, it was the cannon which paved the way for the columns of attack; its intervention was necessary on account of the impotence of the infantry fire. One was satisfied with the short ranges of smoothbored pieces, because the extent

of the battle field was in general much smaller than at present. Besides which, the combatants were assembled in a much more compact manner. It must also be remarked that the most essential thing for smoothbored cannon was ground as little broken as possible, and favourable to the acting of the rolling round shot. Nowadays, when battle fields cover an immense extent of ground, the great essential accuracy of fire; on the other hand, the extensive range of the infantry arm, and its murderous effect, obliges artillery to withdraw itself for the greater part of the time to that distance where it will be safe from the efficacious fire of small arms; at the same time, however, it must not be too far off. If, then, the infantry demands that artillery should serve as its support, it can only ensure under the condition that the efficacy of this arm extends over a much longer space than that of the rifle.

If one examines with attention the progress of the artillery combat during the battles of 1870-71, one perceives that it develops itself with a certain uniformity from the commencement of the action up to that instant when it terminates. One may say that artillery performs its part there during the whole time with an intense and sustained activity.

From the commencement of the action, the attack and the defence push forward considerable forces, with the object either of favouring the tactical deployment, or else of opposing it. At this moment a certain action *en masse* may always be allowed, when the imposing artillery force fires upon the tactical object which has been well decided on.

As the combat continues to develop itself by degrees, it will be allowed, moreover, that the assailant endeavours to push his batteries more and more to the front, whilst the adversary, in order to defend himself, makes every effort to increase the number of his own batteries, consequently the objects to be fired upon change at certain moments. Whilst admitting that the principal action of artillery is this working *en masse*, one cannot help seeing that the French and the Germans also knew how to take advantage of their artillery in an *apropos* manner during certain secondary episodes of the battle, adding, for instance, one or more batteries to bodies of infantry charged to execute some especial task upon a given point. The battles of Metz, those of Woerth and of Spicheren, present numerous examples of this; one sees first of all a grand line of artillery outlining, so to say, the whole front along which the battle is extended, whilst individual batteries follow in their diverse phases the engagements of the infantry. Is the *dénoûment* at hand, all these batteries redouble their activity, as has always been the case; is it a question of pursuing the enemy; the artillery, far from slackening its fire, redoubles its efforts, and sometimes takes the whole onus upon itself, as it did at Sedan. To recapitulate, what characterises the rôle of the artillery during the battle is, that it prepares, by the aid of its fire, the combat for the other arms, or else it accompanies—as well by separate fractions, and while conforming to its movements—the infantry to which it gives by its moral effect, solidity and security.

But the artillery must not refuse to admit that even in the war of 1870, it was never able to obtain decisive results by itself; this then, is a principle, viz., that it ought to do everything for the infantry; it should be constantly preoccupied in endeavouring to second, its efforts.

The tactics of artillery comprise two sub-

divisions or chapters—one will be entitled the carrying out of its fire; the other, the execution of its movements. This division may be accounted for in accordance with this consideration that artillery makes use of *material* established under certain technical conditions, and that moreover, the *material* is endowed with mobility. For its personal protection, artillery can only count upon the other arms, but it is especially when moving that it is without defence. This circumstance, and the role of support which it has to play in connection with the other arms, form the basis of its tactics, and from thence result the principles which regulate the execution of its fire and of its movements. Given the complication of artillery *material*, it is natural that a special place should be reserved in these tactics for the manipulation of the cannon, the said cannon being considered independently of any changes of position that it may undergo during the combat. This is what we may designate as the professional point of view. The ensemble of the conditions to which the guns are made subordinate, either during the fight or else in their relations to the other arms, will be summed up in that which we shall name the tactical point of view, properly so called. We cannot without transgressing the limits which we have imposed upon ourselves, enlarge *ex professo* upon the technical questions, implicitly comprised, under the first point of view; it is sufficient to say that all the efforts of artillery, when it has once commenced to fire, should be directed to one simple end, *i.e.* accuracy. When the firing has been once regulated, the greater the number of shots fired, which are precipitated exactly upon the desired spot, the better is the field of battle prepared for the infantry. The importance which this element "accuracy" plays in the general result is so great that one can never be satisfied with what the *material* which one has at disposal performs; for one may well acknowledge that, in this respect, science and technology have not by any means, exhausted their resources.

The action of artillery still depends upon the quantity of ammunition which one has at one's disposal, and on the manner in which it is expended. For it must be allowed that artillery without ammunition is not only useless, it is then nothing else than an embarrassment to the other troops. The capital point is then economy of ammunition and the great object of the tactician should be to regulate its employment, to organize reserves of it, and a good means of replenishing it. When the artillery is no longer anything to fire, it ought to leave the field of battle, in order to avoid the serious prejudice which would ensue to the rest of the troops were they still to believe in that support which it was no longer able to give them. For these fractions the replenishment of ammunition is often impracticable, owing to the impossibility which often arises for the artillery to communicate with its reserves and depots. Under these conditions from the moment when the artillery finds its ammunition boxes to be empty, it becomes for the troops who accompany it a source of preoccupation, embarrassment, and even of disaster. When, therefore, there is a question of forming a detachment of this nature, one should first examine carefully what advantage is likely to ensue from adding a certain number of batteries to this detachment; and on the other hand, compare with this advantage the situation which the corps would find itself in if the artillery should come destitute of ammunition, or

also obliged to be very sparing in its use. The mode of action of artillery presents characteristic differences, according as it is a question of an offensive, or of a defensive battle. In the latter case the choice of positions made from a professional point of view accords in general with the tactical interest; it is the artillery which will form the framework of the front of the battle. Also from the commencement of the action, care must be taken to bring as many guns into action as possible, in order to stop the adversary in his deployment. Moreover, it is necessary, and it is most important to keep a respectable force of artillery in reserve, which at the decisive moment, may assist in bringing to its maximum the intensity of the fire or else, the forces of the artillery, being scattered at the critical moment, the consequence will be that their action will become enfeebled, and all the efforts of the defence will become paralyzed.—*Broad Arrow*, April 26, 1873.

CORRESPONDENCE.

The Editor does not hold himself responsible for individual expressions of opinion in communications addressed to the VOLUNTEER REVIEW

MONTREAL.

(FROM OUR OWN CORRESPONDENT.)

The Annual meeting of the Provincial Association was held last evening at the Mechanic's Institute, Colonel McEachern presiding.

The reports of the Secretary and Treasurer were very satisfactory.

The following is the result of the election of officers:

President.—Col. C. J. Brydges,
Vice Presidents.—Messrs. A. Allan, R. Hamilton, A. Gilmour, Lieut. Col. McEachern, Lieut. Col. King, Lieut. Col. Grant, Lieut. Col. McKay, Lieut. Col. Bailey, Lieut. Col. Hickson, Major Alleyne, and Capt. Esdaile.

Treasurer.—Major D. T. Fraser.

Executive officers.—Major Worsley, and Capt. Hon. M. Aylmer.

Auditors.—Lieut. Col. McEachern, Lieut. Col. Bacon, and Lieut. Col. Hanson, also a numerous Executive Committee.

The annual matches will open on the second day of August next; a Committee was empowered to collect the necessary subscriptions. It was resolved that the competition for the Wimbledon Team should be confined to the active militia, as a detachment, which under the command of an officer selected by the Adjutant General, should proceed to England.

At the finish of the competition for Wimbledon Team, the following were the highest scores:

Sergt. Shaw, 54th Batt.....	245
Private Boyd, G.T.B.....	240
Capt. Morgan, 8th Batt.....	240
Sergt. Crofton, Three Rivers.....	246
Major Worsley, M. Staff.....	235
Lieut. Andrews, V.V.R.....	235
Private Mills, 30th Batt.....	232
Sergt. Baxton, 8th Batt.....	231

The news of the death of Sir George Cartier has caused universal regret, and flags on public buildings for several days has been at half mast, in memory of the distinguished statesman deceased. B.

REVIEWS.

The *Edinburgh Review* for April has the following articles:—Trade Routes to Western China; Maury on Sleep and Dreams; Cook's Life of Gen. Robert E. Lee; Drunkenness, Abstinence, and Restraint; Sammarow's for Sceptre and Crown; Cost and Consumption of Coal; Darwin on Expression; Religious movement in Germany; The Claims of Whig Government. Reprinted by the Leonard Scott Publishing Company, 140 Fulton Street, New York.

A FITTING HONOR.—The *Ottawa Free Press* leans by special cable telegram last evening that the British Government have decided to send the remains of the late Sir George Cartier to Canada, on board Her Majesty's ironclad *Northumberland*, with a consort. This is a fitting honor to the distinguished dead, and is a compliment to Canada, which all native Canadian fellow citizens will appreciate.

DOMINION OF CANADA.



MILITIA GENERAL ORDERS.

HEAD QUARTERS,

Ottawa, 23rd May, 1873.

GENERAL ORDERS (11).

No. 1.

MILITIA STAFF.

Israel Wood Powell and Joseph Alfred Norbert Provencher, Esquires, to have the rank and status of Lieutenant Colonels on the Staff of the Militia of the Dominion, whilst serving as Indian Commissioners.

LEAVE OF ABSENCE.

Leave of absence for six months, on medical certificate for the recovery of his health, is granted to Lieutenant Colonel Hewitt Bernard, C.M.G., extra Aide de Camp to His Excellency the Governor General.

ACTIVE MILITIA.

Corps on Service in Manitoba.

Adverting to No. 1 of G. O. (10) 16th instant, four of the new pattern Field Guns, with the necessary stores, will be supplied to the Artillery detachment on service in the Province of Manitoba, as soon as such are available for issue.

SCHOOLS OF GUNNERY.

In future when any non-commissioned

officer or man of "A" or "B" Batteries of Artillery, Schools of Gunnery, applies for discharge before the completion of his twelve months course, the application is to be accompanied with a certificate from the Captain of the Battery, that the applicant has lodged in his hands, as compensation for kit, a sum of money calculated in each case, at the rate two dollars per month, of unexpired engagement.

45th "West Durham" Battalion of Infantry.

No. 6 Company, Lindsay.

To be Lieutenant:

Ensign David Nesbitt Morrison, V.B., vice George W. Searle, whose resignation is hereby accepted.

49th "Hastings" Battalion of Rifles.

Ensign and Adjutant James S. Hurst, V.B., to have the rank of Lieutenant.

No. 3 Company, Sydney.

To be Ensign provisionally:

Sergeant John Graham, vice Theodore Foster, who is hereby permitted to retire retaining rank.

56th "Grenville" Battalion or "The Lisgar Rifles.

No. 5 Company, Ottawa.

To be Captain, provisionally:

Robert Charles Wilkins McCaug, Esquire, vice Joseph R. Esmonde, whose resignation is hereby accepted.

59th "Stormont and Glengarry" Battalion of Infantry.

No. 5 Company, Farian's Point.

To be Lieutenant:

Ensign Simon P. Shaver, M.S., vice Joel Adams, who is hereby permitted to retire retaining rank.

BREVET.

To be Major:

Captain James W. Tannet, V. B., No 6 Company 15th Battalion, as a special case, in consideration of the length of time since his first appointment as Captain and his having rendered efficient service in organizing Militia Corps.

LEAVE OF ABSENCE.

Lieutenant Colonel A. G. Forrest, Ottawa Brigade G. A., for three months from 15th instant, on private affairs.

Major and Brevet Lieutenant Colonel Ernest M. Peel, 12th Battalion, for four months from date of embarkation, to visit Europe on private affairs.

CONFIRMATION OF RANK.

Captain Robert Green, M. S., No 7 Company, 39th Battalion, from 4th April, 1873.

Captain Franklin M. Carpenter, M.S. No 5 Company, 77th Battalion, from 10th April, 1873.

Lieutenant Jacob Watson, M. S., No. 7 Company, 39th Battalion, from 15th April, 1873.

2nd Lieutenant Charles Edwin Britton, G. S., Gananoque Field Battery, from 28th April, 1873.

Ensign Samuel Robinson, M. S., No. 7 Company, 31st Battalion, from 4th April, 1873.

PROVINCE OF QUEBEC.

Beauce Field Battery of Artillery.

To be 2nd Lieutenant, provisionally:

Charles Edmond Juchereau Duchesnay, Gentleman, formerly Lieutenant of No. 5 Company, 23rd Battalion.

"B" Battery of Artillery and School of Gunnery, Quebec.

The following officers are authorized to join the School of Gunnery, Quebec, on probation for a three months course of instruction: 2nd Lieutenant William Henri Brouage, Chaussegres de Lery, Quebec Field Battery, and 2nd Lieutenant Charles Edmond Juchereau Duchesnay, Battery.

County of Quebec Provisional Battalion of Infantry.

To be Paymaster:

Lieutenant Jacques Robitaille, M. S. from No. 9 Company, vice Joseph O. Bourrett, whose resignation is hereby accepted. No. 2 Company, Ancienne Lorette.

To be Lieutenant:

Elzear Charest, Gentleman, M. S. vice Jacques Robitaille, appointed Paymaster.

Beaucour Company of Infantry.

Erratum in No. 1 of G. O. (3) 28th February, 1873, read; "To be Lieutenant. Louis Landry, Gentleman," instead of "To be Ensign."

CONFIRMATION OF RANK.

Lieutenant G. Etienne Lache, M. S., No. 4, Company, Kamouraska Provisional Battalion, from 14th March, 1873.

Ensign Joseph C. Henault, M. S., No 4 Company, Three Rivers Provisional Battalion, from 5th April, 1873.

PROVINCE OF NEW BRUNSWICK.

67th Battalion or "The Carleton Light Infantry."

Captain and Paymaster John D. Ketchu to have the Honorary Rank of Major.

CONFIRMATION OF RANK.

Captain Amos Dow Hartly, M. S., No. 9 Company, 67th Battalion, from 15th April, 1873.

Lieutenant Charles White, M. S., No 2 Company, 67th Battalion, from 12th April 1873.

Ensign Andrew Waugh, M. S., No 1 Company, 71st Battalion, from 23rd April, 1873.

Memo.—Adverting to No. 1 of G. O. (21) 20th Sept., 1872, 2nd Lieut. Joseph Ewing, of No. 3 Battery, N. B. Brigade, having obtained a Second Class Military School Certificate on 28th March 1871, his rank is confirmed from that date, instead of 26th August, 1872.

CERTIFICATES

SCHOOLS OF GUNNERY.

The following Officers, Non-Commissioned Officers and Gunners of Artillery, have received Certificates from the Commandant of the School of Gunnery at Kingston:—

PROVINCE OF ONTARIO.

FIRST CLASS CERTIFICATES.

Regimental Divisions.	Names.
Leeds, S. R.,	—Captain William McKenzie, Gananoque Field Battery.
do do	—2nd Lieut. Charles Edwin Britton, Gananoque Field Battery.
Ottawa (City of.)	—Sergeant A. Greisbach, Ottawa Field Battery.
do do	—Corporal George Dagg, Ottawa Brigade Garrison Artillery.
Toronto (City of.)	—Bombardier, Chs. Galle, Toronto Field Battery.
do do	—Gunner J. S. Oades, Toronto Field Battery.

SECOND CLASS CERTIFICATES.

Regimental Divisions.	Names.
Leeds, S. R.,	—Gunner William Wilkinson, Gananoque Field Battery.
Ottawa (City of.)	—Corporal Chs. Chester, Ottawa Brigade Garrison Artillery.
Toronto (do)	—Gunner Thos. Gibbons, Toronto Field Battery.
Welland,	—Sergeant R. De Gen, Welland Field Battery.

By Command of His Excellency the Governor General.

P. ROBERTSON-ROSS, Colonel, Commanding the Militia of the Dominion and Adjutant General.

CONTENTS OF No. 20, VOL. VII.

POETRY.—

The Bivouac of the Dead..... 25

EDITORIAL.—

Military Responsibility..... 213
 Musketry..... 215
 Battle of the Guns..... 215
 Indian Troubles in the North West..... 216
 Republican Mal-administration..... 219
 Reviews..... 220
 The News of the Week..... 227

CORRESPONDENCE.—

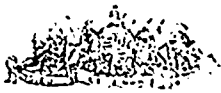
Old Volunteer..... 232

SELECTIONS.—

Annual Report of the State of the Militia for 1872..... 230
 The Bakery Instruction of the German Infantry..... 231
 Quebec Squadron of Cavalry..... 231
 Hastings Rifle Association..... 234
 Formations for Attack..... 238
 Reconnaissance of the North West Provinces and Indian Territories of the Dominion of Canada..... 227

REMITTANCES..... 240

MILITIA GENERAL ORDERS..... 233



The Volunteer Review,

AND

MILITARY AND NAVAL GAZETTE.

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

OTTAWA, TUESDAY, MAY 20, 1873.

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

The most profitable *professional* study to which a military aspirant can devote his attention is to be found in the lives and action of those great soldiers who have passed away, as far as they are connected with the art of war; ethically, politically, socially, or religiously, it will not in all cases be safe to follow examples whose virtues were developed on the field of battle.

There is perhaps no contest on record which afforded greater scope for the development of all the qualities requisite to form a great soldier, than that between the Northern and Southern States, and as a consequence more than one soldier has written his name in deep as well as lasting characters not only on the pages of history but on the records and practice of the art of war.

Prominent amongst the unknown soldiers who rose to fame during that contest, and probably as a soldier superior to them all stands the fame of the late General ROBERT E. LEE, the chieftain and representative of the lost cause, the great leader of the troops of the Southern Confederacy, and the successful engineer that encircled the capital of that evanescent power within an encircling of forty miles in length which no force his eventual conquerors could bring against it was able to penetrate.

The *Edinburgh Review* for April has an exhaustive and well written article on his life and military career, and as it is said to own as author, Gen. CHAS. C. CHESNEY, R.E., it will be instructive to learn in what light the professional career of the late Confederate General is viewed by a distinguished officer of a kindred arm of the British Army, especially as it is reasonable to assume the writer's matured judgment is not likely to be swayed by political or other considerations which might obscure his decisions, and no doubt would have weight with the partizans or opponents of General LEE, therefore, although two very valuable works, one on the subject of the career of that distinguished officer and the other on the general history of the civil war in which he attained eminence, are quoted the main facts of the narrative, and the conclusions arrived at are nearly altogether original.

The *Reviewer* opens his article with a well drawn pen picture of the condition of the Southern States since the close of the late contest, the utter disorganization of social order and the misgovernment which has produced it, while the condition of those who sacrificed their prospects and property on the altar of disinterested patriotism, and who like the subject of the article bowed their heads in submission to the adverse arbitrament of the sword and loyally fulfilled the obligations it imposed are limned with great power and effect. General ROBERT E. LEE was the son of the famous cavalry officer, HENRY LEE, who distinguished himself during the "Revolt of the British American Colonies" (circa 1775-84) as the descendant of a cavalier fighting against his Sovereign, and thus setting the example of that disregard of authority which culminated in the attempt of the Province of Virginia, the foremost sympathizer with that rebellion taking the lead, eighty-five years later in the endeavour to dash in pieces by another rebellion the power created by its former act of treason.

Gen. CHESNEY professes to give as a sufficient cause of condemning the British Government, the unanimity with which the Virginia planters supported their local independence during that contest, not staying to consider that they were equally unanimous in their attempts to break the *Union* which the mistaken humanity of that very Government allowed to be founded, and that they met with the reward which all evil doers deserve.

General ROBERT LEE was born in 1807, entered the United States Military Academy at West Point in 1825, and when his class graduated in 1829 he took the second place, becoming a lieutenant in the Corps of Topographical Engineers the elite of that arm of the service in the United States Army, and we believe in this respect totally unique. Three years afterwards he married MARY CUSTIS, the daughter and heiress of GEORGE CUSTIS, WASHINGTON'S adopted son and the only son of his wife by her first marriage, by this union, Lieutenant LEE came into possession of WASHINGTON'S hereditary estate, and his nearest representative before the world; this fact coupled with the traditions of his own family are noted as illustrating "his painful position at the outbreak of the civil war."

In 1846 the Mexican war afforded LEE, who had now risen to the rank of captain, the first opportunity for distinction; he was appointed chief engineer to the Army under General SCOTT, went through the campaign with great distinction and was three times specially brevetted for services in the field. From the close of this war till 1855 he was engaged in the discharge of his duty as engineer officer, superintending the coast defences, and in that year two regiments of cavalry were added to the United States Army he was appointed Lieutenant Colonel, commanding the Second Cavalry, amongst his officers were "ALBERT JOHNSTON, whose death lost the Confederates their advantage at Shiloh, and it has been declared saved GRANT'S army from ruin; THOMAS and STONEMAN, in after days leading Generals on the Northern side, with HARDIE, VAN DORN, KIRBY SMITH, and HOOD, who were equally well known on that of the South."

In 1859 he was engaged in the capture of JOHN BROWN and his gang at Harpers Ferry, the prelude to the civil war which followed with startling rapidity, if the *change of sentiment* (provided that is the proper definition of what we take to be the culmination of selfish egotism—treason) was very remarkable in the *Virginians* of 1775, it was no less so in those of 1861. In December of the previous year South Carolina had passed her famous Ordinance of Secession consequent on the election of ABRAHAM LINCOLN to be President of the United States, and because "the extension of the area of slavery" was likely to be restricted to South of MASON and DIXON'S line (36deg. north latitude) and not because it was a question of emancipation pure and simple with either North or South. On 17th April Virginia passed her Ordinance of Secession, and we can well believe that "To none of her children was the crisis a severer trial than it was to Col. LEE," but we cannot accept the reasoning of the talented writer in this case; Virginia, no doubt had been an *independent* colony, if such a relation can exist, but General LEE, Light horse Harry as the United States writers love to call him, the father of Colonel LEE,

had helped to extinguish that peculiarity and to hand over the interests of a free colony from the paternal government of a monarch to the tender mercies of the rabble of a pure republic, and the Colony State or individual was only reaping the benefit of its community or progenitors political sins. It is all very well to give magniloquent names to very common and vulgar crimes, but BRONX says "one sad losel soils a name for an ay" and we cannot see the difference between public and private in this case, COL. ROBERT E. LEE, as a soldier owed allegiance to the United States, no earthly consideration should have weighed with him or could absolve him of that responsibility except the deliberate action of the United States executive and nothing could justify him in taking up arms against her. It is we are happy to say the only blot on the escutcheon of a noble and gallant soldier, a brave man and to sum up in a single word the total of all human virtues—a christian—but it is a blot and a foul one, nevertheless, no special pleading will avail, a soldier is not nor cannot be a politician, his duty is simple and plain and was well illustrated by England's great Admiral BLAKE who, when officially informed of CROMWELL's usurpation, mustered the officers of his fleet and after reading over the general orders announcing the change of Government remarked, "it is none of our business, we are to take care that no foreigners fool us," although it is well known that his convictions of duty were at least as weighty as those of Colonel R. E. LEE.

The organ of a growing military power we wish to impress on our readers the sacredness of the obligation they impose on themselves as military men, members of a representative social fraternity, there are no internal evils which can possibly affect the State which cannot be remedied without military interference, the guardians of social law and order in British Constitutionalism, the soldier plays the part of enforcer of the law, not its administrator or originator, and no case can possibly occur where it will be left to his option as to the course his duty demands he should pursue, the utter failure of all law and order in ancient or modern history has been and is due to the fact that the soldier became a politician, and the case of the distinguished General under consideration is no exception to this general and stringent rule. Soldiers may have interposed as MONCK did in re establishing lawful authority, but that is altogether a different case from the attempt to subvert it in which no soldier should join.

States that are content to be ruled by such political puppets as ABRAHAM LINCOLN, JEFFERSON DAVIS, and ANDREW JOHNSON, must make up their minds to encounter the consequences of that egotistical individuality which is the plague spot of the period, and as a rule, have all their servants assume the right to call in question the best considered

acts. In all, such a political and social crisis will be of periodical recurrence, and a repetition of events of the Northern and Southern contest imminent. A proportion of its trained subordinates ranging on one side or the other. It follows that states governed by democratic institutions like the United States, are regularly engaged in training a part of their subjects to rebellion, and imparting to others, the scientific, as well as practical knowledge to make it effective. The fruits of this course was reaped in the civil war between the Northern and Southern States.

At the period when it was evident that a contest must take place, Lieut. Colonel LEE, the most prominent officer in the United States army, the destined successor of its Commander in Chief, thought proper to place his resignation in the hands of the latter, and to retire to his native State. It is not for us to analyse his motives or sources of action; they are only to be explained by the peculiar political education the institutions of the United States are calculated to impart, and if he had remained neutral throughout the contest, his fame would not have burned so brightly, but he would have left no example of a soldier forsaking his colors, to future generations. It is the only spot in a great, as well as splendid career, and it only illustrates the truth of that aphorism, which declares "the path of duty to be the path of safety and honor." It is quite true, that the career he pursued involved large, and almost unexampled sacrifices, and it redounds to his eternal honour that those were accepted without hesitation, and however we may deprecate the error of judgment in the soldier, due in a great measure to early training and association, we cannot but admire the general and the chieftain, and accord the praise due to a brave prudent, but unsuccessful commander, the latter by no fault of his own. On the 20th April, three days after Virginia adopted her Ordinance of Secession, Lieut. Colonel LEE sent his resignation to General SCOTT at Washington, and immediately set out for Richmond. On his arrival there he was appointed Major General in the Confederate forces, and intrusted with the task of fortifying the capital; how well he accomplished that difficult feat, reflects equal credit on his genius and ability, and on the school in which he was trained, but it was not till McCLELLAN's force were in dangerous proximity that his military capabilities were tested, as the President of the Southern Confederacy affected to look on him as a mere Engineer.

The effect of placing him in command, is well known. The *Little Napoleon* of the day, to whose great military abilities General CHESNEY pays a just tribute, was foiled and driven back, and the reputation of General LEE shows till the final catastrophe with a brilliance that fairly eclipsed all other competitors.

A perusal of this article will satisfy the military reader of the great cause of the Federal success, which might be summed up in the single word—discipline—as the want of it was the primary cause of Confederate failure. And this brings us to one of the most remarkable passages in the article under review. Speaking of the first battle of Bull's Run, which appears to have been gained by the Confederates, by the steadiness of JOHNSON'S troops alone, Colonel CHESNEY says: "And as we laughed so long and loud at the behaviour of the raw militia of McDOWELL, when once in retreat, it is well to add that there is not the least reason to believe, judging from the testimony of Southern officers, that their men would have behaved one whit better had the reverse been on their side. More than this, those among ourselves who know most of war, are agreed that however highly one may think of the spirit of the levies we call our Auxiliary Forces, there is no ground whatever, beyond a vulgar national vanity for the common belief, that a mass of those once beaten, and panic-stricken, would show conduct very different from that of McDOWELL'S volunteers, or of the Mobiles of the Army of the Loire. Nations deceive themselves much in this matter of their untrained troops," was the remark recently made by the Chief of the Swiss army—one composed wholly of Militia men. And what is true of Frenchmen, of Swiss, and of our own kith and kin in America would hardly be falsified if misfortunes fell upon ourselves."

We quote this as the opinion of a soldier of eminence, and one every way worthy of serious consideration. To return to General LEE'S career it is so well known that it does not demand a lengthened notice at our hands, the prominent points are touched in the *Edinburgh Review*, and the final collapse of Southern resistance, found its great General in a painful position, obliged with the humiliation attendant on want of success to abandon property as well as position, and hereafter, for the rest of his days, to be known only as the head of the principal collegiate Institution of his native state, and the preacher of patience and peace to its conquered people. His last words to his army after the memorable surrender "men! we have fought together through the war, I have done the best for you I could, my heart is too full to say more."—will long live in the pages of history as the utterances of a great heart broken by grief, and General LEE did not long survive the fall of the Confederacy; he was stricken with paralysis on the 23th September, 1870, in the act of saying grace at his evening meal and died on the 12th October, following.

Thus passed away a great man, a great soldier, and a true Christian, his virtues were many and his faults few, but his career is an instance of the truth of the aphorism we have before quoted. In his case the United States cannot be charged with harshness but should get credit for rare magnanimity.

"Know ye not that there is a Prince
And a great man fallen this day."

THE telegraph announcement that the Hon. Sir GEO. ETIENNE CARTIER, Bart., Her Majesty's Minister of Militia and Defence for the Dominion of Canada, died at 6 o'clock on Tuesday morning last in London, was received throughout Canada with unfeigned sorrow, and by his numerous personal friends with heartfelt grief. As a statesman, legislator and administrator, he was undoubtedly the foremost man on this continent, the greatest and most illustrious native Canadian. By his death Her Majesty has lost a loyal and devoted subject, as well as honest adviser; the British Empire a conscientious and energetic friend, and Canada has to mourn the patriot, the legislator, the statesman, whose energy, ability, political wisdom and rare self abnegation enabled him to take the lead in combining the jarring interests of the British North American Colonies and elevating his native land to a place amongst the nations of the world, with all the chivalrous honor of the gallant race to which he belonged, Sir G. E. CARTIER'S political career was marked by a scrupulous regard to veracity, a total disregard of selfish considerations, and the few personal enemies he has left behind him; a sound constitutional lawyer, an eloquent and forcible debator, he has written his name in deep and lasting characters on the history of the Dominion of Canada.

It is not necessary to enumerate his great public services, they are well known, and a more extended biographical notice must be deferred till the first shock of this great public loss has passed. The deceased Baronet was in his 59th year, being born at St. Antoine, on the Chambly River, County of Vercheres, on the 6th September, 1814. Our comrades of the Canadian Army will sympathize with our sorrow for the great man who has passed away.

THE Honorable, the Post Master General has introduced a bill to amend the 27th and 28th Section of the Militia Act of 1868, with reference to the calling out of the Militia in aid of the civil power. The Warden Mayor, or other head of any Municipality, or any two Magistrates, on representation being made that the civil force is unable to enforce the provisions of the law, or in anticipation of disturbances, may make a requisition on the commanding officer of the nearest local corps in writing for assistance, stating clearly the precise nature of the case.

This amendment also provides, that while on service, the troops are to be paid by the municipality at the rate of one dollar per day for the rank and file, and officers to have the same pay as the corresponding rank in the regular service. Quarters are also to be provided, and if the municipal authorities should refuse to pay, the commanding officer is empowered to proceed against them in his own name for the recovery of the full cost.

The last and most important section provides for the calling of court martials in the locality, where offences are committed by members of the force, and a proviso is attached that no officer of Her Majesty's regular army on full pay shall sit on such court martial.

Those amendments are in the right direction—if the aid of the soldier is required, he should be paid for his services—the country has already seen enough of the subterfuges resorted to by municipalities to shirk responsibility in similar cases, but it would have been better if the sheriff was empowered to levy at once on the representation of the officer in command, such a course would undoubtedly tend to simplify matters, and prevent all attempts at trickery, which is very frequent. Municipal authorities often holding the idea that the public money has been put to worse uses than litigation. We should be rejoiced to see any measure of justice to the Volunteers, the political economists being busily engaged in the effort to deprive them of any value to the country by starving them out. The provision for courts martial is also a valuable improvement, and one much needed, for the welfare of the army.

WE give our readers in this issue of the VOLUNTEER REVIEW an article from *Broad Arrow* of 26th April, on the "Tactics of Field Artillery" and it would appear that the only really important difference which rifled artillery has introduced, is that "Field Artillery" by its superior range has been enabled to occupy a position outside the range of effective musketry fire. Under the old regime artillery was generally advanced to prepare the way for infantry attack, case and shrapnel was largely used, and when the adverse columns were deemed to be shaken, the infantry at one hundred yards decided the contest. The range of case and shrapnel under the new system, would bring artillery within effective infantry fire and the guns would be useless. Therefore, case and shrapnel must be abandoned, or a substitute therefor provided. At present field artillery can only use solid shot, hence many military men looked to the new weapon, the *mitrailleuse* as a valuable auxiliary, but as its range is not greater than the breech-loading rifle, the problem of a substitute for case and shrapnel to be fired from rifled guns appears to be yet unsolved. It is evident, however, that the change in tactics is almost wholly confined to the relative position of the guns which is now well in the rear of the line of battle without the zone of the effective Infantry fire, and in such a position, that advance or retreat ought to be easily attained, and from the great range as well as accuracy of fire, the decision of an action must be largely influenced by the quantity, quality, and efficient handling of Field Artillery.

If through its own weakness, or the failure of its covering infantry, it is brought within the range of effective rifle fire, it will be not only rendered useless, but its removal from the field will be a doubtful problem indeed. We cannot see on the whole that science or mechanical skill has enabled the artillerist to do more with his rifled gun, than was effected by the old smooth bore. The rifle in the hands of the infantry soldier compelled the change which was for the benefit of the artilleryman.

Our neighbors south of the 49th parallel are at last arriving at the conclusion, that experiments in artillery, however well conducted in foreign countries, are not eminently adapted to furnish the full information requisite to the adoption of any type yet produced, as the weapon for national armaments; they, however, leave to private enterprise what should be a matter of purely public concern, and the future can only tell how far results will warrant such a course. The following extract descriptive of the manufacture of a new weapon, is remarkable for the novelties it presents.

"In the fabrication of the large Hitchcock cannon, about to be manufactured at the water shops, says the *Springfield Republican*, it is necessary that the iron should be heated in a reverberatory furnace, to avoid its contact with sulphur and other impurities of coal. The gun is to be formed of rings of wrought iron or low steel, made without welds, the rings so formed as to be united first in the centre, that the superfluous cinder may be squeezed out. The anvil which is to receive the blow of the steam hammer is to be seated on the piston of a hydrostatic press, so as to be lowered as each successive ring is added to the gun, during the process of forging. The furnace is to be situated between the anvil and the steam hammer, and so arranged that the ring projects into it from below, and the hammer drops into it from above. The ring to form the muzzle of the gun is laid upon the moveable anvil, and is projected sufficiently into the furnace to allow the flames to raise it to a welding heat. Meanwhile, in another part of the furnace, the rings are heated to welding pitch at the same time by proportioning the heat by means of dampers, to the relative bulk of the two parts. Without removing the parts from an atmosphere in which there is very little, if any oxygen, they are laid together and instantly welded together by a few strokes of the steam hammer. The anvil is then lowered the thickness of the ring thus welded on, and the same process repeated, until the entire gun is forged. One advantage Mr. Hitchcock has in his plan over all others is, that he never under or over heats the metal the temperature being regulated in either furnace by the turn of the hand, so that an even temperature may be maintained for hours if necessary, thus avoiding oxidizing, as the welding surface is not exposed to the atmosphere. The plunger or ram is to be made of cast iron, eighteen inches in diameter when turned, and fourteen feet long, with the head fitted to receive the anvil block. This plunger will weigh five tons. The anvil block proper will consist of a solid block weighing eight tons. Over the top of the anvil block will be placed several loose blocks, which will weigh 8,000 pounds. The rings with which the gun is to be built up are to be made at Pittsburg, Pa., and shipped to this city."

THE SPECIALIZATION OF SHIPS OF WAR.

(Translated from the Russian in the *Revue Coloniale et Maritime* for April, 1873.)

In the days of sailing fleets, vessels of war were distinguishable into two classes—ships of the line, and ships not of the line. This distinction was a perfectly natural one, inasmuch as the first alone, had their position in the line of battle predetermined and constituting, moreover, the fighting force *par excellence*, of the fleet: all the other vessels had a more or less specific destination, and, in accordance with this destination, their construction varied considerably. To the latter class belonged frigates, corvettes, brigs, schooners, and all sorts of vessels serving as fire ships and transports. All were absolutely dependent on the fleet, on the heavy mass of ships, which, from the very nature of its locomotive powers, was compelled to maintain a compact formation, under pain of not being able, when once dispersed, to get together again within a given time.

In the present day, the character of ships of war has altered so much, in respect both of their means of locomotion and their fighting powers, that the above classification has no longer any real significance. The size, the construction, the armament of vessels of war are now so varied that the manoeuvring of each requires rules of its own; besides, the introduction of ramming and of torpedoes will completely change the character of naval warfare in future, and give a personal initiative to the commanders of individual ships incomparably greater than they possessed before. Nowadays, the individual importance of each ship in a squadron has greatly increased; the dependence existing between the individual vessels of a squadron in their collective capacity has, on the other hand, materially diminished.

In the opinion of the majority of writers who have recently discussed the subject of naval tactics, *ramming* will play the most conspicuous part in future naval actions; now, ramming and the movements necessary to avoid attacks of this description, preclude the possibility of any regular formation, so that each vessel will be compelled to act for herself according to circumstances and with due regard to the means of attack and defence with which she is provided. But those means vary greatly; and consequently the rules for fighting individual ships must vary.

If we concede that it will be impossible for an admiral, or any other single officer to control the movements of all the ships under his command during an engagement, the problem to be solved in future naval actions will be to fix the general principles upon which the movements of individual ships should be based, so as to secure the maximum of military effect with the minimum of needless risk and exposure.

These principles are not identical in the case of ships of every class—on the contrary they differ very widely according to the size, construction, armament, &c. For instance, it can hardly be supposed that a monitor, an ironclad frigate, a gun-boat, and a wooden despatch vessel should one and all be handled in precisely the same manner under fire.

For each, according to the style of opponent with which she has to deal, there will be certain conditions, offering the greatest advantages, and which it is the duty of her commander to secure and turn to the best account. From this point of view, the study

of naval tactics would in future be limited to a consideration of the conditions under which it is most favourable for each description of vessel to engage a given class of opponent. But this would give us rules for the conduct of single encounters, (naval duels) only; and it would be impossible to stop short at this point. Other questions must therefore, be considered as well. These are: What descriptions of vessels are capable of acting in concert with the fullest measure of advantage? How should they act so as to impede each other's movements as little as possible, and at the same time inflict the greatest possible amount of damage upon the enemy? What description of vessel is most advantageous to employ under certain given circumstances against a certain given type of opponent.

These questions will have to be decided; but to this even it is indispensably requisite to have a well considered class classification of vessels based upon the exigencies of modern warfare. Such a classification existed in the past, and some of the questions involved were resolved in respect of the types then existent. The two principal classes, as we have said, were ships of the line and those not of the line.

It was a recognized principle that on the approach of the enemy the fleet should keep together, that certain types of vessel were indispensable to the constitution of a fleet; that for ships of the line the most advantageous formation was a single line of battle, from which all vessels not of the line should keep clear, that in engaging, each vessel, if superior to her opponent, should endeavor to get as close as possible to the latter; that the power of a vessel was measured by the weight of metal thrown by her broadside. At present all is unknown. General rules like the above have no existence. In proof thereof, let us attempt to discover what are the present equivalents of these rules, and we shall not only find that nothing can be formulated on the subject, but that nothing similar can exist. Let us consider each of these rules in turn.

Ought the vessels of a fleet or squadron to be brought together on the approach of the enemy?

The question appears at first sight to require an affirmative answer, but on a closer investigation of particular cases, it assumes a very complicated aspect. Let us regard it from another point of view.

Will cases often occur in which it will be expedient for two large fleets to come to a general engagement?

We are disposed to think that such cases will be of extremely rare occurrence, because the means of attack and defence are wholly changed from those of the past; and because also the facilities for manoeuvring have become vastly increased. With the existing means of defence, each fleet would have a secure refuge in its own waters, so that it would be impossible to compel it to engage against its will. But it does not therefore follow that a fleet thus circumstanced should remain in inactivity. In the face of a very superior force of the enemy, the ironclads would remain quiet, but then would commence the role of the small torpedo vessels and rams.

Would it be practicable for a fleet to keep the enemy's coast steadily in view, if the latter had a sufficient number of torpedo vessels, similar either to those built by Prussia during the late war, or to those now in course of construction at Washington, ready to attack it every night, or a number of armour plated rams of high speed, and nearly invisible in the dark?

With such means of defence available, the approach of an enemy's fleet, say in the Gulf of Finland, would be a sheer impossibility, more especially, if the vessels employed in the defence were so distributed that they could be warned at any moment by telegraph of the presence and position of the enemy, and act accordingly. Night after night one or more of the enemy would fall victims to the rams or the torpedo vessels. Where, then, would be the inducement to a fleet thus acting on the defensive to come to a general engagement? The employment of vessels of special types would render any such engagement unnecessary; and the concentration of the defensive force would be productive of evil rather than otherwise.

But, although dispersed, the ships could be massed at a given point, at any given moment, if need be, as the orders could be delivered to each of them almost simultaneously by telegraph; and the speed of ironclads under steam is little affected by the wind, so that in confined seas like the Baltic they may be regarded as almost independent of the weather.

It may here be observed that movements against the wind are much impeded by the masts and rigging, a source of great inconvenience in manoeuvring, not to speak of the risk in action of falling portions of the latter fouling the crews. We shall revert to this point further on.

To the question: Should the vessels composing a fleet be concentrated on the approach of the enemy?—we cannot therefore give an affirmative reply. The qualities and capabilities of each vessel must be considered separately, and she should be so posted as to develop these properties to the uttermost. The principal role will accordingly, be played by vessels specially constructed, for special purposes.

Taking other considerations into account, we shall also find that special types of vessel are best adapted to the solution of the problems above proposed. Powerful vessels for general purposes are very often incapable of giving the desired results at the right moment. Again, the construction of vessels of special types, as a rule, is infinitely less costly than that of others designed to answer a variety of ends, as in the latter the dimensions are necessarily greater, and withal the desired ends are not always attainable, as the possession of certain qualities interferes with or excludes that of others; so that vessels constructed for general purposes though formidable in appearance, and constructed at great cost, may not give the anticipated results in action—may, in fact, prove worthless, whilst other incomparably cheaper constructions will fully satisfy the tactical demands made upon them.

The late Franco German war supplies a remarkable illustration in point. The French fleet was perfectly useless, because it was composed exclusively of heavy armor-clad vessels, and was unfurnished with others of special construction, fitted to act in the shallow waters of the enemy's coast. On the other hand, the German fleet, although it comprised some very powerful vessels, never made the smallest attempt to raise the blockade of its coasts, because it had not a single vessel suited for rapid attacks, and the ironclads, the *König Wilhelm* included, were incapable of performing this service.

The next question—Of what types of vessel should a fleet or squadron be now composed?—must be deferred till a future opportunity.

HOPE ON.

Hope on; tried heart hope on!
 Though dark thy lot,
 Nor one brings spot
 To cheer thy lonely way,
 Let not thy courage fall thee;
 When doubts and cares assail thee,

Hope on!
 There shines a guiding star above, loon up and
 find its ray.

Hope on, brave heart hope on!
 Friends may deceive,
 And thou mayest grieve
 And mourn affectionless less;
 But do not yet despair, love,
 True friends like pearls are rare lone;

Hope on!
 And through the growing darkness, nobly, brave,
 thy bear thy cross.

Hope on, true friend, hope on!
 Let friends depart,
 One faithful heart
 Is fixed and constant still,
 Thou let this one thought cheer thee
 In spirit I am near thee;

Hope on!
 Thy star is watching o'er thee, to guard thee
 from all ill.

Hope on, sweetheart, hope on:
 By night and by day,
 For thee I pray,
 Till all my toils be past,
 These days so dark and drear, love,
 Are passing never fear love;

Hope on!
 The star of love prevails o'er all, 'twill bring
 thee joy at last.

THE GERMAN NAVY.

The German Government has just presented a memorandum to the Federal Council on the German Navy. It says that the claims which are made by Germans for naval assistance are every day becoming more numerous: the town of Hamburg has recently expressed a wish that the Fiji Islands, Liberia, and the African Coast in the Bay of Guinea should be purchased in order that German naval stations may be established there, and German merchants in all parts of the world are constantly asking for protection from German ships of war. "In considering," proceeds the memorandum, "what offensive force we require at sea we shall find that we have a numerous mercantile fleet scattered all over the world, and a relatively small extent of coast; that the navies of foreign Powers are very strong, but that, on the other hand, our coasts are but little open to a hostile landing. The length of all the German coasts taken together amounts to about 170 German miles, while that of the Russian coasts on the Baltic alone (not reckoning the Northern and Black Sea coasts) is nearly double. The coasts of France in Europe are even more extensive than those of Russia, and England's frontiers are all maritime." As regards the action of German in time of war, the memorandum says that she must take the offensive with her army only. "It should not be forgotten that every hostile village which is occupied by our troops gives them a distinct advantage, while a captured ship is only so much booty. The conquest of a fortress secures that of a province; the capture even of a whole fleet at best furnishes a means of invading the enemy's territory. As to our coasts, they are so unsuitable for a hostile landing that no defences will be necessary except for those places which are most likely to attract the enemy, such as large commercial towns, &c. Torpedoes, of offensive and defensive, would be most effectual for this purpose. Until a canal shall unite the North Sea with the Baltic, and permit our ships to pass from one sea to the other without having to use a channel occupied by the enemy, the defence of the

German coasts must be to a certain extent, a divided one. The threatened points on the North Sea are the mouths of the Elbe, Weser, and Jahde. Wilhelmshaven is the basis of the defensive system on this sea, and the fleet stationed there has great freedom of movement, as it may retire, if necessary, into the Elbe or Weser. The defence of the Baltic, on the other hand, would be very difficult. The line to be defended is 130 German miles long, and at both of its extremities there are channels open to an enemy." The writer of the memorandum concludes from this that a canal between the two seas is indispensable. The canal will pass from St. Margarethen, on the Elbe, through Rendsburg, to Eckernforde, and a branch canal will also be constructed, starting from Steinwehr, near Rendsburg, and terminating in the Bay of Wyk, near Kiel. These canals will be 224 feet broad and thirty one deep, and the cost of constructing them is estimated at 10,000,000 thalers. The works are to be begun in 1875, and terminated in 1883. Among the other works proposed by the Government for the efficiency of the navy are:—The completion of the buildings at Wilhelmshaven; the reconstruction of the naval establishment at Ellerbeck, in the bay of Kiel; the extension of the ship yard at Dantzig; the extension of the East Prussian Canal from the Oldenburg frontier to Wilhelmshaven; and the construction of ships, guns, torpedoes, lighthouses, and an observatory. The total sum required for the navy for the present year is 9,422,125 thalers; and the memorandum points out that England spends on her fleet nearly eight times, France nearly five times, and Russia nearly three times as much as Germany. An appendix to the memorandum gives the following as the numbers of the merchant ships of the principal powers in 1869.—Great Britain, 26,367; United States of America, 26,393; Italy, 18,822; France, 15,778; Norway, 6,883; Greece, 5,512; Germany, 5,110; Sweden, 3,357; Austro-Hungary, 3,114; Denmark, 2,853; Russia, 2,648; Turkey, 2,290; Spain, 1,414.—*Pall Mall Gazette.*

AN OLD ESTABLISHED FIRM.—The firm of S. M. Pettengill & Co. commenced their advertising agency in the old *Journal* building, No. 10 State Street, Boston, nearly a quarter of a century ago (February, 1849), where their agency still is located, carrying on a large and successful business. They established a branch in New York city May, 1852, which has grown to be much larger than the parent house, increasing steadily year by year until now it has the agency of nearly every newspaper in the United States and British Provinces, and does a yearly business of hundreds of thousands of dollars. S. M. Pettengill & Co. have recently opened another branch office at 701 Chestnut Street, Philadelphia, where they are doing a successful and increasing business. They have done advertising exceeding ten millions of dollars. This firm is favorably known not only throughout this country but in all parts of the world. They have established a reputation for honorable and fair dealing which any firm might envy, and but few have attained to. We congratulate them upon their success. We would recommend all who want advertising done in any part of the country to call upon them. They can point to hundreds of business men who have followed their advice and trusted to their sagacity and availed themselves of their facilities who have made fortunes for themselves, and they are daily assisting others in the same path.—*Boston Evening Journal.*

The German military papers speak of a variety of interesting experiments carried out in Austria during the last six months. In October, some trials were made at Simmering-Heide, which proved that the heavy 7-pounder shell gun carriage could be used, in case of necessity, for the 12-pounder breech-loading gun. In November, a short bronze $5\frac{1}{2}$ inches breech loader gun, with new pattern Shrapnel shells, and a new description of percussion fuse, was tried at Steinfelder-Heide. The practice was a 9-inch iron steel hooped breech loading gun, with a charge of 40 lb of prismatic powder, gave a mean range of 5,272 paces, and an average velocity of 378 metres; but at the ninety eighth sounds the gun became un-serviceable. On the other hand, the trial of an 8 inch breech loading howitzer proved very satisfactory. A 3-inch Krupp steel field gun, and a new pattern Gatling to throw shells, are also said to have been tried with satisfactory results. A good many experiments were also made with signalling apparatus, and with a new electric light, on a French Model, with a parabolic reflector and Fresnel lens. This was found to throw a light to a distance of 5,000 paces rendering the forms of objects at half that distance plainly distinguishable. These experiments are to be repeated with a smaller apparatus. The most interesting trials were those of the new balloon, fitted with a steering screw, and invented by M. Haulein, of Mayence. The trials took place on the 13th and 14th of December last, at Brunn. The balloon, which was inflated with ordinary street gas, giving a very reduced ascensional power, carried two persons besides the aeronaut. It mounted freely, and for a couple of hours was kept at altitudes between fifty and ninety feet. It rose and fell and turned in any direction in answer to the steering apparatus, with perfect readiness and ease. The experiments repeated on the 14th of December with equally satisfactory results. Numerous experiments were carried out by the Second, or Archduke Leopold's Regiment of Engineers, in destroying palisades and lines of permanent way, with 2 lbs. dynamite cartridges fired by electricity.

A letter from Berlin to the *Cologne Gazette* says that 25th of March was an important day in a military point of view. The Emperor, with a numerous suite, was present at the exercise of four companies of the Foot Guards, one company being armed with the new Manser rifle, thus being the first time that a company thus armed had manoeuvred before the Emperor. In half a minute seven salvos were fired, and it is said this number might be doubled if need were. Two French military *attaches*, who were present, watched the manoeuvres with the greatest interest.

ORIGIN OF THE "PRINTER'S DEVIL."—When Aldus Manutius set up in business as a printer at Venice, he came in the possession of a little negro boy. This boy was known over the city as "the little black devil" who assisted the mysterious bibliometer; and some of the most ignorant people believed none other than Satan, who helped Aldus in the prosecution of his profession. One day Manutius desirous to dispell this strange hallucination by publicity, displayed the young "imp" to the poorer classes. Upon this occasion he made a short but characteristic speech:—"Be it known to Venice, that I Aldus Manutius, printer to the Holy Church and Doge, have this day made public exposure of the Printer's Devil! All those who think he is not flesh and blood, may come and pinch him."

RECONNAISSANCE OF THE NORTH WEST PROVINCES AND INDIAN TERRITORIES OF THE DOMINION OF CANADA.

(Continued from Page 210.)

The Assiniboine River is navigable for good sized boats all the way from Fort Garry to Fort Ellice, and I believe much further. In spring no great difficulty would probably be experienced in navigating the river with a stern wheel steamer of light draught the whole way from Fort Garry to Fort Ellice.

Between Fort Ellice and Fort Carlton, on the North Saskatchewan, lies a great extent of country—more than three hundred miles. Throughout a considerable portion of the road followed alkali lakes are prevalent, and for several days I found no good water.

Upon the whole I do not consider the country between Fort Ellice and the Touchwood Hills, which are about midway between Fort Ellice and Carlton, and the country beyond the Touchwood Hills for two or three day's journey towards the North West, so well adapted for settlement as the Province of Manitoba, and the country between it and Fort Ellice.

From that part of the country, however where the "Bound Hill" (a conspicuous object about two day's journey south of Fort Carlton), is situated, to North Saskatchewan River, and from thence for several hundreds of miles westward to the Rocky Mountains, the value and fertility of the country for agricultural and stock raising purposes has certainly not been exaggerated in the accounts of any travellers.

The North Saskatchewan at Fort Carlton is about four hundred yards in breadth, with a current of between two and three miles; and it nowhere exceeds that breadth upwards to the Rocky Mountains. Although there are numerous sand bars, it is navigable for large sized boats, and I believe for stern-wheel steamers of light draught from within twelve miles of Lake Winnipeg nearly to the base of the Rocky Mountains. When the river is low, steamboats probably would not be able to pass at Coal Rapids below Carlton. At the proper season of the year for navigation, however, it is only necessary to make one or two portages the whole way from Fort Garry, on the Red River, to the Rocky Mountain House.

The land lying between the north and south branches of the Saskatchewan River near Carlton, and for many miles to the east and west, is particularly well adapted for settlement, and the whole country along the north bank of the North Saskatchewan, extending for hundreds of miles to the westward, is very fertile and admirably adapted for settlement. There are two half breed settlements at no great distance from Fort Carlton—one at St. Laure, (French half breed) on the South Saskatchewan, about 30 miles south west from Fort Carlton; the other, an English half breed settlement (Prince Albert) 50 miles east from Fort Carlton, on the North Saskatchewan. The population of St. Laure, last year, was 68 men 58 women and 198 children, possessing 577 horses, that of Prince Albert, 35 men, 57 women, 81 children, and 181 Indians. The population of these two settlements is probably much increased since this census was made, and it is believed that a considerable number of the half breed population in Manitoba will leave that Province next summer and move to these settlements.

The country to the south of the North Saskatchewan, leading towards what are called the Great Plains, I understand is by no means

so fertile or so well suited for agriculture; and there is there, I believe, a scarcity of both fuel and water.

Some doubts may exist as to the possibility of raising as large wheat crops along the valley of the North Saskatchewan, from the occasional occurrence of summer frost can be raised in the Province of Manitoba, but I believe that for stock farming, vegetables and the hardier grains, such as oats, barley, &c., the fertile belt of British North America can hardly be surpassed.

With regard to the temperature of the climate, on very few occasions was there any interruption to its mildness in the past summer during the months of June, July, August, September and October. On the night of the 17th August, when travelling between Fort Ellice and the Touchwood Hills, I experienced a slight frost, but not sufficient, so far as I could judge, to materially injure wheat crops. Again on the night of the 10th September, when about two day's journey from the Rocky Mountain House, I experienced another similar frost—these were the only occasions during the past season that I experienced any frosts or cold, until reaching the foot of the Rocky Mountains on the 21st September near the Porcupine Hills, being then at an altitude of between 3,000 and 4,000 feet above the sea level—and at the time of the Equinox, I was stopped for several days by a snow storm, which not unfrequently occurs in the mountains, but rarely so early on the plains. This snow disappeared from the plains in a few days, almost as rapidly as it came, and with the above exceptions, from the time of quitting the Lake of the Woods, one hundred miles east of Fort Garry, until reaching the Pacific Coast, a period of three months, the climate was delightful—it was frequently quite unnecessary to pitch a tent when camping for the night; for many nights I slept out in the open air, or lay underneath the cart.

It takes twenty days to go with large sized row boats, carrying cargo from Carlton to Fort Edmonton, but a light draught steamer would accomplish the distance in a short time.

Gold is to be found in the sand bars of the Saskatchewan the whole way from Fort Edmonton to Carlton, and almost throughout its entire length.

I was informed that at Carlton a man can earn from two to three dollars daily, during the proper season by washing the sand of the river, and at Fort Edmonton from five to six dollars daily for seven or eight months in the year.

At Fort Ellice on during the past summer there were only five or six men engaged mining, from one of whom I obtained some good specimens of the Saskatchewan gold, which is considered equal in quality to that obtained in the mines of British Columbia.

The few miners who have as yet penetrated into the Saskatchewan country state that gold is to be found in nearly all the streams which flow into the Saskatchewan River, and they are of opinion that quite as rich deposits exist on the eastern as on the western side of the Rocky Mountains.

The Hudson's Bay Company's Forts along the lines of the North Saskatchewan at Carlton, Pitt, Victoria and Edmonton consist of wooden houses surrounded by stockades; these stockades are about twenty feet high with small bastions at the angle to afford flanking defence—although probably sufficient to afford protection from Indians, they are of slight strength.

At Forts Carlton, Pitt, and Victoria, accommodation for companies of soldiers, 50

strong, could be found in these Hudson's Bay Company's Forts, in addition to the present occupants, and at Fort Edmonton for about 125 soldiers.

These Forts are conveniently enough situated for purposes of trade, but in a military point of view are badly placed, being in nearly every instance commanded from the rear by higher ground.

The Rocky Mountain House, however, is built on a good military site, and could easily be put in a defensible condition.

The scenery about the Touchwood Hills, as well as in any other sections of the country lying between Fort Garry and Edmonton is extremely picturesque and park like. At the time of the year I passed through, the wild flowers were in full bloom; the prairie covered with beautiful plants and countless roses, both red and white, presented a gorgeous appearance; not unfrequently when camping for the night the traveller literally makes his bed upon roses.

Fort Carlton and its vicinity is a desirable spot for settlement, but the whole country along the north bank of the Saskatchewan to Edmonton is at least equally so, offering in many places superior advantages from the greater quantity and better quality of the timber.

From Edmonton to the Rocky Mountain House, specially in the neighbourhood of the Battle River and Wolf Plain, the country is still richer and better wooded.

At Fort Victoria, where a small settlement has arisen, and at Fort Edmonton I saw several fields of excellent wheat being harvested.

I have no doubt whatever that when the valley of the North Saskatchewan is opened up and settled, it will be found to be very productive.

That beautiful country lying in the territory of the Blackfoot Indians, extending for about 300 miles along the Eastern base of the Rocky Mountains towards the International Boundary line, with a varying breadth of from 60 to 80 miles, is in respect of fertility, of surpassing richness—in regard to scenery, magnificent.

The effect produced upon the mind of the traveller who journeys day after day through these vast and beautiful solitudes is of an elevating character, the recollection of the scenes visited remains deeply impressed upon the memory.

The average temperature during the Winter months along the base of the Rocky Mountains in this section of the country, is higher by 15° than that of the Western portion of the Province of Ontario; all over the Saskatchewan country, horses and cattle winter out.

All travellers and old residents in the West, testify to the healthiness of the climate—in indeed in the pure air of the prairie, sickness is almost unknown.

Scattered through the whole of the Saskatchewan country, are numerous lakes, generally of no great size; they are favourite haunts of great numbers of wild duck, and geese.

Some of the lakes between Forts Carlton and Edmonton, such as Egg Lake, Jack fish and Saddle Lake are, however, of considerable size, and contain immense quantities of White fish.

Wild pigeons, and prairie hens abound everywhere.

In the Touchwood Hills and along the Eastern base of the Rocky Mountains, several kind of deer and bears are very numerous.

When travelling through the Touchwood Hills, I killed a bear of the grizzly species but one of no great size.

On the 23rd of September near the Porcupine Hill, at the base of the Rocky Mountain, I killed another grizzly bear of very large size, the animal weighing about 1100 lbs.

In the country adjacent to the Bow River and thence southward towards the Boundary line, numerous herds of antelope were seen, and some of them killed by our party.

During the past summer, the buffalo were very numerous on the Great Plains that lie between the North and South Saskatchewan Rivers.

CHAP. IV.

From the Rocky Mountain House across the mountains, viz "Wild Horse Creek," to Victoria, Vancouver's Island.

On arrival at the "Rocky Mountain House," I learned that, to cross the mountains into British Columbia by the "Vermilion Pass" with horses was impossible owing to the immense quantity of fallen timber caused by a great storm in the mountains last spring.

An attempt to cross by this Pass had been made by a party of Assiniboine Indians early in the summer without success.

Under these circumstances it became necessary to undertake a journey of about 300 miles through the country of the Blackfoot Indians and to cross the mountains by the North Kootenay Pass.

Through the kindness of Mr. R. Hardesty, the gentleman in charge of the Hudson's Bay Company Posts in the Saskatchewan District, I obtained the services of three guides from the Post of the Rocky Mountain House, one of whom was "William Munro," the Hudson's Bay Company's Interpreter for the Blackfoot Indians, better known throughout the Saskatchewan Country by his Indians name of "Piskaan." This guide is a brave man, and one of the most famous travellers and hunters in the service of the Hudson's Bay Company.

In company with him and the two other guides, one of whom was a Rocky Mountain Assiniboine Indian, the other a French half breed, I started along with my son from the Rocky Mountain House, on the 16th September, to pass through the country of the Blackfoot Indians, and cross the Mountains by the Kootenay Pass into British Columbia.

The Blackfoot tribe of Indians have always been much dreaded and their country carefully avoided by travellers. From information obtained at the Rocky Mountain House, and while travelling, it appears that this tribe which is the most numerous and warlike one of the Prairie Indians in Dominion Territory, is divided into five distinct bands, or rather clans, each band under its own chief, but all maintaining a close connection. These bands are called, and known as follows:

1st. The *Sik-is-ka*, or Blackfoot proper; this band numbers about 700 men, 1000 women, 1000 children, possessing about 3000 horses and ponies, 400 dogs, and having the following arms:—

105 Rifles,
260 Revolvers,
436 Flint guns,
286 Bows,
43 Spears,
37 War Axes,

2nd. The *Piegans*, (subdivided into Northern and Southern Piegans) numbering nearly 800 men, 1,100 women, 1,400 chil-

dren, possessing about 3,500 horses and ponies, 600 dogs, and the following arms:—

213 Rifles,
412 Revolvers,
320 Flint Guns,
181 Bows,
54 Spears,
41 War Axes.

3rd. *Ka-na-ans*, (or Blood Indians) numbering about 600 men, 800 women, 900 children, possessing about 2,500 horses and ponies, 480 dogs, and having the following arms:—

141 Rifles,
318 Revolvers,
202 Flint Guns,
216 Bows,
43 Spears,
32 War Axes,

5th. The *Sar-cis*, (or Beaver Indians) numbering about 100 men, 130 women, 150 children, possessing about 150 horses, 300 dogs, and having the following arms:—

6 Rifles,
14 Revolvers,
64 Flint Guns,
25 Bows,
4 Spears,
7 War Axes.

Although the Blackfeet may number altogether about 2,350 men, many of these are old, and some of them mere boys.

It is not believed that they could bring into the field more than 1,000, or 1,100 men, if as many.

They keep together by band for mutual protection, in what is termed in Military language standing camps; as many as 100 or 150 tents being pitched together, and their chiefs have control over the young men.

Their war parties usually consist of only 50 or 60 men, and when on raiding expeditions against hostile tribes, they can make with horses extraordinary marches.

With the Blackfeet, as with all the Indians in the Western Prairies, when at war, murder and assassination is considered honorable warfare.

There are many fine looking men among the Blackfeet, Sioux, Plain Crees, and other tribes, and they have a bold and military bearing. Their active wiry figures, and keen glittering eyes, betoken high health and condition, and they can endure great hardships and fatigue; but on the whole, the Indians are not equal, in point of physical strength or appearance, to white men hardened by active exercise and inured to labor.

As a rule, the Prairie Indians are bold and skilful horsemen, but they are not very skilful with firearms.

The Blackfeet and Plain Crees follow the Buffalo, subsisting entirely by the chase; they therefore require a great many horses and dogs for transport and hunting purposes.

In the present year, peace having existed for the past two summers between the Crees and Blackfeet, and accompanied as I was by a guide well known, and related to the latter tribe, I did not think there was much danger in travelling through their country.

There is always, however, great danger, if mistaken for an American citizen, and on approaching the International line, near the Porcupine Hills, of meeting with hostile bands of the *Grös Ventres* and *Crow* Indians from the Territories of *Dacotah* and *Montana*

U. S., who frequently cross into Dominion Territory on horse stealing expeditions, and who are not likely, if they fall in with travellers, to make distinctions.

From the Rocky Mountain House, the party being increased to five, we took with us twelve horses, one Red River cart for baggage, and carried twelve day's provisions intending to take the cart as far as practicable, and then cache it.

After leaving the Mountain House, no path or trail could be seen, and we journeyed through the country and over the prairies led only by the instinct of the guide.

After travelling for two days through thick wood country, in a south easterly direction, and crossing the Red Deer and Little Red Deer Rivers, we emerged on the Great Plains, following a route seldom taken by the white man.

On the 18th September, we reached the South Saskatchewan, here called the Bow River, but owing to the difficulty of finding a practicable ford, did not succeed until the following day in effecting a passage with our horses and baggage.

Whilst carrying out this operation, the Assiniboine Indians deserted, but subsequently rejoined the party fearing, probably, to be left alone in the country of the Blackfeet, the hereditary enemies of his tribe.

We found the water here of the South Saskatchewan icy cold, flowing as it does out of immense glaciers in the Rocky Mountains.

On the 21st September, we reached the North West bank of the Porcupine Hills, and when almost at the foot of the Livingstone Range of the Rocky Mountains, about eighty miles to the north of the International Boundary line, our progress was stopped by a violent snow storm, and we were forced to camp on the open prairie.

For two days and two nights it snowed without intermission, the mountains were soon covered, and by the evening of the 22nd the snow lay two feet deep all over the plain. The situation became somewhat difficult—stopped at a point 250 miles from the Rocky Mountain House, and as far from any other source of supply, with only five or six days' provisions left, the guide declaring that to cross the mountains had now become impossible.

Fortunately the storm occurred before entering the mountains or the probability is animals would have been lost and our party placed in a critical position.

On the 23rd the weather cleared, and on the afternoon of that day we killed a large grizzly bear which had approached to within a few yards of the camp, the animal having lain all the previous night close to it. This event afforded us a timely supply of meat, relieving our anxiety on that point although, in a case of extremity the horses would have supplied food, it was necessary to save them if possible for transport. We remained snowed up for six days, then, abandoning the cart and all superfluous baggage started on the 27th with the horses for the Kootenay Pass resolving to push through the mountains if practicable, and if unable to do so to make for Fort Benton, on the Missouri, a United States Military Post in Montana, distant about 250 miles to the South East.

Owing to the depth of snow we did not make more than four miles on the 27th.

(To be Continued)