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The Volunteer Review

AND MILITARY AND NAVAL GAZETTE.

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

VOL. VIII.

OTTAWA, (CANADA,) TUESDAY, SEPTEMBER 1, 1874.

No. 35

NEWS OF THE WEEK.

THE Dominion Rifle Competition, will come off at the Rideau Range on the 15th September and following days. It is expected that His Excellency the Governor General and Lady will be present. The programme is a much larger one than in former years, the total sum offered in prizes being over \$4,000; besides two valuable prizes just received from J. H. Stewart, Esq., Optician, London, England, consisting of a Field Glass and Telescope, both superb instruments—they will be included in the revised list which we will publish in our next.

On the 27th August a man named Cochlan, while attempting to cross the tramway bridge crossing the Canal from Parliament square to Major Hill, was overtaken by the cars laden with earth, and to save himself from being run over jumped on the side railing. He had just reached the top when he lost his balance and fell over—a distance of thirty feet. He was picked up senseless, and on examination it was found there were no bones broken, but it was feared that his internal injuries were of a serious nature and would likely prove fatal. Dr. Robillard had him removed to the General Hospital.

Ottawa and vicinity was visited on the 23rd and 24th by pretty sharp frost—the grass being quite crisped by it.

A union has been consummated between the New Connection and United Wesleyan Methodists of Canada.

A special police force has been organised at St. Andrews, N.B., to guard against incendiarism. Would it not be well to organize a similar force in Ottawa to guard against burglary?

The model of a new machine is on exhibition at Toronto, which the inventor claims will manufacture 28,000 pressed bricks daily.

The steamer *City of London*, on the 21st, took fire at Collin's Inlet and was burned to the water's edge. A deckhand was burned to death; all the passengers were saved but some lost everything. They were in bed at the time of alarm and jumped on the wharf in their night clothes. They were conveyed the following day to Owen Sound by the Steamer *Silver Spray*.

Several United States contractors are in Winnipeg for the purpose of contracting for the Pembina branch of the Pacific Rail way.

Professor J. W. Dawson, of Montreal, has been elected one of the two Vice-Presidents of the American Association for the Advancement of Science.

The *Sunday Times* is now blended with the *Ontario Workman* which has a respectable sized Sheet, printed in the quarter form.

Attorney General Clark claiming damages against the United States Government, for the brutal assault made on him in the city of St. Paul in the Spring of the year, and lays his claim at \$50,000. He is likely to be remunerated, but whether to the full amount demanded is not so sure.

It is said the peach crop in Niagara County promises to be so heavy that the growers of the luscious fruit are rigorously prosecuting the thinning process—and where they neglect it the branches perform the work by breaking from the weight of the fruit.

The Manitoban Government have taken steps toward instituting an inquiry into the Gordon affair.

The first execution of a criminal for a capital offence in the Province of Manitoba took place on the 26th August at Winnipeg.

A despatch from Fort Garry, 22nd inst., gives the following item of news:—Engineers for the location of the Pembina Railway branch passed Pembina this morning on the steamer *International*, which will be commenced by the first of September, simultaneously at both ends. Various forms of typhoid fever are prevalent here, and a large number or deaths have already occurred. Drs. Schultz and Brown leave here to-morrow for Montreal.

The dry house of the Pittsburgh, Fort Wayne and Chicago Railway was burned on the night of the 27th ult. loss \$300,000.

The war of races in the Southern States is likely to be a protracted and bloody one. In Kentucky several fights have taken place between the Whites and the Blacks, and a number of lives lost on both sides.

A Nashville despatch, (Tennessee) dated August 26th, says a number of negroes at Pickettsville, Gibson County, threatened a riot last Saturday and Sunday, manifesting a strong desire to kill two or three of the citizens and fire and sack the town. Yesterday sixteen of the ringleaders were arrested and taken to Trenton gaol for safe keeping. About one o'clock this morning seventy-five or one hundred masked men entered town and demanded and compelled the sheriff to deliver up the keys of the gaol. They then

took sixteen negroes from the prison, and after killing four and mortally wounding two rode off with the remaining ten and are supposed to have killed them. Nothing has been heard of the parties since they left."

Another despatch from Louisville, Ky., August 25th says.—"The United States Marshal and Governor Leslie have held a consultation and the state militia and the U. S. troops will act together in arresting contending parties. This morning all was quiet at Lancaster, but state troops remain to insure order. Forty-five of the rioters have been arrested."

The New York *Herald's* correspondent reports Robert Toombs as saying, "I shall never acquiesce in the 14th and 15th amendments, and I never shall tolerate the damnable doctrine that there can be good government where negroes participate in shaping public policy."

The Irish rifle team which is to participate in the International shooting match at Cree Moor, will sail for the United States on the 5th Sept.

By the burning of Morley's stocking factory at Nottingham, 500 persons are thrown out of employment. The loss is \$500,000.

On the 24th Aug., a fire broke out about midnight on the docks in Southampton and raged violently for several hours. All the shipping in danger of destruction was moved to a place of safety and the flames were confined to the workshops of the Royal Mail Steamship Line which were destroyed. Many workmen were deprived of situations by the fire. A large number also lost their tools.

Sydney Dobell, the well known English writer is dead.

Advices from Hong Kong, of the 21st ult. State that a very severe typhoon occurred at Nagasaki on the 20th. Great damage was done to property on shore, and the Shipping. A considerable number of natives lost their lives.

On the 22nd ult., the Shore end of the United States direct cable was laid at Cahir-tween, on the Irish coast, 121 miles north of Valentia.

The Pacific Mail Steamship Company proposes to adopt a rule requiring either the captain or the first officer of their steamers to be on deck during the night, and thus, if possible prevent an occurrence of disasters.

George Brown, of Halifax, the famous oarsman, has accepted a challenge from Ephraim Morris, of Pittsburg, to row a five mile race, for \$2,000 a side. The race is to come off during the last week in September over the course at Springfield, Mass.

ANNUAL REPORT ON THE STATE OF
THE MILITIA FOR 1873.

APPENDIX No. 3

(Continued from Page. 399.)

REPORT OF BOARD ON "B" BATTERY, SCHOOL
OF GUNNERY, QUEBEC.

Proceedings of a Board of Officers assembled by order of the Acting Adjutant General of Militia—dated Ottawa, October 27th 1873—for the purpose of examining and reporting upon the provisions actually necessary to be made for the issue of Fuel and Light, and other supplies at the Artillery Schools of Gunnery at Kingston and Quebec, and the detachments from the same, at Toronto and St. Helen's Island, for officers and men of "A" and "B" Batteries.

A Board consisting of the following officers having assembled, pursuant to order, at Quebec on the 14th November, 1873, proceeded to examine the quarters of "B" Battery, School of Gunnery, at that station. :—

PRESIDENT.

Lieut.-Colonel S. P. Jarvis, C. M. G.,
D.A.G. Mil. Dist. No. 3.

MEMBERS.

Lieut.-Colonel Jackson, Acting D. A. G.,
Mil. Dist. No. 4.

Lt.-Col. Casault, C. M. G., D. A. G., Mil.
Dist. No. 7.

The Board found occupied in the Citadel
of Quebec the following rooms, viz. :

- 1 Commandant's quarters.
- 1 Field Officer's.
- 7 Other Officers' quarters—two of whom were students, recently joined, and one married officer, (the quartermaster).
- 1 Officer's mess-room.
- 1 Officer's ante-room.
- 6 Staff Sergeants' (including the Master Gunner.)
- 7 Sergeants. (including the Bandmaster.)
- 7 Soldiers' barrack rooms.
- 1 Commandant's office.
- 1 Orderly room.
- 1 Master Gunner's Office. } Communicating.
- 1 Sergeants' Mess.
- 1 Non-Commissioned officers Reading-room.
- 1 Soldiers' Reading-room.
- 1 Recreation Room, or theatre and gymnasium.
- 1 Model Room, or officers lecture-room.
- 1 School Room, or soldiers' lecture room.
- 1 Cell, with Provost Sergeant's quarters.
- 1 Ablution Room.
- 1 Main Guard Room, with defaulter's room, communicating.
- 1 Hospital of 2 wards.
- 1 Surgery.
- 1 Quarter Master's Store, (two casemates.)
- 2 Gun Drill Sheds.
- 1 Laboratory, (for Dominion, as stated to the Board.)
- 2 Harness Rooms, (one for officers and one for battery.)
- 1 Collar Maker's Shop.
- 1 Taylor's and Shoemaker's Shop.
- 1 Ordnance Armourer's Shop,

- 1 Wheeler's or Carpenters's Shop.
- 1 Farrier's Shop, or Forge.
- 6 Passages.

In addition to the above-named apartments, the Board found occupied by caretakers the following, viz. :

- 3 Forts at Lewis, having 2 caretakers each.
- 1 Engineer Park, having 2 caretakers each,
- 1 Advanced Redoubt in the Revolin of Citadel, occupied by a married officers, (the Quarter-Master.)
- 1 Advanced Guard house, in ditch.
- 20 Separate rooms (casemates, and others, now occupied by married soldiers.)

The Board found, likewise, four Martello Towers, one of which only was occupied by a family, (civilian) who stated that they draw no allowance.

The Board are of opinion that the same scale of allowances of fuel and light recommended for the Province of Ontario, so far as relates to the rank and position of officers, sergeants, and other rooms occupied as barracks for soldiers, should be established, with the exception that during the mid winter period in the Citadel of Quebec, the allowance of wood for each passage stove, should be twelve inches or rations per diem, and the periods of the seasons should be as follows, viz. :—

Summer, 16th May to 30th September,
138 days.

Winter, 1st October, to the 15th November,—1 April, to 15 May, 91 days.

Mid-winter, 16th November, 31st March,
136 days.

The Board find that the last Tender approved for the supply of fuel wood in Quebec, was French measurement, or the cord three feet wide only, whereas the allowance now recommended, are for four feet wood, or 1.33 cubic feet (English) to the cord.

The Commandant of the School of Gunnery at Quebec informed the Board that he had on his "State" at the present time, exclusive of officers temporarily attached for instruction :—

- *7 Officers
- 13 Sergeants (Staff and others)
- 141 Non-Commissioned Officers and men.

161

Making a total of 161 all told, of whom twenty four non-commissioned officers and men are supposed to be at St. Helen's Island, Montreal; seven officers and eighty nine non-commissioned officers and men were in officers' quarters, and in seven soldiers' barrack rooms in the citadel; six non-commissioned officers and men, were at the Lewis Forts, and the remainder, thirty five in number were provided, as married men with separate quarters in the barracks and elsewhere where each one of the latter drawing fuel and light allowances for one barrack room. Of this number, (35) thirteen are sergeants, staff and others, who would be entitled to separate rooms or quarters on sergeant's allowances; leaving twenty two married men employed as caretakers in the vacant casemates—a portion of which only are as yet occupied; but as married soldiers increase in numbers, the remainder may possibly be tenanted, and fuel and light drawn for them if sanctioned.

The establishment of "B" Battery, School of Gunnery, as provided for by G. O., (24) 20th Oct., 1871, is thus :—

*In addition to these 7 officers on the establishment, there were two attached for instruction at Quebec, and one in charge of the detachment at Montreal, on St. Helen's Island.

- 6 Officers
 - 1 Sergeant-Major
 - 9 Sergeants
 - 143 Non-commissioned Officers and Men.
- Out of which numbers the following detachments are to be found :—

Point Lewis Forts.

1 noncommissioned officer and 10 men

St. Helen's Island, Montreal.

1 officer, 1 sergeant, and 23 non-commissioned officers and men

It was reported to the Board that the vacant casemates in the citadel require heating for preservation. The members of the Board not being engineers, beg to reserve the question of the necessity for fires in the casemates for the decision of a professional engineer, as from long experience in the country they do not believe that fires are necessary for the preservation of masonry alone. Some of the casemates are out of repair, the front of one being propped up with large timbers. The Board were informed that this was done while the Imperial troops were in occupation, and this may reasonably be used as an argument against the necessity of keeping them occupied and heated for the sake of preservation, as they will probably fall down in time under any circumstances, if not kept constantly in repair by the expenditure of labour and material. If the casemates now in occupation by "B" Battery require heating to preserve them, all the casemates in the citadel would require the same treatment. Where there are floors and wood work and plaster in the casemates, occasional fires would seem necessary to preserve them from damp, wherever they are worth preserving; but the Board do not think it expedient to issue the amount of fuel, which may be allowed for this purpose, to "B" Battery, and therefore have not recognized so many married mens' rooms as are at present in use.

With regard to the three valuable fortifications at Point Lewis, the Board think that some supervision should be exercised over them, to prevent spoilation or intrusion by strangers. But this object might be attained at a less cost than the present system entails upon the Militia Department. The Board found that the estimated cost of fuel wood for this purpose for the present year amounts to nine hundred dollars, or thereabouts, exclusive of the pay and rations and clothing of caretakers from "B" Battery. At No. 2 Fort the caretaker lived in a cottage out side the fort; consequently the fuel wood used by the caretaker could have had but little influence on the masonry of the fort, which it was supposed to benefit. The Board do not think it necessary for the preservation of the masonry that fires should be constantly kept up, but for a short period in the spring of the year, when the frost is leaving the ground above the casemates, an allowance of fuel should be granted to dry the floors, or other interior fittings where leakage from the ground above might damage them. This allowance of fuel should depend upon the number of rooms requiring it, to be determined by a Board of Officers, composed of the Deputy Adjutant-General of the District, the Commandant of Artillery, and such other members as may be specially appointed for the purpose.

The Board consider that sufficient supervision might be exercised by the weekly visits of an officer, under the orders of the Commandant of Artillery.

With regard to what is called the Engin-

cer Park at Point Levis, consisting of a number of wooden huts and other out-buildings, furnished and totally unprotected, the Board think it desirable that they should be occupied by caretakers, and that allowances for two stoves in winter and midwinter should be granted, and two cooking allowances all the year round, with a like proportion of coal oil for lighting.

The same caretakers exercising a general supervision over the fortifications and the trees on the government property in the neighbourhood.

With regard to the Four Martello Towers, extending from the St. Lawrence to the St. Charles Rivers, on the west of the citadel, and facing the Plains of Abraham, the Board consider that they need not be occupied by military detachments or caretakers from B battery, but should be occasionally visited by an officer under the orders of the Commandant of Artillery. At present the board find only one of them occupied, and that one by a civilian and his family, to whom no allowances of any kind are given; while the Board are informed that in the estimates of fuel wood this year, upwards of forty two cords of wood are included for these towers, and which they considered quite unnecessary, unless occupied by detachments of troops.

The Board were further informed that fifty one cords of wood were estimated for the water-pipes in the citadel, but they only were shown four such pipes. One of which was in a staff-sergeant's room and three others in a model room. These pipes convey water from the roof to tanks below, to provide for the exigencies of a siege. The Board do not think it necessary to allow extra fuel for such purpose at present.

Subject to the above mentioned considerations, the Board recommend the scale of allowances of fuel and light for B battery at Quebec, as detailed in the annexed scale of fuel and light for that garrison.

MONTREAL.

November 17th, 1873.

The Board having proceeded from Quebec to Montreal, and having inspected St. Helen's Island Barracks, report that they found occupied by the detachment of B. Battery, School of Gunnery, the following quarters viz:

- 1 Officer's quarters.
- 1 Officer's kitchen.
- 1 Orderly room.
- 1 Sergeant's room.
- 3 Barrack rooms, capable of containing 16 men each, thus:
 - 1 containing 10 men.
 - 1 do 6 do.
 - 1 used as a dining hall.
- 2 Married men's quarters. (two small rooms for each man).
- 1 Soldier's kitchen.
- 1 Canteen.
- 1 Small arm armourer's quarters. (attached to B. battery for subsistence).

The Board were further informed that a detached guard house was occasionally used as a "lock-up" when necessary to confine unruly prisoners, and for which the allowance of fuel might be required; but no permanent guard was mounted there.

The Board have not therefore made any stated appropriation for this "lock up," but recommend that when used, the fuel for one stove be allowed, upon special certificate of the officer commanding the detachment, and approved by the Deputy Adjutant General commanding the district.

The Board recommend that the allowance of fuel and light, as detailed in the scale attached to this report, shall be established for the detachment at St. Helen's Island, furnished by B. battery, so long as the detachment is considered necessary and remain at its present strength.

The Board do not deem it necessary to recommend fuel and light for vacant rooms, morely as married men's quarters: for they consider such rooms do not require permanent and continuous heating or lighting for their mere preservation, except under the direction of a professional engineer, as before stated with reference to the numerous casemates and other vacant rooms at Quebec: but in the absence of any authority for married men's accommodation with separate quarters in the barracks, the Board would suggest that a limited per centage of married men be recognized on the establishment of both A. and B. batteries, for the purpose of washing and repairing the single men's clothing.

When such a per centage shall be established by authority from the head quarters of the Militia Department, the Board would recommend the same allowances of fuel and light for such quarters as are allowed to sergeants' rooms, for the number of stoves actually required.

The Board find at St. Helen's Island a small arm armourer detached from the corps of small arm armourers in England, and now under the orders of the store department in Ottawa, but attached to B. battery for pay and allowances. As this man is not on the effective strength of B. battery, the Board do not hold him to be subject to the regulations at present under consideration, and therefore do not include his quarters with those of the School of Gunnery.

If, however, he should be transferred as an armourer to the School of Gunnery, the Board recommend his allowance of fuel and light to be the same as that for a staff-sergeant of the battery.

The same remarks applies to the small arm armourer at Quebec.

The Board find, by the Imperial Regulations on Fuel and Light, that in Montreal and Quebec, all contracts for fuel wood were to be made in French measurement, viz. — "The cord to consist of 8 French feet long, 4 French feet high, 3 English feet wide and is also to be issued and accounted for by the same measure." This appears to be in English measurement, about 8 feet 8 inches long, 4 feet 4 inches high, and 3 feet wide. Such measurement being one eighth less than an English cord, the Board, in assimilating the issues of fuel light and in Ontario and Quebec Provinces, have made their recommendation for both Provinces on the English measurement of a cord of wood, viz. — 8 English feet long, 4 English feet high, and 4 English feet wide; and are of opinion that the issues made in Quebec and Montreal should be supplemented by such quantities as will make the number of rations of wood in French measurement equivalent to the same number of rations of wood in English measurement.

The "scale" of allowances, attached hereto, of fuel and light, for St. Helen's Island, with the exception of the ablution house, are recommended by the Board on the supposition that the detachment from B Battery will not exceed one officer, one sergeant and thirty two non commissioned officers and men—the barrack rooms being adapted to hold 16 men each.

The ablution room allowances to remain the same at all times while the barracks are occupied by troops.

The Board do not deem it necessary to recommend fuel and light for an orderly room for so small a force as that in St. Helen's Island.

The Board do not deem it necessary to recommend fuel and light for a barrack room to be used as a dining hall for the men, as at present there being no authority for such an appropriation in the Imperial service, nor is it the usual custom to do so.

The Board do not deem it necessary to recommend fuel and light for a canteen under any circumstances, as these institutions should be self supporting.

In view of the increased and increasing price of fuel wood, the Board think that a more economical method of heating the barracks and quarters might be found in substituting self feeding coal stoves for the old wooden stoves, and allowing an equivalent in coal, according to the relative consumption of the two kinds of fuel, based upon the scale fuel wood allowances already recommended, and taken from the Imperial regulations.

The Board would recommend such equivalent in coal not to exceed twelve pounds of best hard coal to one inch running measure of an English cord of wood, as a single ration.

If new barracks were being erected, it might be an advantage to build them with apparatus for heating with steam, but the old barracks and buildings handed over to the Dominion are not now adapted to this mode of heating, and the expense of making the necessary alterations would be very great.

Upon a calculation that one ton of 2,000lbs. of hard coal is equivalent in time of burning to about one cord and three quarters of the best wood. And that such coal can now be purchased for \$7.50 a ton of 2,000lbs. while the price of wood ranges from \$6 to \$3 a cord, with a probability of this price increasing, the Board consider that so great a saving in the price of fuel would be effected in one year, by the substitution of coal for wood, as would cover the cost of purchasing the coal stoves required; and in each subsequent year there would be a direct saving of that amount annually. And the Board also believe that the barracks and quarters would be more uniformly heated thereby.

The Board beg further to suggest that if a District Quartermaster were appointed at Kingston and Quebec, as was formerly the case, this officer could act as a supply officer to the force on permanent duty at those stations, and be likewise available for the care of stores and other Government property at the head quarters of the districts not under the immediate charge of the Artillery. He could also be responsible for the proper issue and receipt of camp equipage when required for annual drills, and his salary would amount to but a small percentage on the annual expenditure under those heads; while the possible reduction in expenditure of supplies and the safety and preservation of the public property in his charge, would amount to a large percentage on the sum now expended, and on the value of property lost or damaged for want of the necessary supervision.

- S. P. JARVIS, Lt. Col.
President.
- W. H. JACKSON, Lt. Col. Act.
D.A.G., M.D. No. 4.
- L. A. CASAUULT, Lt. Col.
D.A.G., Mil. Dist. No. 7.

KINGSTON, Dec. 12th, 1873.

(To be continued.)

CENTRAL ASIA.

The late expedition of Russia against the Khan of Khiva, the mission of Mr. Forsyth to the Ameer of Kashgar, the revolt of Sirdar Mahomed Yakoob Khan against his father the Ameer of Afghanistan, and the intelligence which we have just received that a Chinese force has been for some time stationed on the north and south of the Burdo Ridge, threatening an invasion of Kuldsha and Kashgar, following each other in rapid succession, have drawn an unusual amount of attention during the past few weeks to the position of Central Asia, and to the relations subsisting between Great Britain and Russia, and those border countries which lie between our Eastern possessions and those of Russia. The recent visit to this country of the Emperor of Russia, and the alliance between the two royal houses which we have just been celebrating give additional point to anything that is said or written about Russia, and immensely enhance the interest which is felt by the public in whatever concerns her relations with us. Hitherto English folks have felt, in a vague kind of way, a certain jealousy of Russian encroachments in Asia, and this feeling has, not unnaturally, grown in intensity since the unwarrantable repudiation of the Black Sea clauses in the Treaty of Paris. There is no doubt that every year witnesses considerable additions to the territory of Russia in Asia, and year by year the boundary of the Russian Empire approaches nearer to the boundary of the British Empire in the East. It may be doubted whether we should experience any much greater inconvenience or disadvantage if the Russian Empire were still further extended, and the same lines of river and mountain bounded British India on the north, and Asiatic Russia on the south. As it is we have to be constantly negotiating with the semi-barbarous Khans and Ameers of the border countries of Afghanistan and Turkestan, instead of with the political officers of a European Power, and these petty sovereigns are always ready to take any advantage which seems to offer from the supposed jealousy or rivalry of the European Powers with whom they have to deal.

As matters now stand in Afghanistan and Turkestan, it must be admitted that there is much to create apprehension in the minds of those persons who are always endeavouring to raise an alarm at the advances of Russia in Central Asia. The rebellion of Yakoob Khan against his father Shere Ali, it is stated, receives a large support from the Afghan people, and is regarded by the natives as a direct antagonism to the policy of the British Government. Shere Ali, has hitherto been supported, and, indeed, to a great extent, maintained in his kingdom, by the English, and it is believed that Yakoob Khan relies upon subsidies of money from the Russian Government. If his confidence be well founded, and the general feeling of the country be in his favour, there can be little doubt as to the result of his expedition against Kandohar, and the defeat of Shere Ali will be justly regarded as the triumph of Russian over British policy. Shere Ali is not in any way fitted to rule over such a people as the Afghans, his feeble health and meek disposition are not such as to command themselves to a warlike race; while Mahomed Yakoob Khan has already proved himself as a military commander, to possess qualities that would command the adherence of his subjects, should he succeed, as it seems highly probable that he will, in wresting the throne from his father.

Nothing short of our engaging actively on the side of Shere Ali, is likely to ensure the failure of Yakoob Khan, and to maintain in our own prestige in Afghanistan.

In Eastern Turkestan, it seems probably that the interests of Russia and England will be found identical, and the last intelligence that has been received, that the Chinese troops are threatening an invasion of Kashgar, immediately after our recognition of the usurping Ameer, may possibly render it necessary for us to afford assistance in that quarter to maintain existing relations, while the engagements into which Russia has entered with the Chinese Government, may prevent her taking any active measures in concert with the British Government in securing the independence of Kashgar, an object which must be of even greater moment to Russia than ourselves.

In the treaties into which we have just entered with Yakoob Beg, the Atalik Ghazee or Ameer of Kashgar, the independence of Kashgar is distinctly recognised, and the engagements there entered into were with the Ameer, his heirs and successors. Friendly relations have also been established between Kashgar and Russia, and Kashgar and Turkey, but Lord George Hamilton in replying to a question put by Sir Charles Dilke upon this subject, referred to a conversation that took place in 1869 between Sir Alexander Buchanan and Prince Fortschakoff in which the latter represented the difficulty of entering into diplomatic relations with the Atalik Ghazee, in consequence of the treaties existing between Russia and China, which precluded the Emperor of Russia from fully recognising the independence of a successful insurgent against the authority of the Chinese Emperor. The commercial treaty between Kashgar of 1872, though it indicates that Russia has no hostile intentions against the Atalik Ghazee, may not therefore be sufficient to ensure for him the assistance of Russia in maintaining the independence which he won eleven years ago, and the advantage to Russia of remaining upon friendly terms with the Government of China may be sufficient to prevent her from interfering in the pending quarrel. That China will not relinquish Kashgar without a struggle is certain unless she is overawed by the assistance which the Ameer may be able to obtain from foreign sources; and what would be the result of a contest between the small army which Yakoob Beg could bring into the field, if left to himself, and the almost inexhaustible forces of China, it is not difficult to foresee. It is true that the soldiers of Yakoob Beg would probably be better disciplined and made of better stuff than the cowardly ruffians, commanded by treacherous and venal mandarins, who form the Chinese Army, and that man for man they would be infinitely superior, but the hordes of China would be able by mere force of numbers entirely to swamp the army of the Ameer. The Kashgarians, moreover, would be fighting for their independence, in fact for their actual political existence, and two wipe out the stain and avenge the dishonour of their conquest in 1756 by the Chinese. They might therefore be expected to sell themselves as dearly as possible; on the other hand, the Chinese Government, as the Russian Professor Vassili ff points out in an article communicated to the *Times* a few days ago, has the greatest possible interest in recovering its lost province. "What obstacles," the professor says, "will our Chinese vanity? Neither time nor expense nor distance can check it. Even though

Turkestan brought no profit to the Imperial Treasury, what right had it to secede, and reject the advantages of Celestial rule? But the Chinese are revengeful as well as vain when conscious of their strength. The legions will pour forth. Let us assume that at the first encounter they will be routed: what does that matter? China will never want for troops, let there be only no refusal to take volunteers." Chinese vanity and Chinese revenge and rapacity are known to be insatiable, and actuated by those there can be little doubt that no expenditure of life will be considered too great to effect the restoration of the revolted province. The Chinese Government has, moreover, as the professor notices, shown recently a disposition to improve her army, and to adopt the inventions of modern military science. Her soldiers have been, and would be again, in the event of war, drilled and disciplined by European or American officers, and be supplied with European arms, and the reconquest of Eastern Turkestan would undoubtedly be effected.

Perhaps it may be argued, what difference would it make to us, and what concern is it of ours, whether Kashgar is governed by its own Ameer, or by a mandarin of the Chinese Empire? The advantage which we derive commercially from the independence of Kashgar is very great, or, to put it differently, the disadvantage which would follow its subjugation by the Chinese Government could hardly be exaggerated. The present Ameer has shown a disposition, from whatever motive, to encourage trade, and to enter into friendly engagements with us; he has already, as we have seen, executed commercial treaties with England, Turkey, and Russia, the three European Powers which have most interest in Oriental affairs, while every commercial advantage which can be obtained from China has to be extorted at the point of the bayonet, and the Chinese Government has never yet learned to appreciate the benefits of an open trade, nor the still more elementary lesson of the sacredness of treaty obligations. To allow China to regain possession of Eastern Turkestan will be to shut it up against European commerce and European civilization, and to reverse the policy of pacification which Russia and England have both advocated and advanced in Central Asia, for it cannot be expected that the Kashgarians will ever tamely submit to the yoke of their conquerors, when they have once proved their ability to shake it off. The future history of Kashgar, if China again succeeds in attaching it to her already overgrown and miserably governed empire, will be a succession of revolts, insurrections, and massacres—a condition of things not only to be deprecated in the interest of the inhabitants themselves, but to be prevented, by all means, as demoralising to surrounding nations. The mission of Mr. Forsyth to Yark and has been too successful for us to allow the advantages he has gained to be frittered away at the caprice of a Government which has always shown itself to be unfriendly to Europeans; and the interest of Russia and England alike require that the independence of the Ameer should be secured. It is much easier for us to prevent the encroachments of China now than it will be in future to compel the Chinese Government to ratify the treaty just entered into with the Ameer, and this we shall certainly have to do, unless we are content to allow our influence in the East to count for nothing in this extension of trade and civilization.

Sir Charles Dilke was right in advocating the delimitation of the territory of the

Ameer of Kashgar, for it is obviously inconvenient that a sovereign should be recognised and that there should at the same time be no distinct understanding as to the boundaries of his kingdom. On the other hand, as long as the Ameer is directly at war with China, and a certain portion of his territory is the subject of contention, it is not possible that the limits should be defined; but if Russia and England choose to interfere, there can be no doubt that they may compel the Chinese Government to withdraw its troops, and recognise by treaty the independence of Kashgar, as a matter of course defining the territory which is to be subject to the Ameer.

REVIEWS.

Every issue of the *Aldine* is a surprise to all who see it, since it shows a positive growth in art, beauty, and literature, from month to month, as gratifying as it is wonderful. "Superb" is the only word which fitly characterizes the illustrations for the September issue. The pictures are charming in design and faultless in execution. A copy of Bertrand's "Little Rose," drawn by John S. Davis, and engraved by C. Maurand opens the current number with a flush of beauty almost dazzling. For feeling, beauty, expression, and exquisite finish, this picture is equal to a twenty-dollar steel engraving. "A Storm in Utah," by Thomas Moran, is a faithful transcript of nature, showing the war of the elements in that strange land. The engraving has all the finish of a bank note. The two full-page pictures in this number are "Coming from the Forge," by John S. Davis, and "Kingston, New York," by Kruseman van Elten. The former is a bold and spirited sketch of a scene familiar to all childhood life in the country—two boys on the back of a horse which has stopped to drink from a woodland brook on its way home from the blacksmith's. A dog on the rustic bridge engages the attention of the eldest boy. Van Elten's landscape shows a charming stretch of country, and the ancient city of Kingston, New York. Mr. J. D. Woodward furnishes a general view of the Palisades, as seen from the Hudson river—a striking picture. The other illustrations in this number are "A Bad Job," from the original of Stammel, showing the interior of an armorer's shop; "The Women of Schorndorf," from the original of Haberlin, a historical picture; three views of Lincoln Cathedral, showing the church, the interior of the Western Transept, and Bishop Longland's monument; and a pretty picture for fall—"Gems of the Changing Autumn!"

The Aldine Company has determined to establish an Art Union, similar to the well known Art Union in England, and distribute its works of art, both sculpture and paintings, which are constantly collecting, among its subscribers. Art premiums, valued at \$2,500, will be distributed among each series of 5,000 subscribers. Subscription tickets, at \$6.00 each entitle the holder to the *Aldine* for a year, to the chromo, and to a ticket in the distribution of art premiums.

The literary contents of the September *Aldine* consist of a poem by Elizabeth Akers Allen. "The Bobolink," a sweet story of the child love of Nicolo Paganini, from the Italian; an admirable paper on "English Landladies," by Mrs. M. E. W. Sherwood; "The story of the Lightning," by Edgar Fawcett; "Theresa and Her Lovers," by

Frances Lee; an interesting account of "The Women of Schorndorf"; "The Discontented Sister," a poem by Helen Barron Bostwick; a lengthy article on Franz Liszt, by Elise Polko; a charming account of St. Martin's Day, a children's festival by C. W. Conant; "Voices of the Night," by Jonny Burr; "Monsieur Le Blanc," by Mrs. George Bartlett; "At the Tomb," by Julia C. R. Dorr, and Lincoln Cathedral, by Fuller Walker. The editorial articles upon music, art, literature, and descriptive of the pictures, are filled with fresh and valuable matter. The Aldine Company, publishers, 58 Maiden Lane, New York.

We especially direct attention to the following announcement:—

OFFICE OF THE ALDINE COMPANY,
58 MAIDEN LANE,
NEW YORK, August 11, 1874.

To the Editor:

In consequence of rumors affecting the stability of the enterprise which have obtained currency through certain influences, it is appropriate to furnish some assurance to the general public that *The Aldine*—the Art Journal of America—is not in any embarrassment whatever.

As a commercial undertaking, it has been from the start a remarkable success, and is, to-day, more prosperous than it has ever been before.

The Aldine is the property of the Aldine Company, the organization of which, last month, brought to the enterprise an additional paid up capital of \$200,000.

The stock is in the hands of a number of the wealthiest men of this city, and the Company does not owe a dollar outside of its capital stock and the ordinary not due current accounts of the month.

The brain which originated still controls and directs the production of each issue, and it is absolutely certain that Mr. James Sutton, as president of an organization possessing every facility, and backed with ample capital, will be able to go on faster and surer to the fullest development of an idea, the outlines of which elicited the warmest enthusiasm of his countrymen.

Offering your own and the public interest in the success of *The Aldine* as may excuse for trespassing upon your space, I am

Very respectfully yours,
W. W. HUNTINGTON,
Treasurer.

The Leonard Scott Publishing Company's reprint of the *Edinburgh Review* for July is now before us, full of good reading, as usual.

The first article, "Ocean Warfare," gives an explanation and description, free from technicalities, of the new conditions under which naval warfare will be waged, and of the various weapons with which modern fleets are armed.

Hebrew students will be much interested in the article on the "Speaker's Bible," now in course of publication in England. The general character and design of the work are briefly explained; and much minute criticism is devoted to the manner in which the Hebrew text has been dealt with.

Art. III., "Nasmyth's Physical History of the Moon," gives a description of the appearance of the surface of the moon and its probable formation, founded on many careful telescopic observations. A ball of molten liquid is the basis of Mr. Nasmyth's theory of formation; and he advances some new ideas relative to the cooling process, to explain the irregularities on its surface.

The article also gives some account of the astronomers of the Greenwich Observatory and the instruments that have been invented from time to time for taking lunar observations.

Montley's "Life and Death of Barneveldt" is welcomed with a warm and favourable review, the writer remarking, "we can hardly give too much appreciation to that subtle alchemy of the brain which has enabled him to produce out of dull, crumbed, and often illegible papers, the vivid, graphic, and sparkling narrative which he has given to the world."

The fifth article takes up Hall's "Modern English," criticising the style and temper of Mr. Hall's writings with much severity.

The paper entitled "Canon of Beauty in Greek Art" will be attractive to art students, attempting, as it does, to detect and define the subtle laws of proportion which guided the great sculptors of antiquity.

Other articles are, a long and favourable review of Guizot's History of France, with numerous extracts; a very interesting account of the life of the philologist, Richard Cleasby, and his labours in Icelandic literature; and a review of the "Journal of Henry Cockburn," a continuation of the "Memorials of his Time," by the well-known Lord Cockburn.

From Calcutta, August 24th we learn—
"The latest estimates in regard to the extent and effect of the financial trouble show that 8,000,000 natives are still dependent on charitable relief. Further distress is threatened in Tirhoot, where the weather has been excessively dry, and unless rain falls soon the harvest will prove a failure."

Paris advises states that two hundred Republican volunteers who were marching to the relief of Ruycedera, were captured by the Royalists.

The Perfects of the departments in the south of France have received special instructions from the Minister of Interior, to use every effort to prevent the sale of arms to the Carlists.

Lisbon, Aug. 25.—The Government has issued an order directing the Spanish Federalist refugees in the country to depart at once.

Madrid, Aug. 25.—Conscription is being enforced throughout the country without opposition. It is thought it will add 100,000 to the Spanish army.

London, 20th.—John Henry Foley, the sculptor his dead.

REMITTANCES Received on Subscription to THE VOLUNTEER REVIEW up to Saturday the 29th Inst.

- St. Armond, Q.—Capt. H. N. Sixby, to Jan. 75. \$2.50 (Per Roger Hunter, Esq.)
- St. John, N. B.—Capt. J. A. Kano, to Nov. 1874. 2.00
- W. F. Hatheway, to [January, 1875. 2.00
- Lt. Jos. Ewing, to March, 1874 2.00
- Capt. J. D. Underhill, to [April, 1874. 2.00
- Lt. H. F. Porley, to May, 1874. 2.00
- Lt. Col. Ottý, to Dec. 1874. 2.09
- Lt. Col. Foster, to Nov. 1874.. 2.00
- Major R. Farmer, to Dec. '74. 4.00
- Lt. Col. Jago, to Nov. 1874.... 2.00
- Lt. Col. O. R. Ray, to Nov. '74. 2.00
- Capt. G. K. Berton, to Jan. '74. 4.00
- Capt. A. Blain, to Nov. 1874.. 2.00
- Carlton, St. John, N. B.—Capt. A. J. Ring, to [January, 1874. 2.00
- St. Stephen, N. B.—Lt. F. Stevenson, to Mar. '74. 4.00
- Fort Leavenworth, Kansas, U. S.—Lt. Col. E. [Rice, to July, 1875. 1.96

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The Volunteer Review,

AND

MILITARY AND NAVAL GAZETTE.

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

OTTAWA, TUESDAY, SEPT. 1, 1874.

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 at 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.

LIEUT. J. B. VINTER, of Victoria, is our authorised Agent for Vancouver Island, British Columbia. As is also Captain H. V. EDMONDS for New Westminster and adjacent country.

We are in receipt of No. LXVII Vol. XVIII of the "Journal of the United Service Institution." It contains the following interesting articles:—

"Further Experiments with Bow and Stern propeller; Recent improvements in the manufacture of Pebble Powder; The Russian Campaign against Khiva; The Strategic importance of the Military Harbors in the British Channel as connected with defensive and offensive operations; On a new book of Stellar Aginworth tables, and on a newly invented illuminated Stellar Aginworth Compass; On Croboudace's Ordnance Night Sight Vane or Collimator; An Improvement in apparatus for lowering and raising, engaging and disengaging ship's boats; British interference with revolted Spanish ships in 1873; A few Notes on Captain DYER's paper."

The papers on the Khivan expedition and that on "the Strategic importance of the Military Harbors in the British Channel"—are valuable contributions to the military literature of the day—both have a special interest for ourselves; the first for the practical knowledge it gives of the endurance of the Russian soldier and the tactical value of the discipline of that army, illustrated by its economy in the equipment of the expedition—the latter, because in any question of Imperial defensive or offensive movements the correct knowledge of the strategical combinations likely to be employed, as well as the bases of the lines of operation, will be necessary to give our people confidence. We have already given a passing notice to this important paper, but as it was then only printed for private circulation we could not review it in the detail it deserved. We purpose to give our readers copious extracts from both articles, and we cannot too earnestly impress on their minds the value of an Institution that places such knowledge at their disposal.

It is very much to be regretted that no Canadian officer has yet attempted to place before our brothers of the Imperial army and the British public generally, their ideas on practical military subjects adapted to the condition and climate of the Dominion. The Royal United Service Institution offers an available medium by which good service could be done for this country, the Empire, and the services. We have several officers capable of imparting practical knowledge respecting the strategical value of Canada, and thereby doing good service to themselves as well as the country, but are held back by motives of modesty. We should like to see the names of such gentlemen in the list of subscribers as well as contributors to the "Royal United Service Institution."

We have to thank the courtesy of Colonel EDMOND RICE, of the United States Army, for his pamphlet, explaining the use of valuable invention of "hooks, hook-bands and hook swivels for stacking rifles, muskets and carbines," which has been adopted by the United States Government for the use of their troops.

The old method of *stacking* arms by interlocking the ram rod heads has been rendered obsolete wherever breech loading muskets without ramrods have superseded the muzzle loading gun. In our own service the Snider Enfield rifle has a steel cleaning rod as a substitute for the old ramrod and arms are stacked in the old fashioned way.

Colonel RICE's invention consists of a band and additional swivel (beside that for the sling) to the rifle and it is decidedly the most appropriate on service. The old system is objectionable in many respects, and has always been so; it involves practically the danger of breaking the ramrod—and at best was a clumsy contrivance, that described does not add to the weight of the rifle, is

stronger, more serviceable and easily manipulated. Our authorities are not much in the habit of making experiments but it would be desirable that they should have specimens of those hook bands and swivels as well as another weapon of which Colonel RICE is the inventor, the celebrated "Rice-Trowel bayonet," which has been issued in large numbers to the United States troops this year, of which we have copied the tactical formula from the United States Army and Navy Journal.

Those inventions are creditable to the training of the officers of the United States Army.

We are pleased to learn from the Secretary of the "Royal Canadian United Service Institution," that its membership is rapidly increasing since its formation, and that it has been recognized by the Mother Institution in England. This we fully expected, and it will prove a great benefit to the Members of the Canadian Institution visiting London. Also the Secretary of War, Surgeon General, Adjutant General, and the Chief of Ordnance of the United States, and are in receipt of their publications regularly. The Institution is in possession of the Report of the Secretary of War of the U.S. for 1873, comprising three large volumes, the postage on which we understand costs over \$7. The Institution has now on its shelves over 400 volumes, relics, autographs, letters and manuscripts for the use of their membership; and with a little additional help the Institution will be placed in a most flourishing condition. It has already an enrolled membership of forty—not bad for a beginning.

But to place it beyond a peradventure we would urge upon the officers of the Force, and especially those holding high rank, to give it their countenance and support by enrolling themselves members of it, and also by contributing to its library and museum such works and relics as may be of an interesting character.

We are pleased to learn, that application has been made to the GOVERNOR GENERAL, through his Military Secretary, Colonel FLETCHER, requesting him to become Patron of the Institution—and we have no doubt the prayer will be cheerfully complied with by his Excellency. Col. FLETCHER, we have every reason to believe, will do all he can to further the interests of the Institution; and we also think that the Militia and Adjutant General Departments, will give their countenance and support.

Now that our Canadian Institution may be said to be fairly established, as one of the Institutions of the country, we hope soon to hear of Officers of the Institution giving lectures, and discussions thereon following, which have proved so beneficial and popular to similar institutions in the old country.

Officers and others desirous of becoming

members of the "Royal Canadian United Service Institution," will please address Captain and Adjutant S. DAVID, 6th Batt., P. O. Box 494, Montreal, who is the Hon. Secretary *pro tem*.

HIS EXCELLENCY'S tour through the coun has given a general satisfaction to the people, and everywhere he has been most graciously received. When at Sault Ste. Marie, Captain Wilson's company turned out, paraded before his Excellency firing the usual salute. His Excellency complimented the Captain on the soldierly bearing of his company.

RIFLE COMPETITION.

HASTINGS RIFLE ASSOCIATION.

The sixth annual prize shooting match of this association, was held on the 16th and 17th August, at the Belleville ranges. There was a larger number of strangers present than on any previous occasion. During the first day the wind blew strong and in gusts, which told heavily against scores as the best shots found great uncertainty in their shooting, a heavy mist lying near the ground, which make the targets at 300 yards very indistinct. Although there were a large number of entries the matches passed off pleasantly, and without a single protest being made as to the award of prizes.

The following entries by non residents were made: James McGivney, G T R, Port Hope; Captain J Harmer, G T R, Port Hope; John Little, T R C, Toronto; W Licit, G T R, Port Hope; C Creggan; "A" Battery, Kingston; A Strachan, 47th Batt; Captain and Adjutant Bailey, 47th; Sergeant John Bailey, (late Wimbledon team); Sergeant M. Bailey, 47th; Sergeant Kincaid, 14th P W O; Private Hume, 14th; Private Harmer, G T R Kingston.

Below we give the scores and prizes awarded in the several matches, copied from the Belleville *Intelligencer*:—

ALL COMERS' MATCH.

Ranges 200, 500 and 600 yards, five rounds to each.

No.	Pts.	Prize
1 M Strachan, 47th Batt.....	45	\$10
2 Capt Crowther, G T R.....	43	9
3 Sergt Cunningham, 49th Batt.....	38	8
4 Pte Hay, G T R.....	37	7
5 Sergt Bennett, 49th Batt.....	36	6
6 Sergt J Bailey, 47th Batt.....	34	5
7 Lt Marshall, G T R.....	34	4
8 A Strachan, 47th Batt.....	34	3
9 Sergt M Builey, 47th Batt.....	34	2
10 Pte C Allen, G T R.....	33	2
11 Pte Tammage, 49th Batt.....	33	2
12 Pte Carruth, G T R.....	32	2

ASSOCIATION MATCH.

Ranges 300 and 500 yards, five rounds to each.

No.	Pts.	Prize
1 Lt Marshall, G T R.....	31	\$15
2 Capt Bailey, 47th Batt.....	30	12

3 Sergt McGivney, G T R.....	30	10
4 Sergt J Bennet, 49th Batt.....	28	8
5 Pte Carruth, G T R.....	28	8
6 Sergt M Builey, 47th Batt.....	25	6
7 Pte Wallbridge, G T R.....	27	6
8 A Strachan, 47th Batt.....	27	5
9 Capt Crowther, G T R.....	27	4
10 Sergt Marsh, 49th Batt.....	26	4
11 Sergt J. Bailey, 47th Batt.....	26	2
12 Pte Hume, 14th Batt.....	26	2
13 Pte Allen, G T R.....	26	2
14 Sergt Cunningham, 49th Batt.....	25	2

ONTARIO MATCH.

Range 500 yards; seven rounds; any position.

No.	Pts.	Prize
1 Sergt Marsh, 49th Batt.....	23	\$10
2 Capt Crowther, G T R.....	23	8
3 Sergt J Bennett, 49th Batt.....	23	6
4 M Strachan, 47th Batt.....	22	5
5 Pte Carruth, G T R.....	22	5
6 Pte Tammage, 49th Batt.....	22	4
7 A Strachan, 47th Batt.....	31	4
8 Pte Allen, G T R.....	21	2
9 Pte Sheean, G T R.....	21	2

VOLUNTEER MATCH.

Ranges 200, 500 and 600 yards. Position—200 yards standing; 500 and 600 yards any position.

No.	Pts.	Prize
1 Sergt M Cook, 49th Batt.....	45	\$15
2 Pte Carruth, G T R.....	42	12
3 Corp'l Harmer, 49th Batt.....	41	10
4 Capt Crowther, G T R.....	39	8
5 Pte Hay, G T R.....	39	7
6 Sergt Marsh, 49th Batt.....	35	6
7 Lt Marshall, G T R.....	37	5
8 Corp'l Kennedy, G T R.....	35	5
9 Sergt Ford, 49th Batt.....	34	4
10 Pte Tammage, 49th Batt.....	34	4
11 Sergt Bennett, 49th Batt.....	33	3
12 Pte Sheean, G T R.....	32	3
13 Pte Allen, G T R.....	32	3
14 Sergt Cunningham.....	29	3
15 Sergt Fraser, 15th Batt.....	28	2
16 Sergt Gerrow, 15th Batt.....	28	2
17 Sergt Belcher, 15th Batt.....	26	2
18 Pte Brouf, 49th Batt.....	25	2

CONSOLATION MATCH.

Five rounds at 400 yards.

No.	Pts.	Prize
1 John Little, Toronto Rifle Club..	14	\$5
2 Sergt Armstrong, 15th Batt.....	13	3
3 J Ferguson.....	9	2

AGGREGATE PRIZES.

1st Captain Crowther, 132 points—special badge O R A and \$20.
2nd Pte Carruth, 123 points—Scholarship Commercial College and \$29.
3rd Lieut Marshall, 122 points, \$8.
4th Sergt Bennett, 120 points, \$5.
5th Sergt Marsh, 116 points, \$5.
6th Sergt McCaull, 113 points, \$3.
7th Pte Tammage, 110 points, \$3.

(Special to the VOLUNTEER REVIEW)

6TH BATTALION RIFLE ASSOCIATION, OF MONTREAL.

The annual meeting of this association took place at the Pt. St. Charles ranges, on the afternoon of Wednesday, 5th Aug. The day was all that could be desired, clear sky and not a breath of wind. The arrangements were splendidly carried out and thanks to the Executive Committee's forethought, the hunger and thirst of the competitors were

looked after and provided for liberally. The firing commenced at two o'clock punctually with the

1st competition or "Maiden Stakes." 200 and 400 yards. Five shots each range. 75 entries.

No.	Prize.	Pts.
1	\$10. Drummer Donaldson.....	27
2	5. Pte Courtney.....	26
3	3. Sergt O'Neil.....	25
4	2. Corporal Thorne.....	22
5	1. Private Ducat.....	21

2nd competition or "Battalion Match." 200, 500 and 600 yards. Five shots each range. 50 entries.

No.	Prize.	Pts.
1	\$10. Qr-Mr Sergt Logan.....	38
2	5. Drummer Donaldson.....	35
3	3. Private May.....	30
4	2. Private Hough.....	29

3rd competition, Lieutenant Colonel Thomas Lyman's prize, "A Silver Cup."

Open to all members of the Battalion; 500 yards; five shots.

The prize in this competition, was a very handsomely chased cup. The donor of which, formerly commanded the regiment, and every year evinces his remembrance of the old corps by presenting a Silver Cup. Colonel Lyman was formerly D. O. M. on Colonel Dyde's staff. This competition excited greater interest than any other among the members of the Battalion. It was very closely contested, the result being a tie (at 14 points) between Drummer Donaldson and Private Hough, who scored precisely alike, shot for shot all through, but in firing off the Drummer made a "centre" to the Private's "outer" thus bearing him and winning as handsome a prize as we have seen for many a day.

4th competition or "Open Match" Open to all members of the Active Militia (late "Royals" included.) Ranges 300 and 500 yards. Five shots each range. Entrance, 50 cents. 42 entries.

No.	Prize.	Pts.
1	\$10. Pte A Ross (late "Royals").....	31
2	5. Corporal J H Stuart, M G A.....	30
3	3. Sergt Major Blackall, M G A.....	30
4	2. Lt Bulfour (late 8th Batt).....	29

There were four scores of 29 and a good many others following very closely in their wake.

5th competition or "Consolation Stake." Five shots at 200 yards brought forth 40 entries.

No.	Prize.	Pts.
1	a coat (given by R Leath Esq) Pte E Honbert.....	13
2	a hat (given by J Stenhouse, Esq) Pte Jas Robinson.....	12
3	a hat (given by Maroon & Co.) Pte Wm Moffatt.....	11
4	\$2. Drummer Walker.....	11
5	2. Pte Wm Price.....	9
6	1. Pte Andrews.....	8
7	1. Pte Beattie.....	7
8	1. Pte Foster.....	7
9	1. Pte Shery.....	6

For the highest "Aggregate Scores" in competitions 2, 3 and 4, 1st prize won by

Qr-Mr Sergt Logan with 74 points, was a very handsome silver medal presented by Captain and Adjutant David, and the second prize a gold pencil case, presented by Major Home (late 6th) won by Drummer Donaldson with 62 points.

The prizes were paid on the ground at the termination of the matches, and it is with great pleasure we learn that both officers and men of this only red coated regiment in the city, are determined to do their best to increase the efficiency of their regiment not only as marksmen but in drill too. The following are the officers of the Association this year :-

- President—Lieut. Colonel Martin.
- Members—Major Gardner, Sergt. Major Pottigrew, and Sergeant Hall.
- Treasurer and Executive Officer—Major Sinton.

Secretary— Captain and Adjutant David.
 Surgeon—Surgeon David.
 Great praise is due the Executive committee for the way they carried out the several parts, more especially that veteran, Major Sinton, the executive officer, to whom those who fired would convey through you, their thanks. Owing to unavoidable absence from town, Dr. D. A. Hart, had to replace Surgeon D. David, whose pleasant smiles and kind attention to his guests (and patients) were missed. There was, we regret to say, one accident, through the bursting of the breach of the rifle, the pieces of the cartridge entering the man's (in whose hands the rifle was) forehead, making an ugly scar for the time. Cols. Fletcher, Bacon, and Labranche, Major Horne, and Capts. Geddes and Stevenson (1st Batt.) and many others, visited the ground during the afternoon. Lieutenant Colonel Martin, formerly the 6th, was on the ground all the time.

CREEDMOOR—LONG RANGE SHOOTING—THE AMATEUR CLUB BADGE DECIDED—PROGRAMME FOR THE FALL MEETING.

(Correspondence of VOLUNTEER REVIEW)
 New York, Monday, Aug. 24.

The seventh competition for the Amateur Rifle Club long range badge was held at Creedmoor on Saturday. In the earlier stages the shooting was interrupted by showers, notwithstanding which the averages equal any of the previous contests. The distances were 800, 900 and 1,000 yards five shots at each distance with the privilege of two sighting shot. The badge was won for the third time by Mr. L. L. Hepburn who now becomes the possessor of it. His score of 54 out of a possible 60 is a remarkable one. The following is a complete score of Saturday's match :-

Yards.	Names.	Totals.
	L. L. Hepburn.	
800.....	.....	19 } 54
900.....	.....	18 }
1,000.....	.....	17 }

T. S. Dakin.		
800.....	.....	19 } 54
900.....	.....	19 }
1,000.....	.....	16 }
J. S. Conlin.		
800.....	.....	19 } 50
900.....	.....	16 }
1,000.....	.....	15 }
F. S. Gardner.		
800.....	.....	16 } 48
900.....	.....	15 }
1,000.....	.....	17 }
E. H. Sanford.		
800.....	.....	16 } 47
900.....	.....	18 }
1,000.....	.....	13 }
A. V. Canfield, jr.		
800.....	.....	16 } 47
900.....	.....	18 }
1,000.....	.....	13 }
L. Geiger.		
800.....	.....	15 } 40
900.....	.....	15 }
1,000.....	.....	16 }
H. Fulton.		
800.....	.....	16 } 46
900.....	.....	19 }
1,000.....	.....	11 }
J. T. B. Collins.		
800.....	.....	17 } 44
900.....	.....	14 }
1,000.....	.....	13 }
G. W. Yale.		
800.....	.....	20 } 43
900.....	.....	7 }
1,000.....	.....	16 }

This match has naturally caused great interest among our marksmen, more especially as it was the first public contest at the distances yet done for the forthcoming International Match. Below is a summary of the scores made by the different winners :-

Yards.	Names.	Totals.
May 30—L. L. Hepburn.		
800.....	14 } 46
900.....	17 }
1,000.....	15 }
June 20—J. S. Conlin.		
800.....	16 } 45
900.....	12 }
1,000.....	17 }
June 27—J. Bodine.		
800.....	18 } 45
900.....	12 }
1,000.....	15 }
July 11—T. S. Dakin.		
800.....	17 } 48
900.....	15 }
1,000.....	14 }
July 25—A. V. Canfield, jr.		
800.....	14 } 45
900.....	12 }
1,000.....	19 }
Aug 8—L. L. Hepburn.		
800.....	18 } 54
900.....	19 }
1,000.....	17 }
Aug. 22—L. L. Hepburn.		
800.....	19 } 54
900.....	18 }
1,000.....	17 }

SHORT RANGE CONTEST.

The eighth competition for the Turf, Field and Farm Badge, five shots at 200 yards, position standing, was also held on Satur-

day. E. H. Madison was the winner with a score of 17 out of a possible 20. L. C. Bruce, was second with 16 points. Both used the Ballard rifle.

THE FALL MEETING.

The National Rifle Association has just issued a synopsis of the programme for the fall meeting to take place during the last of September, the day for which is not definitely fixed. For want of funds the Press Match, which formed a feature in last year's meeting, has been omitted. The following is the programme as at present issued. Several alterations will probably be made before it is finally decided on.

1st—Judd Match—200 yards, standing; any military rifle; open to all members of the National Rifle Association.

2nd—Sportsman's Match—Same distance and any rifle under the rules; open to all members.

3rd—First Division Match—200 and 500 yards, five shots at each distance; weapon, State Remington Rifle; to be competed for by teams of twelve men from each regiment in the First division, National Guard of the State of New York.

4th—Second Division Match—The same conditions; open to teams from the Second division, National Guard of the State of New York.

5th—New York State Match—The same conditions as the division matches; open to teams of twelve men from all regiments in the National Guard.

Sixth—New Jersey Match—200 and 500 yards, five shots at each distance; open to teams of twelve men from each regiment of New Jersey National Guard; weapon, such as shall be designated by the Governor of that State.

7th—Army and Navy Journal Match—500 yards, seven shots at each distance; open to teams of twelve men from any military organization in the United States, including the regular forces.

8th—The Gatling Match—500 yards, seven shots; open to teams of twelve men from each regiment of the National Guard of the State.

9th—All Comers' Match—500 and 600 yards, seven shots each distance; open to all comers; any military rifle.

10th—Consolation Match—500 yards, seven shots; open to unsuccessful competitors; any military rifle.

11th—Bennett Long Range Championship—800, 900 and 1,000 yards, fifteen shots each distance; any rifle within the rules; open to all comers.

First prize, silver trophy, costing \$350; second prize, \$100 in cash; four prizes of \$50 each; four of \$30 each; four of \$20 each; ten of \$10 each, and ten of \$5 each, in all \$1000. The prizes for the other matches are not yet announced; I hope to state them in my next.

RIFLE COMPETITION AT BEDFORD.

HALIFAX, Aug., 27.

The Rifle Competition at Bedford continues. The silver medal of the National Rifle Association was won by Sergt. Corbin, 63rd Battalion, Halifax Rifles, who scored 53; ranges, 450 and 600 yards, five rounds at each. The Battalion Match was won by the 78th Colchester and Hants team, by one point over the 63rd Halifax. Six battalions took part in the match, the number of representatives of each battalion being ten.

RIFLE SHOOTING IN CANADA.

The meeting of the Province of Quebec Rifle Association at Montreal, which was concluded on Saturday last, has been memorable as the first instance in which American riflemen and American rifles have been fairly tested against the crack shots of Canada, and the results obtained are important as affording an estimate of comparison both between the men themselves and the weapons they use.

The match in question was held at Point St. Charles, in the suburbs of Montreal. It commenced on Tuesday, August 11, and lasted until the following Saturday. The number attending was some 250, gathered from all the provinces of Canada, almost all of whom were old experienced shots, who had been engaged in such contests for years and among whom were to be found quite a number of those who had been sent to Wimbledon at different times to represent the Dominion. In fact it was the remark of the Americans who were present that they had never before seen such a collection of steady, reliable marksmen. Their skill may be judged from the fact that in one team of five each man averaged 24 points out of a possible 28 at 500 yards. Although no formal attempt had been made by our National Rifle Association to be represented a few of the Amateur Rifle Club, who were spending their vacation near the line, took advantage of the occasion to run over to see how the thing was done by our Canadian brethren.

The range is located on a triangular point projecting into the St. Lawrence, just above Victoria Bridge. It is far inferior to Creedmoor in both appearance and convenience. It has five butts placed some distance apart, each of which is provided with two targets, making only ten targets available. The side system of marking is used, as the ground is too irregular to permit the targets to be seen by any one lying down. The firing is conducted from wooden platforms, some three feet high, erected at each firing point. The arrangements were almost identically the same as at Creedmoor, and showed no little administrative ability upon the part of Colonel Fletcher, the Secretary, and of Lieut.-Col. Worsley and Major Honorable M. Aylmer, the Executive Officers, as well as of the other members of the Executive Committee. A bugler was placed between each set of targets who sounded the "Commence" and "Cease firing" as the red flag was displayed, prefacing the call in each instance by the number of the butt. No telegraph or other communication with the markers was used except that sometimes one of the officers would ride down to settle

a dispute. Although from the experience of the competitors things worked more smoothly than at Creedmoor, yet it was noticeable that the same questions in relation to the marking occurred from time to time as those with which the officers of the National Rifle Association have had to contend. In all cases, however, but one, when the targets were examined, the marking was found to be correct, as has generally been the case at Creedmoor.

From its situation the range is swept with great force by every current of air. This is the more puzzling for the reason that the buildings and fences of the Grand Trunk Railroad on the left prevent the marksman from feeling their force, his only method of judging being the flags above the targets, which form a very poor guide to those unfamiliar with the ground when firing at long range. This difficulty in regard to the wind was the main obstacle which the Americans had to contend against, and in the first competitions with military rifles bothered them exceedingly, the more so as it blew on different days in entirely different directions, affecting their elevation as well as their allowance for wind.

The great velocity and low trajectory of the Sharpe's rifle used by Col. Gildersleeve and Mr. Yale enabled them to always aim on the target. With the rifles used by the others an allowance of from four to six feet and even more had to be made, and at 900 yards they had to allow seven points, or fourteen feet, even with the target rifles. This was the more felt as the competitors for positions upon the Irish team had prevented those present from practising with their military rifles, and had made them all quite rusty as to their proper elevation and allowance; in fact only one of them had ever before fired his rifle at 500 yards, the distance at which several matches had been shot, and he but once, and none had fired at 400 yards at all.

Notwithstanding these drawbacks the results cannot but be considered as most satisfactory to all Americans. In the Frontier Stakes (seven shots at 500 yards, the first match in which the Americans participated), Col. Gildersleeve took the 8th prize, making 26 points out of a possible 28, the fact that there were five better scores showing the skill of his opponents. In the following match, the City Stakes (seven shots at 600 yards), the superiority of his weapon (Sharpe's military, 44 calibre) over the Snider was shown by his taking the first prize by the same score (26 out of a possible 28), one other competitor making 25 and no one else more than 23. As the wind was extremely strong and baffling this was justly regarded as extraordinary, reflecting great credit upon both the marksman and the rifle he used.

In the Association Match (five shots at 500 and 600 yards), Mr. Yale took the first prize with a score of 34 points out of 40, Col. Gildersleeve the ninth with a score of 32, the difference arising from but two points, again showing how close the shooting was. The score of the five Americans was but ten points beyond that of the fourth team in this competition, and they grumbled a good deal at their carelessness in neglecting to practise before coming up, particularly at 600 yards.

Although the Canadians had been free to acknowledge the superiority of the Sharpe and even the new Springfield over the Snider as military weapons, they were decidedly of the opinion that for long range shooting their Metford and Rigby muzzle loaders, such as will be used by the Irish team, were

superior to the breech-loaders used at Creedmoor. In this, however, they erred most decidedly; for when it came to the long range shooting the Americans were found to shoot better instead of worse.

In the Strangers Stakes (competed for with military rifles at 500 yards and with small bore at 800, and where the Snider generally has the best of it), Lieut. Fulton made seven consecutive bull's eyes, taking the first prize. Mr. Canfield took the second with a score of 26 out of a possible 28, and Mr. Omond the fourth out of a like score. All these used the Remington Creedmoor rifle, 44 calibre. As before stated the wind was very strong, requiring an allowance of four-teen feet, and the result was justly considered remarkable.

In the next match, Ladies' Cup, the Sniders shot at 500 and 600 yards, the Americans using their Remingtons at 800 and 900 yards. Lieutenant Fulton here made 54 out of a possible 56, 7 bull's eyes at 800 yards and 23 out of 28 points at 900 yards. This gave him the second prize, Mr. Bell, of Quebec, beating him by one point. This shooting was really extraordinary, far surpassing that of the Irish team.

The hospitality with which the Americans were received far surpassing their most sanguine expectations. In the first instance a special exemption was made in the terms of the programme so as to admit their military rifles, which otherwise would have been excluded, their calibre being less than the Snider. After their arrival they were treated as the guests of the Executive Committee when on the range. The use of the large marquee used by the officers was placed at their disposal, and they were informed that the committee would feel offended if they did not lunch with them daily. In addition they were privately entertained by Capt. Esdaile. Not having considered themselves as in any way entitled to such flattering attentions the American riflemen felt themselves under great obligations for the manner in which they have been received. It is probable that quite a number of Canadians will come to Creedmoor in September to attend the full match of the National Rifle Association, and particularly to participate in the competition for the "Bennett Long Range Match." If they are received with the same cordiality as they have exhibited on this occasion these friendly contests of skill will prove of frequent occurrence, and besides lending a new feature of interest to rifle matches of both countries will do much to create and cement a friendly feeling between their citizens.

The results of this match in the opinion of the Americans attending it may be summarised up as follows:—

- 1st—That the Canadians are the most hospitable people in the world.
- 2nd—That Canada has a far greater number of experienced first class shots than we have.
- 3rd—That our best shots are as good as theirs, although fewer in number.
- 4th—That the Snider is a good military rifle, and although it is surpassed by ours yet that we have got to practise constantly at Creedmoor, particularly at 600 yards, to beat the men who shoot.
- 5th—That our long range Remington and Sharpe breech-loaders are in no way inferior to the muzzle-loading Metford and Rigby.
- 6th—That although it is not wise to bet upon defeating the Irish team (a point which the enthusiastic should bear in mind), yet the prospect of doing so is not such up hill work as it seemed some time ago.—*New York Herald.*

SOLILQUY AT NIGHT.

(For the REVIEW.)

Kind Nature's nurse is softly stepping
Over the Earth in her mantle dark;
In the Princely hall and the lowly dwelling,
On the tented field and the lonely bark:
To rich and poor, to strong and weak,
Giving to all the blessings of sleep—
Much needed.

An healing balm to the throbbing brain
Are the hours of sleep's forgetfulness!
Like an interlude in our life of pain
Are the grateful hours of unconsciousness!
Mingling sweet in life's bitter gall
A panacea for the woe of all—
Freely given.

She oils the wheels of busy life
In the maddened whirl for empty gain;
Allays the friction of the heated strife
In the struggle dire for a gilded fame!
But there are some who cannot rest
Even on her inviting breast—
I'm one.

Some pains there are she cannot ease
And wants that she cannot supply;
Though breathe she softly as zephyr's breeze
On heated brow and aching eye!
She has no charm to soothe the one
Who in this world is all alone—
Like I.

There's a hunger deep in this soul of mine
That nought but God can satisfy!
To hear Him say "I'm ever thine"
And will to thee be ever night;
"I would take away this dark unrest,
My heart would then with peace be blest.
No more alone.

But a darker form swift glides among,
With noiseless steps, the abodes of men—
Busy at work midst the sleeping throng
Stillling some hearts to ache never again.
Com e Sister of sleep and bid me begone
Where never again shall I be alone—
In Heaven.

H. W. K.

THE GATLING GUN.

We publish to day from the U. S. Army and Navy Journal the conclusion of the Report of the Board of officers on the Gatling Gun, and we need not remind our readers that the conclusions they have arrived at were long since foreshadowed in the VOLUNTEER REVIEW. The report is exhaustive and settles the position of the "Gatling Gun" as a warlike weapon beyond question.

The board have deemed it desirable to place a somewhat liberal construction upon the phraseology of the act of Congress under which they were appointed to conduct the trials herein recorded. The law, as well as the order appointing the board, provides for "experiments and tests of two Gatling guns of large calibre for flank defence of fortifications," leaving to be decided by others what calibres should be tried, and also whether the experiments should be conducted with special reference to permanent works only, or should embrace detached field fortifications and entrenched lines. The intention has been to make the tests sufficiently comprehensive to justify an expression of opinion as to the value of the Gatling gun for flanking purposes generally, in all kinds of works strengthened by flanks whether requiring, under existing practices, an artillery armament or otherwise.

The lines of defence in our permanent works are, with one or two exceptions, comparatively si ort. In works having high counterscarp walls and deep ditches, the effective fire of the casemated flanking guns is necessarily restricted to sweeping the ditch; in others, where the counterscarp is comparatively low, it can easily protect the terreplein of the covered way and reach the crest of the glacis, while in exceptional cases even the approaches to the work for some distance can be reached and commanded from the flank casemates with, slightly curved, fire delivered over the glacis.

In a few works, indeed, having neither counterscarp nor glacis, the flanking guns have an unobstructed view of the approaches.

In order to flank the ditches only, ranges exceeding 200 yards will seldom be necessary, and an increase of 50 yards will, in most cases, attain and sweep the covered way.

Whenever the approaches to a permanent work can be seen or reached from the flank casemates, the latter should of course be armed with guns having as long a range as the case requires, provided their effectiveness for flanking purposes at short ranges is not impaired thereby; one essential condition of such effectiveness being the capacity to deliver a rapid and intense fire at the critical moment.

The lengths of the lines of defence, or the range for flanking guns, in some of our permanent works are given below.

Fort Warren, Boston Harbor, Massachusetts, has casemated flanks; the greatest range when the flanking guns have to attain is 160 yards.

Fort Independence, Boston Harbor, Massachusetts, also has casemated flanks; but there being no counterscarp wall to intercept the fire, flanking guns of long range are applicable.

In the fort at Clark's Point, New Bedford, Massachusetts, the flanking guns would attain the opposite counterscarp with a range of 84 yards.

The fort at Sandy Hook, New York Harbor, if completed substantially according to the official plan, will have lines of defence on its longest front equal to 267 yards.

Fort Tompkins, New York Harbor, has casemated counterscarp galleries for defending the ditch, the longest range for flanking guns being 136 yards.

Fort Wadsworth, New York Harbor, has casemated flanks, the longest front being the gorge, where the range to the opposite counterscarp is 165 yards.

Fortress Monroe, Virginia, is partially casemated; the longest range for the flanking guns, in order to reach the opposite counterscarp is 208 yards.

Some of the flank casemates see over the counterscarp and command the approaches, and might advantageously be armed with long range flanking guns.

Fort Pulaski, Georgia, has casemated flanks on the gorge face, to protect the bridge over the ditch; distance from flanks to opposite counterscarp, 168 yards.

Fort Clinch, Amelia Island, Florida, has casemated flanks; longest range, to the crest of the glacis, 191 yards.

This brief list comprises works as unlike each other in relief and general design as the entire catalogue of permanent fortifications designed for the defence of our coast affords. In some, like Fort Wadsworth, the heavy guns, as well as those for flanking defence, are arranged tier above tier, thus concentrating a large armament upon a small

area; in others, like Fortres Monroe, the work covers a large space and delivers but one tier of fire from heavy guns. We have not, probably, half a dozen works, either completed, under construction, or projected, having lines of defence exceeding 200 yards in length; and although there are quite a number in which suitable guns in the flank casemates could command the approaches for a much greater distance, the necessity for far reaching flanking guns in these cases is not deemed imperative, for the reason that the terrepleins of the flanks carry heavy guns, mounted *en barbette*, available for the longer ranges. There would seem, therefore, to be no existing reason for the substitution of long range for short range guns in the casemated flanks of our permanent works, unless we shall secure thereby a more intense fire at short range than we now possess, and that, too, without sacrificing any essential feature of the existing method of flank defence by howitzers. One feature of the defence by howitzers is their capability of throwing shells. These are sometimes necessary for sweeping away temporary works improvised by an enemy's column, to cover their approach, especially in crossing the ditch in an open assault. When the barbette guns can be relied upon this purpose, the necessity for retaining shell guns only in the flank casemates is not obvious. In the general case, however, as preliminary to any open assault except a *coup de main*, either the barbette fire of the besieged is destroyed or arrangements are made to keep it subdued or silent during the critical period of the attack.

In field fortifications, whether the guns for flank defence are arranged to fire through open embrasures between merlons or otherwise, they generally command the approaches for a considerable distance; and a gun that can deliver a rapid and intense fire, effective at both short and long ranges is very desirable. Indeed, their power to attain an enemy's column at a long distance obviates, in a measure, proportioned to their efficiency, the necessity for using shell guns, or any other flanking guns, at close range. The same is true not only of a line or lines of detached field works located in such defensive relations to each other that the guns of one work flank the faces and sweep the approaches of those adjacent to or in advance of it, but also of continuous lines of intrenchments, with salient points, at intervals armed with artillery to defend the approaches and flank the retired portions. Under these circumstances ranges for flanking guns of 1,000, 1,200, or even 1,400 yards are not deemed excessive; and the gun that can deliver the most effective fire against troops at these distances must be regarded as the best, other things, including efficiency at short ranges, being equal. If, in addition this hypothetical gun shall have proved itself capable not only of delivering but of maintaining uninterruptedly for hours a most destructive fire at all distances, indifferently, from fifty yards up to and beyond a mile, a power conspicuously absent in our present service ordnance, its introduction into the armament of our fortifications, as an auxiliary, would seem to be an obvious necessity. The Gatling gun is such an arm, and is, beyond question, well adapted to the purposes of flank defence at both long and short ranges.

The 0.42 inch or 0.45 inch calibre Gatling gun can easily fire 400 rounds per minute continuously for hours, with the necessary reliefs at the crank. The 1.00 inch calibre Gatling gun can fire 155 to 160 shots per

minute, but requires more frequent reliefs at the crank than the smaller calibres.

RESULTS AT 150 YARDS.

In this instance the Gatling gun, if the firing had been continued with the same ratio of hits up to one minute thirty four seconds, the time occupied in firing six rounds from the Napoleon, would have put 633 shots through the target; and it would moreover, have been by far the most effective weapon of the two against troops on account of the greatly superior penetration attained with it, the canister balls passing through but three thicknesses of one inch yellow pine boards, while, the shots from the Gatling gun penetrated six thicknesses. The killing and disabling effects of a projectile in a column of troops is, within cer-

tain undefined limits, proportional to its penetrating power.

The canister projectiles (from Gatling gun here used, although giving a large number of hits in a brief time, are not considered effective, on account of the smallness of the balls and their slight penetration.

The maximum penetration for direct hits is scarcely one 1-inch yellow pine board. It will be seen below that at 200 yards, (a suitable range for canister,) the penetration is less than half an inch. The disabling effects of these projectiles against any kind of troops would be insignificant in comparison with those produced by the solid shot from the 0.42 inch or 0.45 inch calibre Gatling gun, or even by the special canister from the 12-pounder Napoleon gun or the 8 inch siege howitzer, at the same range.

strikingly shown by the record. At 200 yds. it gave but 52 hits, as against 312 hits with the largest lead canister, and 560 hits with the smallest; four rounds being fired in each case.

The service canister for the 24-pounder flank defence howitzer contains the same number of iron balls (48) as the 8-inch service canister; but as the balls are much smaller in the former than in the latter, being, indeed, only a little more than one-third as heavy, their range, penetration, and general effectiveness would be proportionally less; giving 4 rounds at 200 yards probably not more than 25 or 30 disabling hits.

But if filled with lead balls, 0.75 inch diameter, the 24-pounder howitzer canister, retaining the prescribed weight of the finished projectile, would contain about 170, and would doubtless be quite as effective, in proportion to the number of lead balls fired, as the special 8 inch canister, delivering, in four single rounds at 200 yards, upwards of 200 disabling hits in a target of the dimensions used. A number of explosive bullets were fired from the 1 inch Gatling gun into the penetration target, at a distance of 200 yds. They usually penetrated three or four boards and then burst, splintering the target considerably. The shattering effect, however, appeared to be greatly diminished by the intervals between the boards, and would doubtless have been much greater in solid wood.

PENETRATION AT 150 150 YARDS.

Into 1-inch yellow-pine boards, separated by 1-inch intervals.

	Maximum.	Minimum.	General.
0.42-inch-calibre Gatling gun.....			6 to 7 boards
1.00-inch-calibre Gatling round canister, 0.45 inches diameter.....			1 board.
12-pounder Napoleon lead, canister, 0.75 inch diameter.....	3 boards, full.....	2 boards.....	3 boards.
8-inch howitzer canister, 0.75 in. diameter, 3 boards.....	3 boards.....	1 board.....	2 boards.
8-inch howitzer canister, 0.97 in. diameter, 3 boards, full.....	3 boards, full.....	2 boards.....	3 boards.

PENETRATION AT 200 YARDS INTO 1-INCH YELLOW-PINE BOARDS, SEPARATED BY 1-INCH INTERVAL.

	Maximum.	Minimum.	Average.
0.42 inch Gatling gun.....			6 boards = 6 inch.
1.00-inch Gatling gun round canister, 0.45 inch diameter.....	0.70 board = 0.70 inch	0.23 board = 0.23 inch	0.45 board = 0.45 in.
1.00-inch Gatling gun slugs, 0.45 inch diameter.....			Much less than round canister.
12-pounder Napoleon lead canister, 0.75 inch diameter.....	3 boards.....	2 boards.....	Scant 3 boards
8-inch howitzer lead canister, 0.75 inch diameter.....	3 boards.....	1 board.....	3 boards.
8-inch howitzer lead canister, 0.97 inch diameter.....	3 boards.....	1 board.....	2 boards.

Upon the results of the foregoing competitive trials at ranges of 150 and 200 yards, reference being also had to the diagrams of the targets, it may be remarked as follows, viz:

First. At 150 yards the 12 pounder Napoleon gun, firing double special canister, and the 0.42 inch-calibre Gatling, used with the oscillator so as to cover the target laterally, are about equal in number of hits. The 12-pounder, however, made the best target for want of sufficient dispersion vertically in the Gatling.

On the other hand this deficiency is perhaps more than compensated by the superior penetration of the latter.

Second. At both 150 and 200 yards the 1.00 inch calibre Gatling, firing canister containing either slugs or round balls, cannot be deemed an effective arm, unless the penetration can be increased, for many of the shots would be stopped by the clothing worn by the soldiers, and many others would fail to inflict disabling wounds.

The canister ammunition used by the board contained only coarse grained powder adopted for previous trials, when the case was made of thin metal. As the thickness and strength of the case has been greatly increased, a fine grain quick powder is admissible, and much better results can reasonably be expected from it.

It is the intention of the company to use fine grained musket powder for all canister ammunition prepared hereafter for the 1-inch gun.

Third. Forty Springfield rifles, served with average skill, are equal to one 0.42 inch calibre Gatling gun in the number of shots delivered in a given time; but at 150 yards the latter gave 38 per cent. more hits than the former; and at 200 yards 79 per cent. more. The forty rifles, however, covered the targets better than the Gatling, and for an equal number of hits would have been more effective against a deep column of troops on account of their greater dispersion vertically.

Reckoned simply by the number of hits in the target, one 0.42 inch calibre Gatling, using the oscillator, is equal to seventy Springfield rifles firing against time, and fifty two rifles firing deliberately. Without the oscillator every shot from the Gatling should strike the target.

Fourth. At 200 yards the 8 inch howitzer, firing double special canister, gave more hits than the 0.42-inch calibre Gatling, used with the oscillator, in the proportion of 1,463 to 574, (average.)

At 200 yards, and probably at 250 yards, one 8-inch howitzer firing this canister would therefore be superior in number of hits to two 0.42-inch calibre Gatling fired with the oscillator; but this superiority, if it exist at all, in delivering disabling hits against troops, is probably restricted to ranges not exceeding 200 yards, bearing in mind the great difference in the penetration recorded above. The howitzer covers the target vertically much better than the Gatling.

Fifth. The great inferiority of the 8-inch service canister containing 48 iron balls is

RESULTS AT 500 YARDS.

The record shows in a striking manner the vast superiority of the Gatling gun against troops at ranges beyond effective reach of canister, or say beyond 250 yards, for the projectiles in competition with it whether case shot or shell, are subject to a variety of disadvantageous conditions, more or less beyond control, among which may be enumerated the inaccuracy common to smooth bore guns; the varying effects of the wind, due to changes in either force or direction, or to both; the eccentricity of the projectiles, and the imperfection of fuses, the latter having been, during the trials of the board, a conspicuous and fruitful cause of the very poor results obtained.

At 500 yards 1 Gatling, fired with oscillator, gave 58 per cent. more hits than two 12 pounder Napoleons and one 8-inch howitzer together, each firing 1 minute 30 seconds.

At 800 yards the proportions of hits were very largely increased in favor of the Gatling, there being an average of 320 hits for 1 Gatling against an aggregate of only 38 hits for 2 Napoleons and 1 howitzer.

Some of the shells did not explode at all, while others burst either too soon or too late to be effective.

In some cases the fuse blew out without bursting the shell. There were only a few bad line shots, and it was not considered that the pieces were unskillfully served. Neither was the wind unusually high while firing with shell and case shot. Indeed, no abnormal condition prevailed in any marked degree, and the failure to achieve good results was due directly to characteristic defects in the kind of ammunition used, not under certain and uniform control of existing knowledge or skill on this subject. The ammunition had been prepared with great care by Major Baylor, and in average excellence was not regarded as inferior in quality.

RESULTS AT 1,000 TO 1,150 YARDS.

Targets representing a column of infantry. Guns on trial: 0.42 inch calibre Gatling gun; 4.50 inch calibre siege rifle; 8-inch siege howitzer.

The firing at the ranges from 1,000 to 1,150 yards was made at a series of targets repre-

sent a regiment of infantry in a column of companies, at full distance, approaching or retiring from the battery, the nearest company being 1,000 yards and the farthest 1,150 yards distant from the gun.

The targets were made of linc yellow pine boards; were each 6 feet high and 50 feet wide, and placed one behind the other 50 feet apart.

In these trials the same causes already noticed operated to prevent good results with the case shot. Some did not burst at all; some passed the column of targets before bursting; several fell short, and a few had so great a lateral deviation as to be lost.

With a time-fuse that, at 1,000 to 1,200 yards, would burn uniformly to within half a second of the time to which it is cut, the 8 inch howitzer ought to give many more hits in a column of targets like those used than the small Gatling gun. The percussion fuses, used with the sharpnel from the 4 1/2 in. rifle, proved to be equally unreliable. As a rule, they cannot be depended upon, after making a reasonable allowance for contingencies, to explode when the projectile strikes; and this uncertainty, taken in connection with the erratic flight of some projectiles, which were entirely lost, and the meager results due to the want of desired precision in others, renders their aggregate effectiveness variable and capricious.

In the column of targets the Gatling gun gave 17 per cent more hits than the 8 inch howitzer and 144 per cent more than the 4 1/2 inch rifle.

In the trials at Shoeburyness, reported the 28th of November, 1871, the same difficulty was encountered. In referring to it the committee remark as follows: "Looking to the uncertainty of shell fire, even with the best percussion or time fuses, there can be little doubt that a body of troops having to advance to the attack of an entrenched position, over any distance within 1,200 yards, would suffer far more from Gatling guns delivering an incessant and widespread fire of the deadliest mitraille than from field-guns."

RESULTS AT 1,200 YARDS.

Target 9 feet high by 45 feet wide. At 1,200 yards the only gun tried by the board was the 0.42-inch Gatling. Two trials were made, firing deliberately without the oscillator.

	Number of shots fired.	Number of hits.
First trial	700	150
Second trial	600	413

The oscillator not having been used the target was not well covered by the shots in either case, the lateral dispersion on the first trial being 27 feet and on the second 30 feet. With an oscillator covering a sector of 3 degrees, as now arranged, the lateral dispersion at 1,200 yards would be 188 feet, assuming the projectiles to fly in the vertical plane of sight, and the number of hits would not have exceeded one fifth to one fourth of those really obtained.

A sector of 1 degree embraces a target 62 feet wide 1,200 yards dist nt.

Although the advantages, for target practice, where the hits cannot be seen even with a glass of an automatic oscillator adjustable at pleasure for any sector from zero to 10 or 12 degrees are plainly obvious, it does not follow that such a mechanism is equally necessary under all circumstances, when operating against troops, for the reason that in the latter case the points reached by the projectiles (unless the firing is very bad) and the effects produced can generally be observed from the gun, and the direction and elevation of the piece adjusted and varied, from time to time, as circumstances require. But in order to leave as little as possible to the

judgment of the enlisted men, by whom in actual service the gun will be served, and thereby secure the best results, an adjustable automatic oscillator is considered desirable.

VIEWES AND RECOMMENDATIONS OF THE BOARD

I. Among the advantages possessed by the Gatling gun may be enumerated the lightness of its parts, the simplicity and strength of its mechanism, the rapidity and continuity of its fire without sensible recoil, its effectiveness against troops at all ranges for which a flanking gun is required, its general accuracy at all ranges attainable by rifles, its comparative independence of the excitement of battle, the interchangeableness of its ammunition with the same calibre of small arms, and its great endurance.

II. Its disadvantages, compared with howitzers and other shell guns, are, its inability to deliver a curved fire so as to reach an enemy behind intervening obstacles, or to search his rifle pits and covered ways; its want of effectiveness against troops covered by even the slightest entrenchments, or lodged in villages and houses, or in heavy woods; and generally its entire deficiency in breaching power.

III. In permanent fortifications, where the lines of defence do not exceed two hundred yards, and therefore very generally in our permanent works, nothing would be gained by using the Gatling 0.42 inch gun for flanking purposes instead of the 8 inch howitzer, firing the special canister devised by the board. In special cases, where the flanking guns can fire over the counterscarp and command the approaches for a considerable distance, the Gatling gun, being good at both long and short ranges, could be advantageously introduced as an auxiliary.

IV. For the defence of detached field fortifications, placed in defensive relations to each other, and entrenched positions with long lines of defence, the Gatling gun would be superior to any other species of artillery against troops exposed to view, and therefore a most valuable auxiliary to shell guns.

V. One advantage possessed by the Gatling gun is its lightness, and hence the ease with which it can be withdrawn from position, when exposed to breaching batteries or any overpowering or disabling fire, and replaced in battery to meet the critical moment of an assault.

VI. The board recommend the adoption of the Gatling gun as an auxiliary arm for flanking purposes, but not to any very considerable displacement of shell guns, in any locality or under any circumstances. The calibre of the Gatling gun adopted should be the same as that of the service small arm, so that the ammunition will be interchangeable between the two.

VII. The 1-inch calibre Gatling gun possesses no special advantages for flanking purposes. In rapidity of fire it is greatly inferior to the smaller calibres, and this inferiority is not compensated by the greater weight and longer range of the 1-inch solid shot, while the 1-inch canister projectiles, whether filled with spherical balls or cylindrical slugs, cannot, with the penetrations obtained by the board, be considered an effective missile against troops at 150 to 200 yards, while beyond 200 yards it would be comparatively harmless. With quicker powder, it would doubtless give better results.

VIII. The service canister for the 8-inch siege howitzer is manifestly very much inferior to the special canister used by the board. This remark, of course, applies equally to other calibres. It is therefore recommended that the use of round cast iron balls for canister be discontinued, and that lead balls not lighter than 11 to the pound be substituted, therefor. Ball 8 to the pound would perhaps

be still better. But for the use of this special canister the 0.42-inch Gatling gun would in all cases have given the best results in the comparative trials had before the board.

IX. Although the board is not prepared to state to what precise extent the Gatling gun should be introduced into that portion of the armament of fortifications intended, either specially or contingently, to be used for flanking purposes, the proportion of one Gatling gun for one shell gun is suggested. It is believed the number of Gatlings ought not to exceed the number of shell guns.

X. It is further suggested that the Gatling Gun Company be requested to devise and manufacture for trial two casemate carriages for their 0.42 in gun, to be placed side by side in one trunk casemate, the carriages to be so arranged, if practicable, that the centres of motion for elevating and depressing the piece, as well as for changes in the direction of fire, shall be at the throat of the embrasure; also that the company be requested to devise an improvement in the oscillator, as suggested in the remarks under the head of "Its faults at 1,200 yards."

XI. The board have necessarily limited the scope of their recommendations to the restricted field of inquiry contemplated in the order, and have therefore not touched upon the most prominent advantages claimed and generally conceded for the Gatling gun. Among these may be enumerated its peculiar power for the defence of entrenched positions and villages; for protecting roads, defiles, and bridges; for covering the embarkation or disembarkation of troops, or the crossing of streams; for silencing field batteries or batteries of position; for increasing the infantry fire at the critical moment of a battle; for supporting field batteries and protecting them against cavalry or infantry charges; for covering the retreat of a repulsed column; and generally the accuracy, continuity, and intensity of its fire, and its economy in men for serving and animals for transporting it.

It is suggested that the relations which this gun shall occupy to the different arms of service should be prescribed by competent authority. Respectfully submitted.

Q. A. GILMORE, Maj. Engineers, B.M.G.

T. J. TREADWELL, Major Ordnance.

L. LORAIN, Capt in Third Artillery.

New York, January 16, 1874.

ORDNANCE OFFICE, January 21, 1874.

The foregoing report is respectfully submitted to the Secretary of War with the following recommendations:

- 1st. The adoption of the Gatling gun, calibre 0.42, using the service-cartridge, as an auxiliary arm for flank-defence of fortifications.
- 2nd. The adoption of special canister for 8-inch flank defence howitzer, to contain lead balls.
- 3rd. The designing and manufacturing of two casemate-carriages for the Gatling gun, as suggested by the board.
- 4th. The adoption of the Gatling gun, calibre 0.42, as an auxiliary arm for all branches of the service.
- 5th. The appointment of a board of engineer and ordnance officers to determine on the proportionate number of such guns in fortifications for flank defence and the whole number required on July 1, 1874.
- 6th. The relations it shall occupy to the different arms of service, and the number to be held in reserve for that purpose, should be settled by competent authority.

By order of the Chief of Ordnance.

S. V. BENNET, Major of Ordnance.

Respectfully referred to the Chief Engineers for remarks. By order of the Secretary of War.

H. T. CROSSIN, Chief Clerk.

Office of the Chief of Engineers,

Washington, January 23, 1874.

Respectfully referred to the Board of Engineers for Fortifications for report. By command of Brig. Gen. REMONDY and THOS. L. CASEY, Major of Engineers.

Office Board of Engineers for Fortifications,

New York, February 3, 1874.

Respectfully returned to the Chief of Engineers, with report of board of this date. J. G. BARNSWELL, Col. Eng. and Bvt. Maj. Gen. First Board of Eng. for Fortifications.